DRSCW ILR40 Activities
March 2021– March 2022

PART I. COVERAGE UNDER GENRAL PERMITS ILR40

Not applicable to the work of the DRSCW.

PART II. NOTICE OF INTENT (NOI) REQUIREMENTS

Not applicable to the work of the DRSCW.

PART III. SPECIAL CONDITIONS

Not applicable to the work of the DRSCW.

PART IV. STORM WATER MANAGEMENT PROGRAMS

A. Requirements

Not applicable to the work of the DRSCW.

B. Minimum Control Measure

1. Public Education and Outreach on Stormwater Impacts

DRSCW outreach activities for the reporting year ending March 31, 2022 included:

- The DRSCW website was updated and maintained during the reporting period and periodically updated with presentations and material (www.drscw.org).
- A searchable database with information on local aquatic biodiversity (IBIs), habitat (QHEI), and sediment and water column chemistry was maintained and periodically updated.
- Public information available on the website includes:
  - Chloride Fact Sheets aimed at mayors and managers, public works staff, commercial operators, and homeowners.
  - Model salt Storage and Handling Ordinances and Policies.
  - Model Facilities Plan for Snow and Ice Control.
  - A fact sheet summarizing alternative deicing products.
  - Information of effective operating parameters for commonly used anti icing compounds.
  - Parking lots chloride application rate guidance example sheet and aide memoire.
  - A brochure on coal tar sealants as a source of Polycyclic Aromatic Hydrocarbons (PAHs) aimed at homeowners (produced by the University of New Hampshire Stormwater Center).
  - Detailed reports on the biolocal and chemical conditions of area waterways.

Technical Presentations

Workgroup meetings: The Workgroup hosts bimonthly meetings where technical presentations are made on a variety of water quality topics and surface water management subjects. The audience consists of mainly stormwater and wastewater professionals but the public is welcome to attend. Presentations made during the period March 1, 2021 to March 31, 2022 are listed below. Selected presentations are made available on the DRSCW website and upon request. The December 8, 2021 presentation has been approved by the IEPA as CEUs for the Wastewater Operator and Drinking Water Operator Certifications.

April 28, 2021—Enhanced Street Sweeping to Reduce Phosphorus Export in Stormwater. Presenter: Lawrence A. Baker, Ph.D., Research Professor, Department of Bioproducts and Biosystems Engineering, University of Minnesota.

June 30, 2021 – Fate of Pharmaceuticals in Waste-Water Effluent Dominated Streams. Presenter: Gregory LeFevre – Assistant Professor of environmental engineering at University of Iowa.

August 25, 2021 – Results of the 2019 Biological and Water Quality study of the East Branch DuPage River Watershed. Presenter: Chris Yoder, Research Director, Midwest Biodiversity Institute.

October 27, 2021 – Chloride Trends Analysis. Presenter: Dan Bounds & Eileen Kennedy, Baxter & Woodman

December 8, 2021 – Update on Contaminants of Emerging Concerns. Presenter: Sarah Zack, Pollution Prevention Extension Specialist, Indiana-Illinois Sea Grant

Other Water Quality Presentations or Workshops by the DRSCW

March 2, 2021 -- Presentation to DuPage County Stormwater Committee on DRSCW activities. Presenter: Stephen McCracken, The Conservation Foundation.

March 9, 2021 -- Presentation to DuPage County Finance Committee on DRSCW - County Agreement. Presenter: Dave Gorman, President DRSCW

March 9, 2021 -- NARPs, State Urban Stormwater Working Group. Presenter: Stephen McCracken and Deanna Doohaluk, The Conservation Foundation.

May 10, 2021 – NARPs and the Development of Watershed Specific TP Target Levels, Lower Des Plaines Watershed Group. Presenter: Stephen McCracken and Deanna Doohaluk, The Conservation Foundation.

May 28, 2021 – An Overview of The DuPage River Salt Creek Workgroup, IAWA monthly Nutrient Subcommittee NARP meeting. Presenter: Amy Underwood, Executive Board Member, DRSCW.

June 5, 2021 – Restoration of Freshwater Ecosystems, World Environment Day Celebration, Rotary International/Bharathi Theertha/India Youth for Society. Presenter: Deanna Doohaluk, The Conservation Foundation.

July 14, 2021 – DRSCW and the Lower East Branch Stream Restoration Project, Illinois Small Mouth Association. Presenter: Stephen McCracken and Deanna Doohaluk, The Conservation Foundation.

December 1, 2021 – Wrestling with Chlorides in NE Illinois, Wisconsin DNR Chloride Working Group. Presenter: Stephen McCracken, The Conservation Foundation.

February 15, 2022 – Sensible Salting, Metropolitan Mayors Caucus Environment Committee Meeting (virtual). Presenters: Stephen McCracken, The Conservation Foundation and J. Pauling, Village of Carol Stream.

2. Public Involvement and Participation **–** No Activities

3. Illicit Discharge Detection and Elimination – No Activities

4. Construction Site Storm Water Runoff Control - No Activities

5. Post-Construction Storm Water Management in New Development and Redevelopment - No Activities

6. Pollution Prevention/Good Housekeeping for Municipal Operations

Chloride Questionnaires

The DRSCW has attempted to track adoption of sensible salting BMPs in the program area since 2007. Monitoring ambient chloride concentrations has proven an imperfect metric for tracking efficiency trends in winter salt use. Tracking target BMP adoption in the program area provides opportunities to evaluate the impacts of the chloride management workshops, identify material for future workshops, and form suppositions about salt use per unit of service expended inside the program area relative to 2006 levels.

In 2007, 2010, 2012, 2014, 2016, and 2018 the DRSCW distributed a questionnaire to approximately 80 municipal highway operations and public works agencies to obtain information about deicing practices throughout the program area. Findings of the 2018 questionnaire were include in the 2018 Annual Report. A new questionnaire was due to be distributed in 2021 but was withheld as agencies were already involved in completing the leaf litter questionnaire. The chloride questionnaire is being prepared for release at the end of April 2022 and the results will be supplied in the 2022 MS4 Activities Report.

Chloride Reduction Workshops

During the reporting period March 1, 2021 to March 31, 2022, five (5) chloride reduction workshops, a calibration workshop, and three (3) technical webinar briefs were held. Due to precautions necessitated by the Coronavirus pandemic, the workshops were held in a webinar format allowing the groups to collaborate and host the workshops jointly. The workgroup staff for the DRSCW, LDRWC, Lower Des Plains Watershed Group (LDWG) collaborated with staff from Lake County DOT and Health Dept. to coordinate the workshops. Registration was made available to agencies over a wide area of northeastern Illinois resulting in staff attending from DuPage, Will, Kane, Kendall, Lake, McHenry, Cook, Boone, Lee, and Winnebago counties. A list of attendees of the Public Roads Deicing Workshop (by County) is included in Attachment 1 and attendees of the Parking Lots & Sidewalks Deicing Workshop (by County) is included in Attachment 2.

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 view the webinar. The links were sharable so the webinars could be viewed individually or in groups. A survey was provided at the end of each webinar to those who had signed in asking for the number of attendees from each agency and for an evaluation of the webinar. The survey results indicated that a minimum of 743 persons attended the three Public Roads webinars. Certificates of attendance were provided to those who requested them. A link to the *Minnesota Snow and Ice Control: Field Book for Snowplow Operators* was provided to each registrant.

The Parking Lots and Sidewalks Deicing Workshop webinars were held on September 28 and October 7, 2021 with Fortin Consulting, Inc. presenting. The survey results indicated that there was a minimum of 196 persons who viewed the webinars. Certificates of attendance were provided to those who requested them. The surveys provided an opportunity to provide an evaluation on the webinars. A link was sent to each registrant for the *Minnesota Pollution Control Agency Winter Parking Lot & Sidewalk Maintenance Manual*.

In order to provide more targeted training, four additional workshops were held. DuPage County DOT hosted an in-person Calibration Workshop on Nov. 19, 2021. The demonstration was on a Force Am truck outfitted with a spreader system with digital controls and an open loop system. Calibration was shown for dry rock salt, wetted salt and liquids. Fourteen persons from eight agencies attended. The three other technical workshops which were presented virtually focused on more detailed information than presented in the general deicing workshops. The topics were More about Brine Making (13 agencies attended), Snow and Ice Removal Plans and Communication (14 agencies attended), and Using Organics (11 agencies attended). The recordings of the virtual technical workshops are posted on www.saltsmart.org.

Ambient Impact Monitoring

DRSCW's Chloride Education and Reduction Program is performing an analysis to demonstrate any observable reduction in chloride loading within the water quality data collected since the beginning of program efforts. For over a decade, the program has been implementing a number of chloride reduction efforts, including:

- Annual Educational workshops (for public roads and parking lots/sidewalks)
- Equipment calibration training
- Product and chemical alternative summaries
- Equipment and salt application advancements
- Salt usage, storage and deicing best management practices
- Example salt use policies and management plans

The goal of the analysis is to observe the impact, if any, of the chloride education program on chloride loadings generated from DRSCW water quality data collected from 2009 to present. While the winter concentration data graphed in section 2.2 suggests a long-term downward trend in winter concentrations, this analysis is an attempt to produce a more comprehensive appraisal of long term trends in chlorides in area waterways.

The analysis is challenging. There are number of factors that dictate the magnitude of chloride impact on water quality data. Principally variability in winter weather accounted for variation in temperatures (air and pavement), types of precipitation (rain, snow and ice), the number of storms, types of storms and inconsistencies in the definition of municipal salt application events across the DRSCW's watershed areas. The analysis needed to account for this inherent variability to as great a degree as possible. To help accomplish this the DRSCW purchased 10 years of weather data (snow and ice precipitation data for numerous locations and max and minimum air temperature data) from Weather Command / Murray and Trettel, Inc. The analysis steps for each site where winter monitoring is conducted (see Section 2.3) include:

- Calculation of estimated chloride concentration from winter conductivity data
- Calculation of a warm weather regression value from summer concentration data and summer conductivity measures
- Calculation of estimated chloride summer concentrations
- Creation of loading data (in pound per day) from the estimated concentration data using USGS flow data
- Identification of ice events from the weather command data and "replacement" of such events with loadings observed under snow events with the same accumulation
- Graphing of loading and concentration data for each site

This analysis has been completed and phase one results have been produced. Preparation of the final report is on-going and is expected to be completed by mid-2022.

Continuous Chloride Monitoring

When chlorides are present in elevated concentrations in rivers, they harm aquatic invertebrates, fish, and aquatic and terrestrial plants. High chloride concentrations also corrode structures like bridges, increasing maintenance costs; and chlorides are very difficult to remove from water through treatment. In the DRSCW and LDRWC watersheds, the main source of chlorides in the rivers is from winter deicing applications. In an effort to understand and reduce chloride levels in the watershed, year-round conductivity monitoring is carried out.

Ambient monitoring of conductivity is carried out at six (6) locations in the DRSCW program area (5 sites monitored by the DRSCW and 1 site monitored by MWRD). A map of continuous chloride monitoring stations is included in Map 1. DRSCW chloride sites are positioned upstream and downstream in their watersheds to capture concentration data within the watershed. Long term data collection allows the DRSCW to monitor changes in chloride concentrations over time. As the main driver of chloride in these watersheds is from deicing applications in the winter, the DRSCW are able to monitor the efficacy of outreach campaigns and projects aimed at reducing chloride in the waterways. Year round monitoring shows how chloride levels change throughout the year. Chloride concentrations spike in the winter months, and gradually decrease throughout the spring, summer and fall. The greatest challenge in chloride reduction is maintaining road safety.

The upstream Salt Creek chloride site (Busse Woods) is at the upstream most point of the Lower Salt Creek watershed. The site isn't placed further upstream as there are no treatment plants in the Upper Salt Creek watershed and the original purpose of the site was to monitor for wastewater effluent impacts. In 2021, MWRD did not conduct ambient winter conductivity monitoring at the Salt Creek at Busse Woods Main Dam (Upstream Salt Creek Site). As of winter, 2022 DRSCW has taken over management of the site at Salt Creek Busse Woods Main Dam.

For the sites located within the DRSCW watersheds, conductivity concentrations are used to calculate chloride concentrations based on a linear relationship established by the DRSCW in 2007 and 2019. Calculated Annual chloride concentrations for the winter months from 2007-2021 for six (6) sites are depicted in Figures 1-6. Years are broken up by continuous winter season, e.g. the point labeled as "2021" is comprised of data from Fall 2020 to Spring 2021. The Daily Max represents the highest chloride daily value calculated from that year's winter season. The Winter Average is the average of all measurements from the winter season. The Four-Day Average is the maximum value of the year's four-day averages.

Figure 1. *Calculated Chloride Concentrations - Winter Months (2007-2020) for Salt Creek at Busse Woods Main Dam. Data was not collected in 2021.*

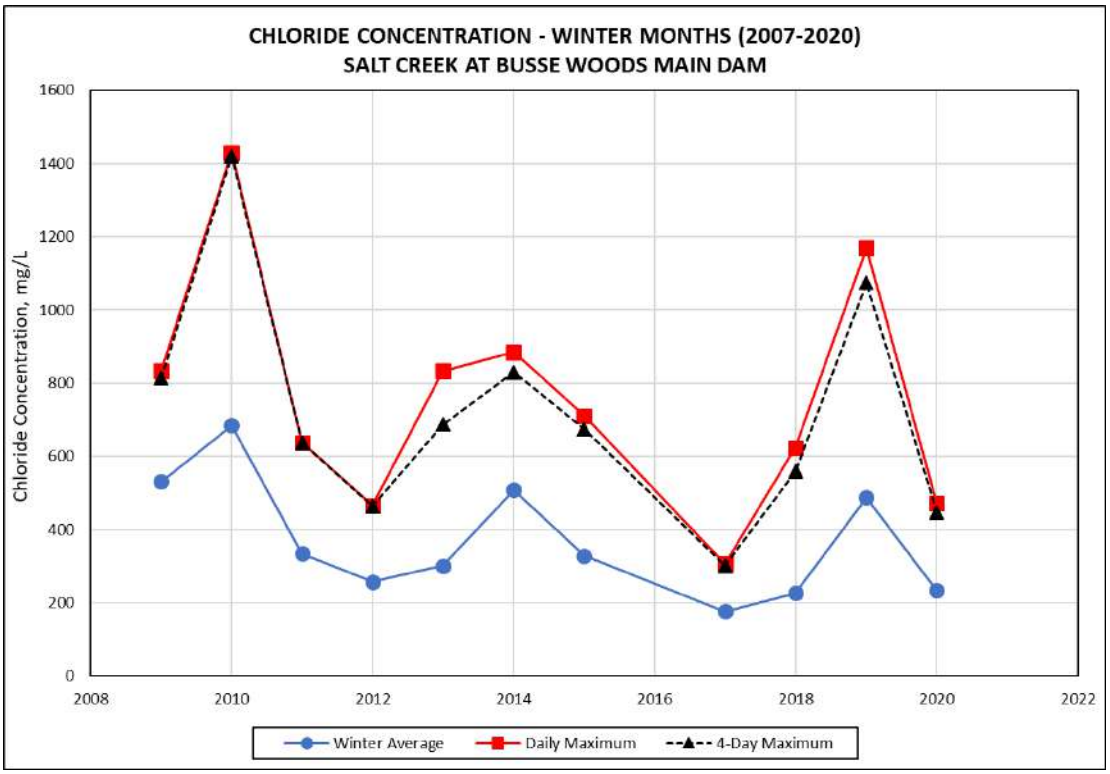


Figure 2. *Calculated Chloride Concentrations - Winter Months (2007-2021) for Salt Creek at Wolf Road*

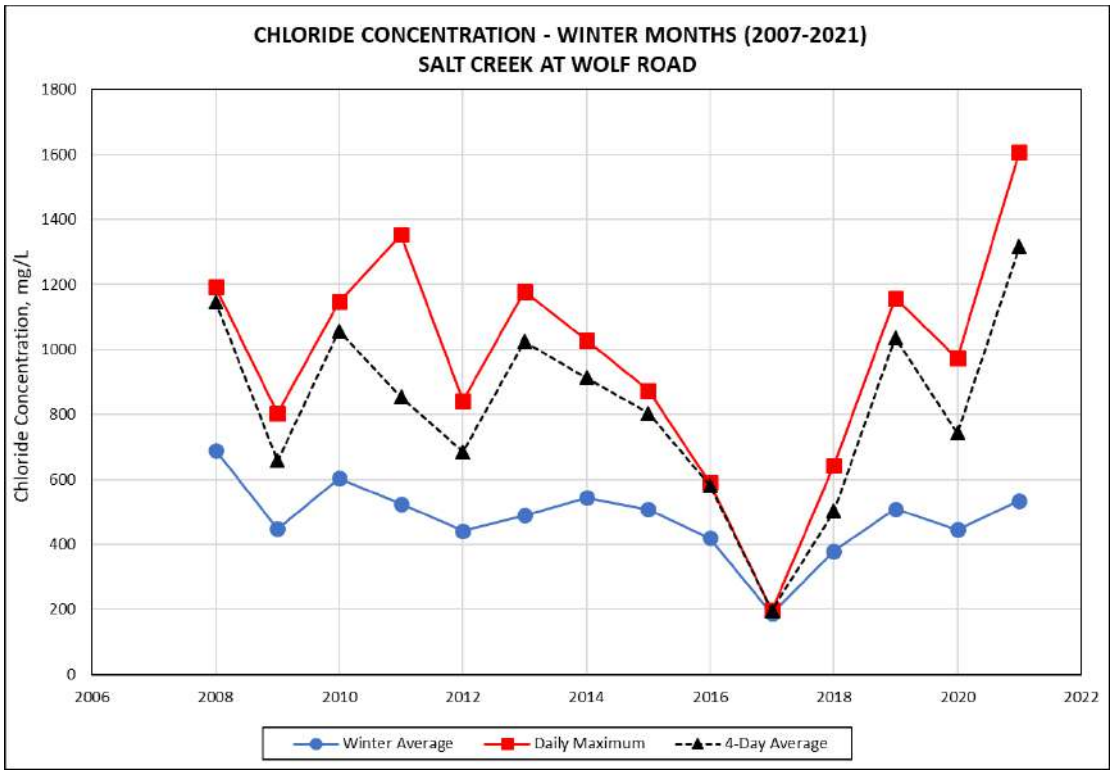


Figure 3. *Calculated Chloride Concentrations - Winter Months (2007-2021) for the East Branch DuPage River at Army Trail Road*

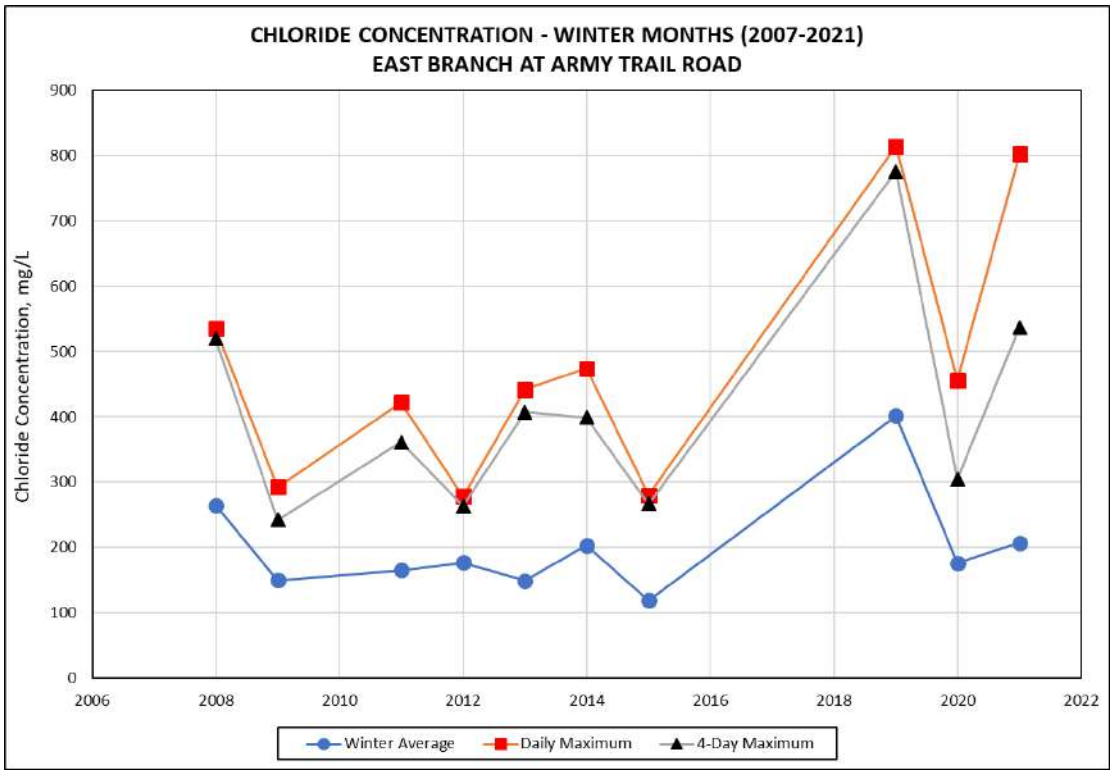


Figure 4. *Calculated Chloride Concentrations - Winter Months (2008-2021) for the East Branch DuPage River at Hobson Road*

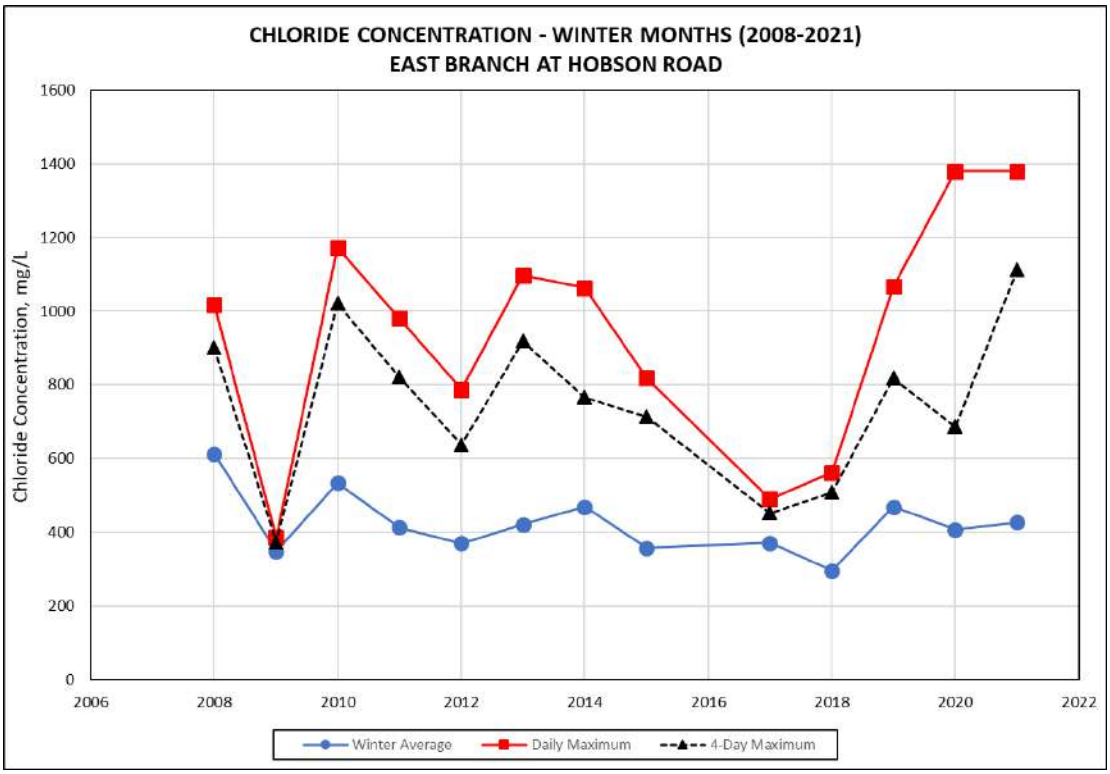


Figure 5. *Calculated Chloride Concentrations - Winter Months (2007-2021) for the West Branch DuPage River at Arlington Drive*

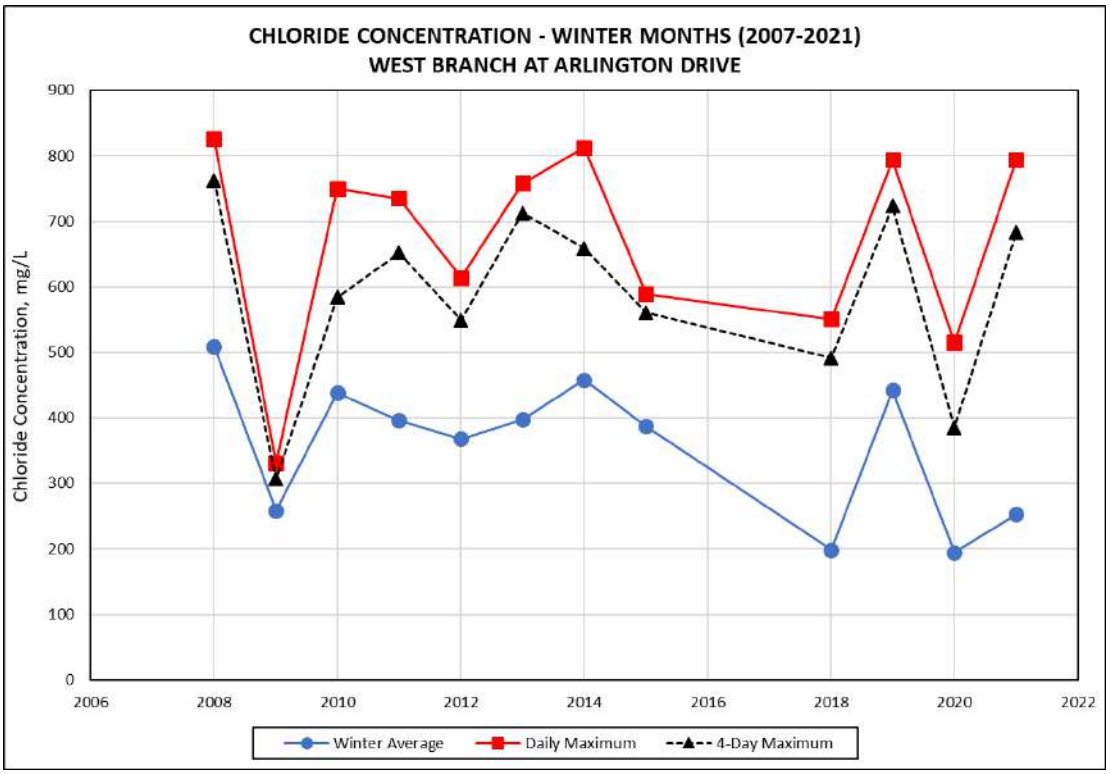
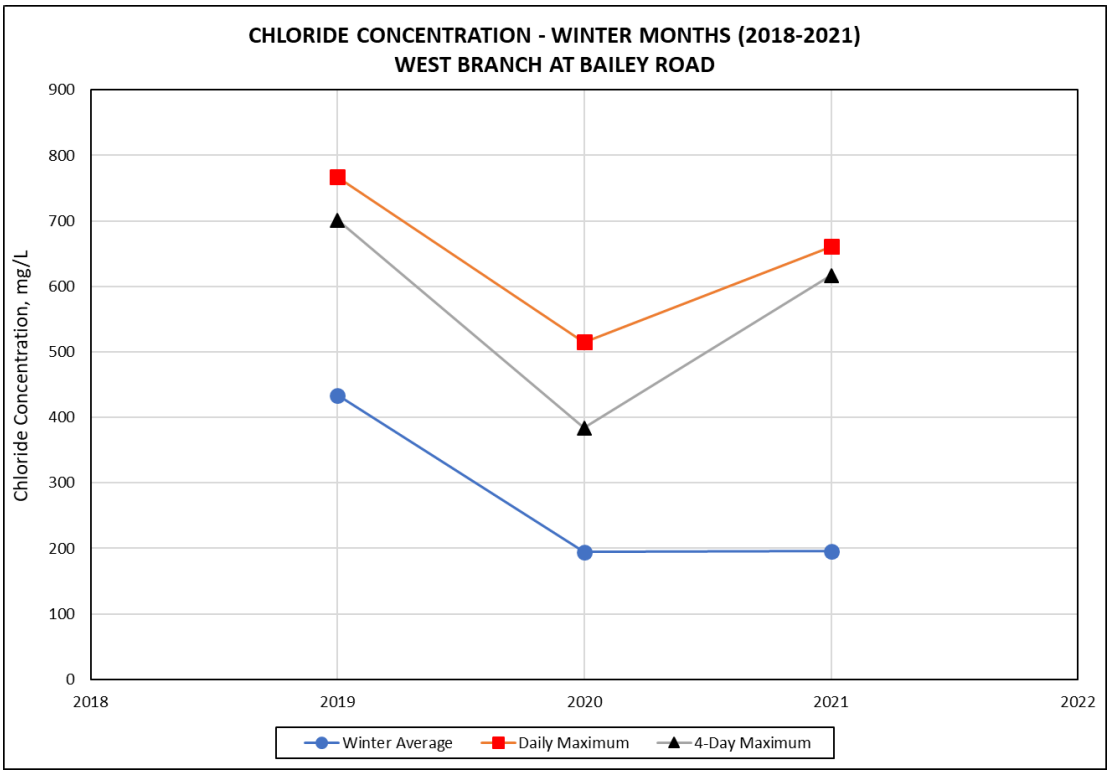


Figure 6. *Calculated Chloride Concentrations - Winter Months (2018-2021) for the West Branch DuPage River at Bailey Road*



C. Qualifying State, Country or Local Program

Not applicable to the work of the DRSCW.

D. Sharing Responsibility

This report outlines the activities conducted by the DRSCW 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.

E. Reviewing and Updating Stormwater Management Programs

Not applicable to the work of the DRSCW.

PART V. MONITORING, RECORDKEEPING, AND REPORTING

A. Monitoring

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 DRSCW monitoring program meets the following monitoring objectives and requirements outlined in the permit:

- Measuring pollutants over time (Part V. A. 2. b. ii)
- Sediment monitoring (Part V. A. 2. b. iii)
- Assessing physical and habitat characteristics such as stream bank erosion caused by storm water discharges ((Part V. A. 2. b. vi)
- Collaborative watershed-scape monitoring (Part V. A. 2. b. x)
- Ambient monitoring of total suspended solids, total nitrogen, total phosphorus, fecal coliform, chlorides, and oil and grease (Part V. A. 2. c.)

The DRSCW water quality monitoring program is made up of four components: 1) Bioassessment; 2) Continuous DO monitoring; 3) Expanded DO monitoring, and 3) Continuous Chloride Monitoring. Components 1-3 are discussed below and component 4 was discussed in the previous section of this report.

BIOASSESSMENT

Overview and Sampling Plan

A biological and water quality survey, or "biosurvey", 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 DRSCW bioassessment is the latter. The DRSCW

bioassessment program began in 2007 with sampling in the West Branch DuPage River, East Branch DuPage River and Salt Creek watersheds. From 2009-2016, each watershed was sampled on a 3-year rotation beginning with the West Branch DuPage River watershed in 2006. Beginning in 2017, watershed will be sampled in a 4 or 5-year rotation ensuring that each watershed will be sampled during the effective period of the ILR40 permit. The bioassessment program functions under a quality assurance plan agreed on with the Illinois Environmental Protection Agency (http://drscw.org/wp/bioassessment/). Table 1 details the bioassessment sampling dates for each DRSCW watershed.

Table 1. *Bioassessment sampling dates for the DRSCW watershed*

Watershed	Sampling Completed (year)	Sampling Scheduled (year)
East Branch DuPage River	2007, 2011, 2014, 2019	2023
West Branch DuPage River	2007, 2009, 2012, 2015, 2020	2024
Salt Creek	2007, 2010, 2013, 2016, 2021	2025

The DRSCW 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 DuPage River and Salt Creek watersheds to track and understand changes through time in response to abatement actions or other influences.

The data collects 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 are posted on the DRSCW at http://drscw.org/wp/bioassessment/. It is not the role of the bioassessments to identify specific remedial actions on a site specific or watershed basis. However, the baseline data provided by the bioassessments contributes to the Integrated Priority System that was developed to help determine and prioritize remedial projects (http://drscw.org/wp/project-identification-and-prioritization-system/).

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 2.

Representativeness – Reference Sites

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.

Table 2. *Number of sampling sites in the DRSCW project area*

Method/Protocol	West Branch DuPage River (2020)	East Branch DuPage River (2019)	Salt Creek (2021)	Reference Sites (2006-2021)	Total Sites
Biological sampling					
Fish	42	41	65*	13	155
Macroinvertebrates	42	41	65*	13	155
QHEI	42	41	65*	13	155
Water Column Chemical/Physical Sampling					
Nutrients**	42	38	57	6	143
Water Quality Metals	30	38	34	6	108
Water Quality Organics	18	11	17	6	52
Sediment Sampling	23	15	27	6	71

*Includes eight (8) sites that were being monitored as part of pre-project monitoring at Fullersburg Woods and post-project monitoring at the Preserve at Oak Meadows.

**Also included indicators or organic enrichment and ionic strength, total suspended solids (TSS), DO, pH and temperature. Also, in 2019, 2020 and 2021, chlorophyll A was included as a nutrient parameter.

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.

The Fish, Habitat and Water Chemistry sampling results presented in this report summarize the findings for the mainstem reaches of Salt Creek including the 2021 data and macroinvertebrate

sampling for the sampling conducted in 2020 in the West Branch DuPage River. A map of the 2020 West Branch DuPage River bioassessment sites can be found in Map 2 and a map of the 2021 Salt Creek sampling sites can be found in Map 3. A list of the sites sampled as part of the 2021 Salt Creek bioassessment is included in Table 3. Table 3 includes the site name, site location, and the type and frequency of each sampling method. Detailed analysis of all results for the East Branch DuPage River, the West Branch DuPage River and Salt Creek and their tributaries and can be found at http://drscw.org/wp/bioassessment/. Additionally, summaries of the findings for the mainstem East Branch DuPage River and West Branch DuPage River can be found in the 2019 and 2020 DRSCW MS4 Activities Report.

The fish and macroinvertebrate results are presented as Index of Biotic Integrity (IBI) scores. IBI is an evaluation of a waterbody's biological community in a manner that allows the identification, classification and ranking of water pollution and other stressors. IBIs allow the statistical association of various anthropogenic influences on a water body with the observed biological activity in said water body and in turn the evaluation of management interventions in a process of adaptive management. Chemical testing of water samples produces only a snapshot of chemical concentrations while an IBI allows an evaluation of the net impact of chemical, physical and flow variables on a biological community structure. Dr. James Karr formulated the IBI concept in 1981.

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 linear 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.

Table 3. *2021 Bioassessment Sampling Sites and Frequency of Sampling*

Site ID	RIVER	Latitude	Longitude	Frequency of Samling during the 2021 Bioassessment							
				Biological Sampling	QHEI	Demand/ Nutrient	Metals	Water Organics	Sediment	Sulfate	Oil and Grease
SC01	Tributary to Salt Creek	42.143664	-88.078158	1	1	2					
SC02	Tributary to Salt Creek	42.11327	-88.082431	1	1	2					
SC03	Salt Creek	42.108005	-88.083462	1	1	2					
SC04	Salt Creek	42.110637	-88.062385	1	1	4					
SC05	Tributary to Salt Creek	42.12518	-88.039411	1	1	2					
SC06	Tributary to Salt Creek	42.116387	-88.012306	1	1	2					
SC07	Salt Creek	42.077084	-88.053031	1	1	4	4				
SC08	Tributary to Salt Creek	42.067958	-88.019216	1	1	4					
SC11	Tributary to Salt Creek	42.028369	-88.055516	1	1	4					
SC12	Tributary to Salt Creek	42.025566	-88.063601	1	1	2					
SC13	Tributary to Salt Creek	42.015691	-88.054162	1	1	2					
SC14	Tributary to Salt Creek	42.017338	-88.045095	1	1	4	4				
SC15	Salt Creek	42.051095	-88.008992	1	1	6	4		1	1	1
SC16	Spring Brook	41.971781	-87.998034	1	1	6	4		1	1	1
SC17	Spring Brook	41.967116	-88.046834	1	1	4					
SC18	Spring Brook	41.958246	-88.06508	1	1	4					
SC19	Meacham Creek	41.995347	-88.051359	1	1						
SC20	Tributary to Meacham Creek	41.988298	-88.054429	1	1	2					
SC21	Spring Brook	41.97324	-88.079282	1	1	2	2	1	1		
SC22	Westwood Creek	41.93982	-87.992964	1	1	4		1	1		
SC23	Salt Creek	41.936938	-87.984234	1	1	9	6	1	1		
SC24	Addison Creek	41.946217	-87.926124	1	1	2					
SC25	Tributary to Addison Creek	41.937825	-87.939885	1	1	2					
SC26	Addison Creek	41.928711	-87.910687	1	1	4					
SC27	Addison Creek	41.898963	-87.883344	1	1	4	4				
SC28	Addison Creek	41.861162	-87.867743	1	1	6	4		1	1	1
SC29	Salt Creek	41.818297	-87.833708	1	1	12	6	1	1	1	1
SC30	Ginger Creek	41.837873	-87.970817	1	1	2					
SC31	Ginger Creek	41.839376	-87.953247	1	1	4					
SC32	Oakbrook Creek	41.85377	-87.948831	1	1	2					
SC33	Sugar Creek	41.872959	-87.959728	1	1	4					
SC34	Salt Creek	41.951765	-87.986441	1	1	9	6	1	1		
SC35	Salt Creek	41.944091	-87.981079	1	1	9	6	1	1		
SC35A	Salt Creek	41.9425	-87.9821	1	1						
SC35B	Salt Creek	41.94112	-87.983	1	1						
SC36	Oak Brook	41.850896	-87.958463	1	1	2					
SC37	Salt Creek	41.885162	-87.959927	1	1	9	3	1	1		
SC38	Salt Creek	41.890375	-87.964024	1	1	9	6	1	1		
SC39	Salt Creek	41.919985	-87.972745	1	1	9	6	1	1		
SC40	Salt Creek	41.962745	-87.98439	1	1	9	6	1	1		
SC41	Salt Creek	41.970302	-87.988175	1	1	9	6	1	1		
SC42	Salt Creek	41.991326	-87.994485	1	1	6	4		1		
SC43	Salt Creek	42.011973	-88.00092	1	1	6	4	1	1	1	1
SC44	Salt Creek	42.01602	-88.000508	1	1	6	4	1	1		
SC45	Tributary to Salt Creek	42.084211	-88.019856	1	1	4	4	1	1		
SC46	Spring Brook	41.966727	-88.077424	1	1	2	2	1	1		
SC47	Spring Brook	41.963342	-88.031508	1	1	6	4	1	1		
SC48	Addison Creek	41.872732	-87.868775	1	1	6	4		1		
SC49	Salt Creek	41.825756	-87.900036	1	1	9	6	1	1	1	1
SC50	Salt Creek	42.021262	-88.004911	1	1	6	4		1		
SC51	Salt Creek	41.875767	-87.95799	1	1	9	6		1	1	1
SC52	Salt Creek	41.820328	-87.926117	1	1	9	6		1		
SC53	Salt Creek	41.825544	-87.931557	1	1	9	6		1		
SC53A*	Salt Creek	41.82112	-87.9286	1	1						
SC54	Salt Creek	41.845607	-87.851945	1	1	12	6		1		
SC55	Salt Creek	41.84763	-87.936374	1	1	6	6				
SC56	Salt Creek	41.832606	-87.941979	1	1	6	6				
SC56A*	Salt Creek	41.8306	-87.940435	1	1						
SC56B*	Salt Creek	41.830287	-87.931866	1	1						
SC56C*	Salt Creek	41.82849	-87.93059	1	1						
SC57	Salt Creek	41.873713	-87.95526	1	1	9	6				
SC59	Salt Creek	41.82608	-87.91459	1	1	12	6				
SC60	Salt Creek	41.82595	-87.88617	1	1	12	6				
SCBR	Salt Creek					6					

2021 Salt Creek Results

Fish assemblage conditions throughout the Salt Creek watershed in 2021 are in the poor and fair ranges (Figure 7). Tables 4 and 5 include the key to dams and Wastewater Treatment Plants (WWTP) discharges denoted on the IBI, QHEI, and water chemistry figures for Salt Creek.

Figure 7. *Fish IBI scores in Salt Creek, 1983, 207, 2010, 2013, 2014, 2016, and 2021 in relation to municipal POTW dischargers and dams.*

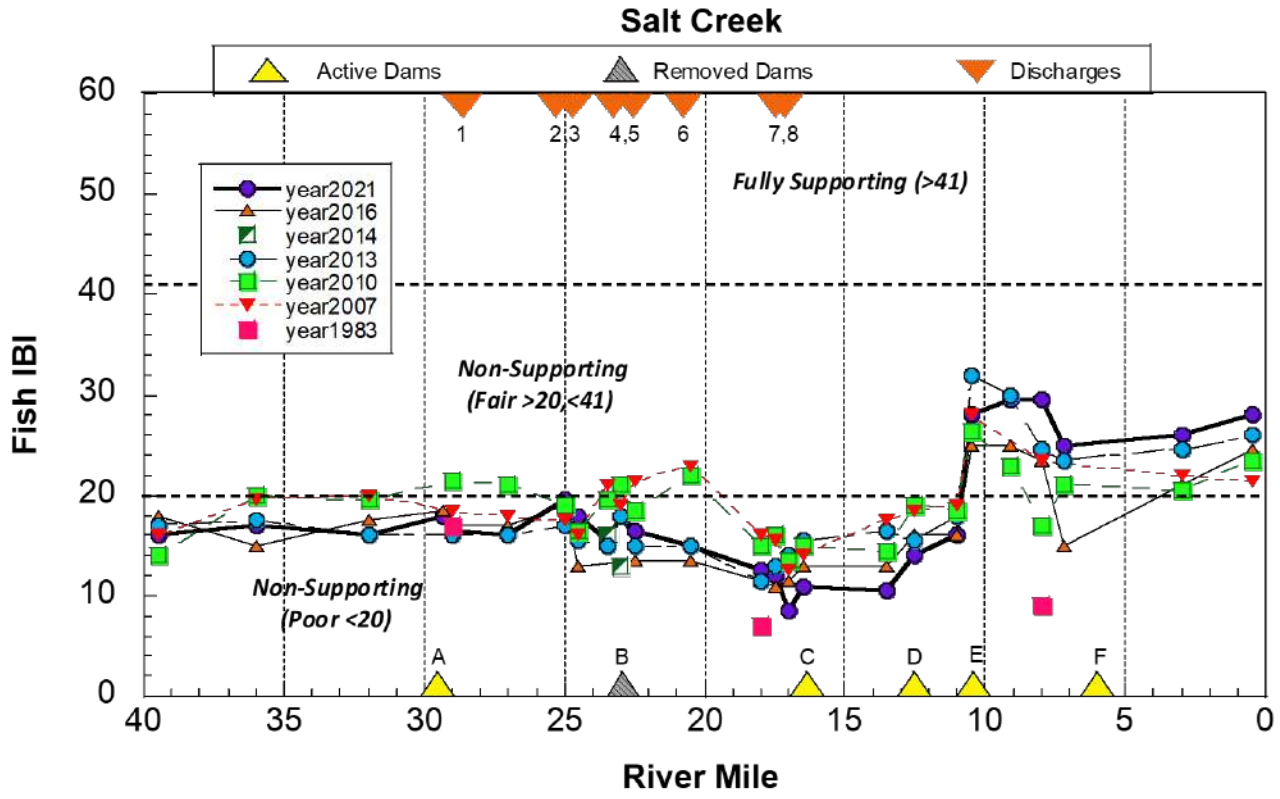


Table 4. *Key to dams on the dam included on the Salt Creek IBI, QHEI, and water chemistry figures*

Figure Reference	Name of Dam
A	Busse Woods Dam
B	Oak Meadows Dam (removed in 2016)
C	Graham Center Dam
D	Old Oak Brook Dam
E	Fullersburg Woods (Graue Mill) Dam
F	Possum Hollow Woods Dam

Table 5. *Key to POTW dischargers on the Salt Creek IBI, QHEI, and water chemistry figures*

Figure Reference	WWTP Discharge
1	MWRDGC Egan WRP
2	Itasca STP
3	Wood Dale North STP
4	Wood Dale South STP
5	Addison North STP
6	Addison South - Larocca STP
7	Salt Creek Sanitary District
8	Elmhurst WWTP

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.

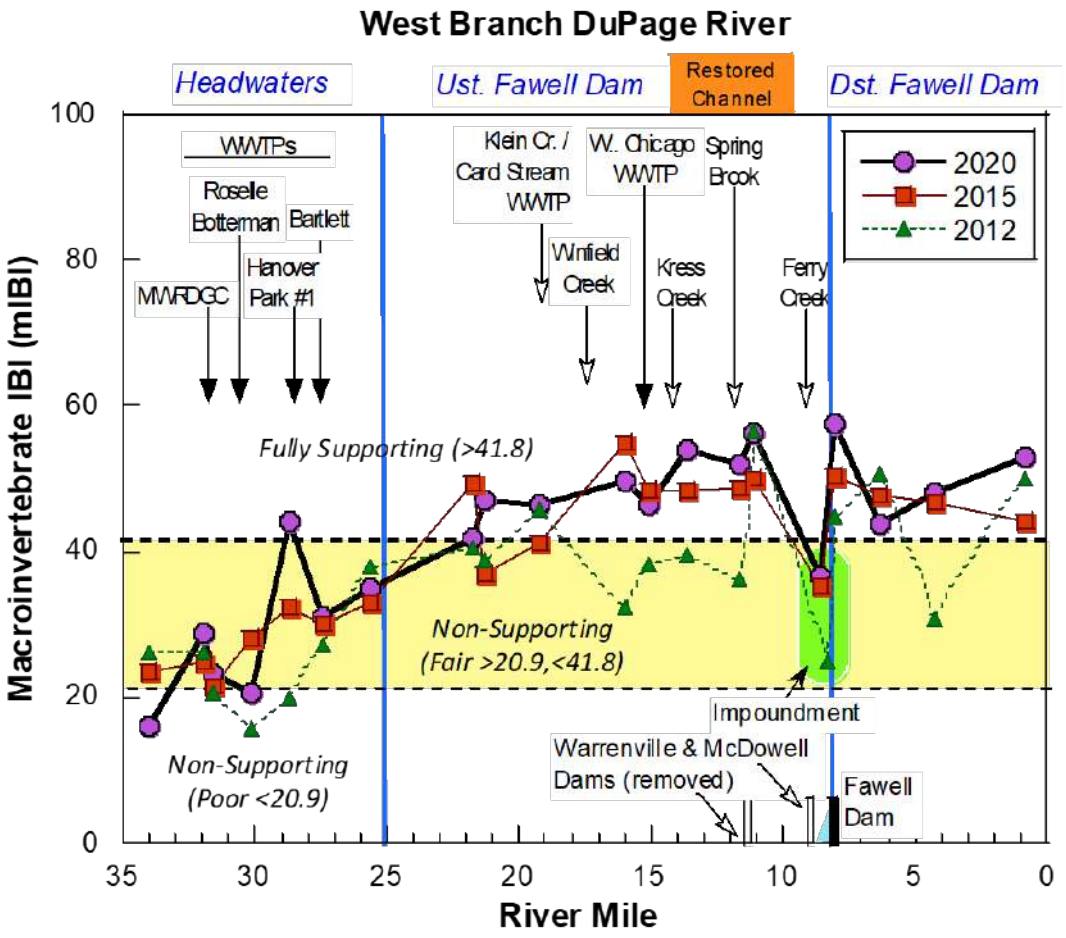
2021 Salt Creek Results

Results from the 2021 macroinvertebrate sampling in the Salt Creek watershed are not available at the time of the report. Sampling results will be provided in the 2022-2023 MS4 Activities Report.

2020 West Branch DuPage River

Macroinvertebrate collections from the 2020 West Branch are in the primarily in the good and fair ranges (Figure 8).

Figure 8. *Macroinvertebrate IBI scores in the West Branch DuPage River, 2012, 2015, and 2020 in relation to municipal POTW dischargers, tributaries, and dams.*



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.

2021 Salt Creek Results

The physical habitat of a stream is a primary determinant of biological quality. Streams in the glaciated Midwest, left in their natural state, typically possess riffle-pool-run sequences, high sinuosity, and well-developed channels with deep pools, heterogeneous substrates and cover in the form of woody debris, glacial tills, and aquatic macrophytes. The QHEI categorically scores

the basic components of stream habitat into ranks according to the degree to which those components are found in a natural state, or conversely, in an altered or modified state.

Salt Creek

Based on QHEI scores, mainstem habitat quality fell mostly in the fair range, but varied by location (Figure 9).

WATER QUALITY AND SEDIMENT CHEMISTRY

Methodology

Water column and sediment samples are collected as part of the DRSCW bioassessment programs. Total number of collected samples by watershed typical for a full assessment by watershed are given in Table 6. 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 (Table 7). Organics sampling is a single sample done at a subset of sites. Sediment sampling is done at a subset of 136 sites using the same procedures as IEPA. Table 3 details the 2021 Salt Creek Bioassessment sites and the frequency of sample at each site. Map 3 shows the location of the sites within Salt Creek where water chemistry was collected. Map 4 shows the location of the Salt Creek bioassessment sediment sampling sites.

The parameters sampled for are included in Table 6 and can be grouped into demand parameters, nutrients, demand, metals and organics. All sampling occurs between May and October of the sample year with the exception of sediment that occurs October to December. The Standard Operating Procedure for water quality sampling can be found at http://drscw.org/wp/bioassessment/.

Table 6. *Total number of samples by watershed typical for a full assessment by watershed*

Watershed	Approximate # Sites*	Demand Samples	Nutrients Samples	Metals Samples	Organics Samples
Salt Creek (2021)	57	319	319	167	17
West Branch DR (2020)	42	225	225	116	18
East Branch DR (2019)	38	212	212	100	11

*Does not include sites sampled as part of pre- or post-project monitoring of physical projects.

***Figure 9**. Qualitative Habitat Evaluation Index (QHEI) scores for Salt Creek in 2007, 2010, 2013, 2014, 2016, and 2021 in relation to municipal WWTP discharges and dams.*

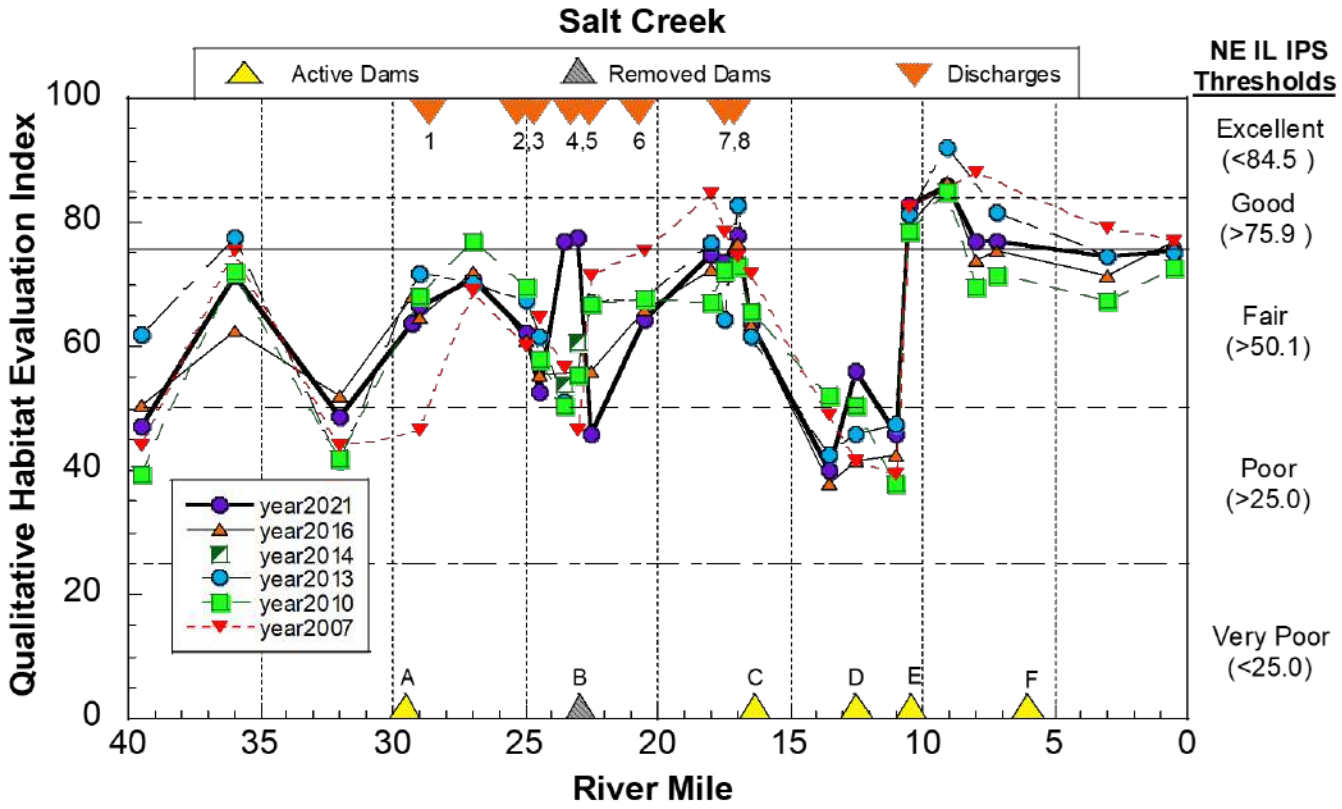


***Table 7.** Approximate distribution of sample numbers by drainage area across the monitoring area*

Drainage Area and site numbers	>100 sq. mi (n=12)	>75 sq. mi (n=25)	>38 sq. mi (n=11)	>19 sq. mi (n=11)	>8 sq. mi (n=15)	>5 sq. mi (n=24)	>2 sq. mi (n= 46)
Mean # Samples demand /nutrients	12	9	6	6	4	4	2
Mean # Samples metals	6	6	4	4	2	2	0

Table 8. *Water Quality and sediment Parameters sampled as part of the DRSCW Bioassessment Program*

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

2021 Salt Creek Results

The discussion presented below focuses on the constituents listed in the MS4 permit: total suspended solids, total nitrogen, total phosphorus, fecal coliform, chlorides, and oil and grease. Total nitrogen is presented as ammonia, nitrate, and total kjeldahl nitrogen (TKN). Prior to the 2016 sampling period, fecal coliform and oil and grease sampling was not conducted. Oil and grease sampling and/or fecal coliform were added to the bioassessment sampling for Salt Creek in 2016, the East Branch DuPage River in 2019, and the West Branch DuPage River in 2020 ensuring that each watershed will be sampled for that parameter during the effective period of the ILR40 permit.

West Branch mainstem flows are effluent dominated during the late summer-early fall months. As such, chemical water quality is highly influenced by the concentration and composition of chemical constituents in WWTP effluents (Figures 10-12).

In 2021, samples for fecal coliform samples were collected at five (5) sites on the mainstem Salt Creek, one (1) site on Springbrook, and one (1) sites on Addison Creek. Each site was sampled 5

times within a 30-day period beginning on June 28, 2022. The results are summarized below in Table 9.

Table 9. *Concentrations of fecal coliform in 2021 in the Salt Creek watershed*

Site Number	Site Location	Fecal Coliform cfu/100 ml					Fecal Coliform cfu/100 ml
		6/28/2022	7/7/2022	7/12/2022	7/19/2022	7/26/2022	
Salt Creek							
SC15	Salt Creek at Higgins	400	650	1400	1900	1000	928.90
SC43	Salt Creek at Arlington Heights	<50	50	100	1100	50	128.78
SC51	Salt Creek at Elmhurst	200	<50	400	1550	<50	498.66
SC49	Salt Creek at Wolf Road	<50	200	1600	2750	1000	968.55
SC29	Salt Creek at Rt 171	2100	1400	2300	9300	2500	2749.79
Tributaries							
SC16	Springbrook at Prospect Avenue	200	50	200	5100	<50	317.80
SC28	Addison Creek at Gartner Road	9300	8000	1900	390000	<50	15323.14

Sediment Chemistry Results

Detailed analysis and results for sediment chemistry is located at http://drscw.org/wp/bioassessment/.

Figure 10. *Median concentrations of total suspended solids (top panel) and TKN (lower panel) from Salt Creek samples in 2007, 2010, 2013, 2016, and 2021 in relation to municipal WWTP discharges (top X-axis) and dams (bottom X-axis).*

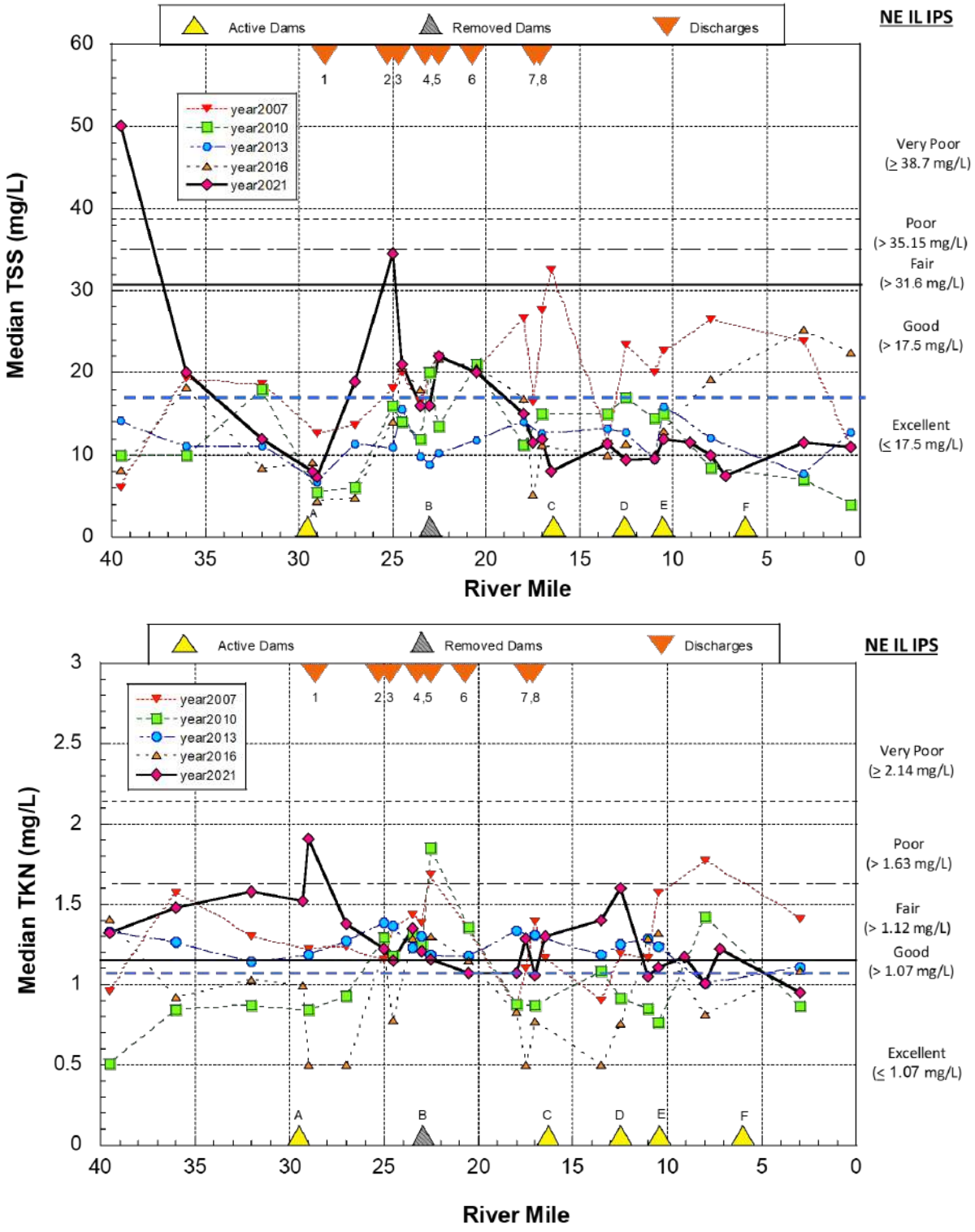


Figure 11. *Median concentrations of ammonia (top panel) and nitrate (lower panel) from Salt Creek samples in 2007, 2010, 2013, 2016, and 2021 in relation to municipal WWTP discharges (top X-axis) and dams (bottom X-axis).*

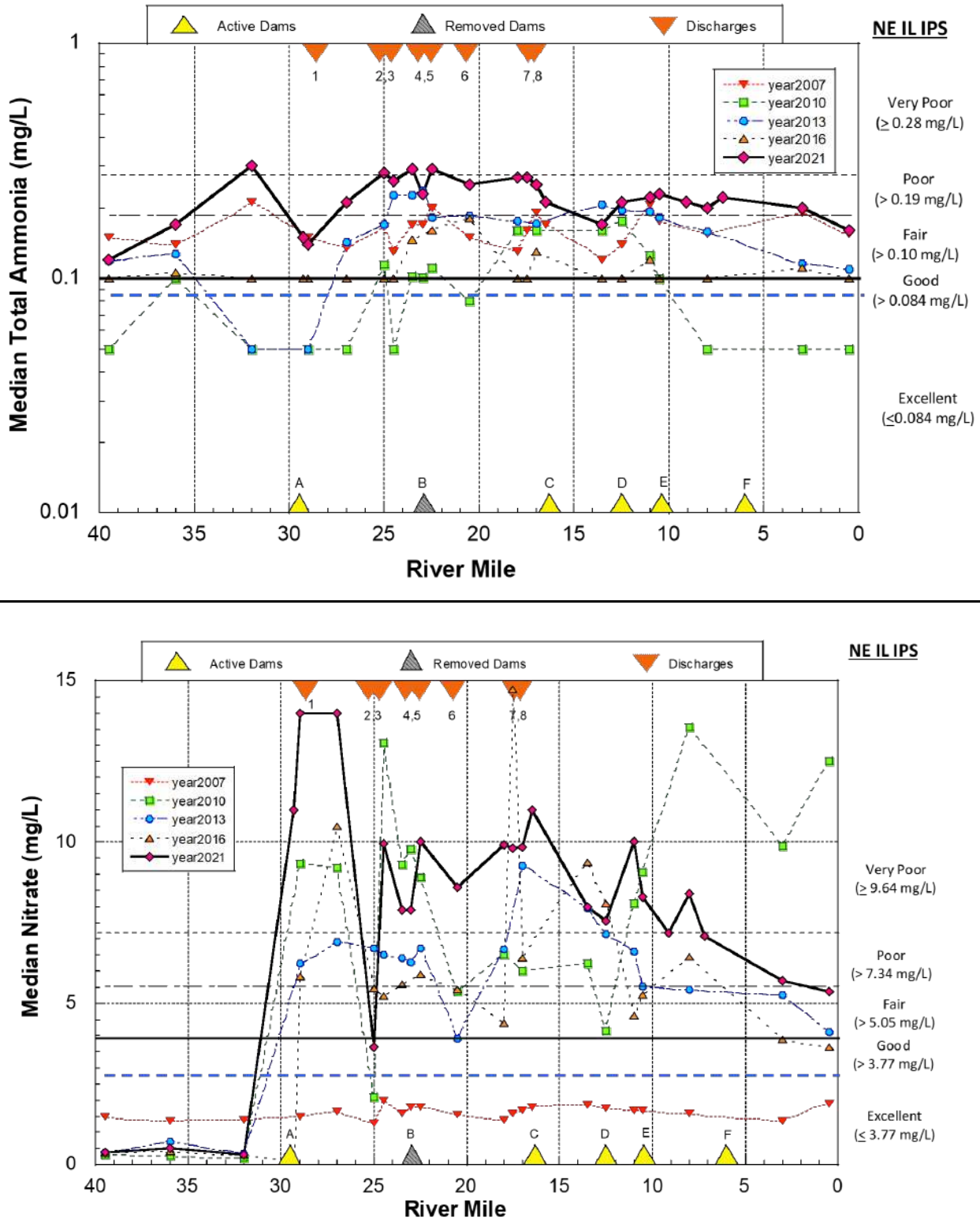
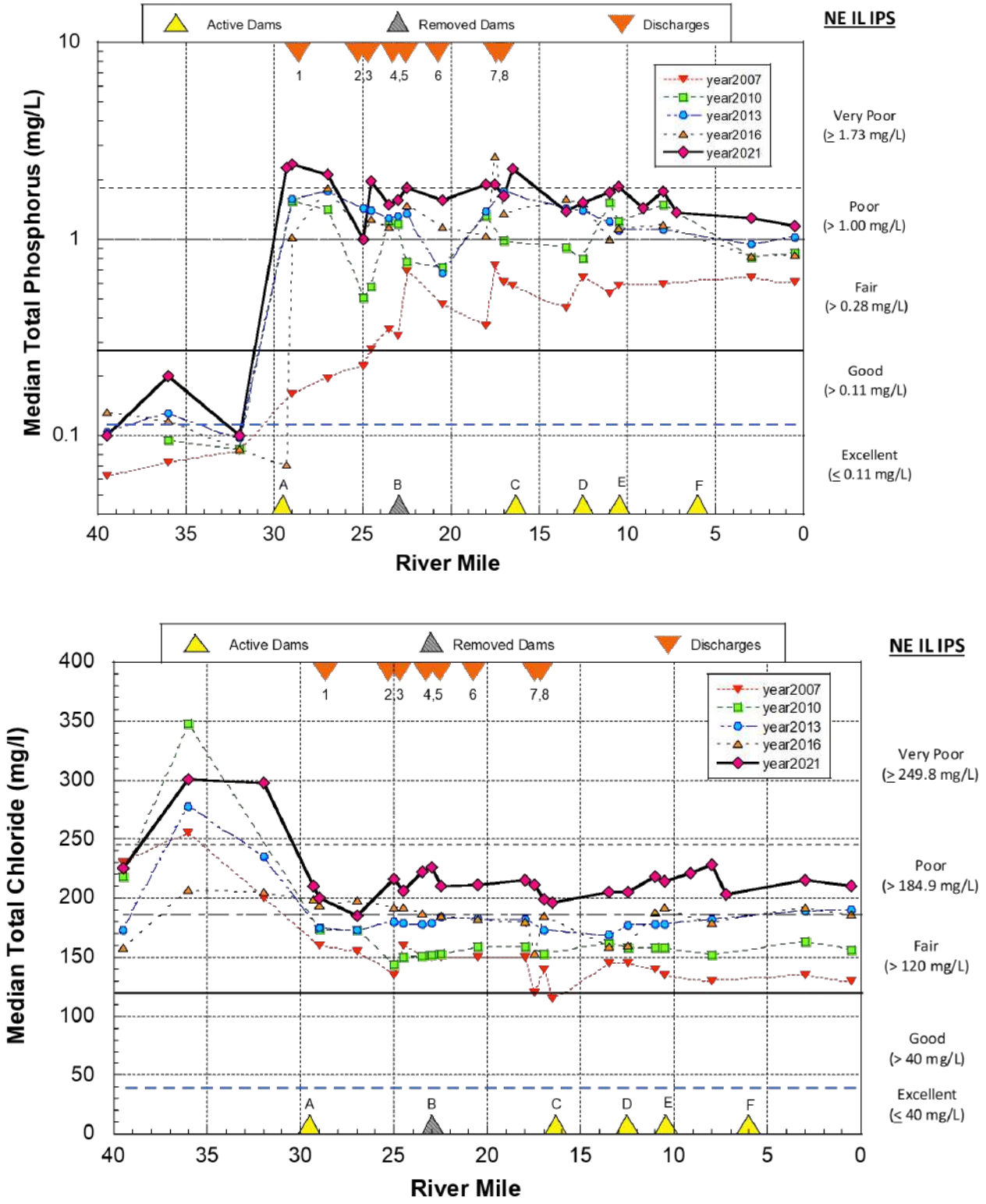


Figure 12. *Median concentrations total phosphorus (top panel) and chloride (bottom panel) from Salt Creek samples in 2007, 2010, 2013, 2016, and 2021 in relation to municipal WWTP discharges (top X-axis) and dams (bottom X-axis).*



DISSOLVED OXYGEN (DO) MONITORING

Background and Methodology

The Illinois Environmental Protection Agency (IEPA) report, Illinois 2004 Section 303(d) List, listed dissolved oxygen (DO) as a potential impairment in Salt Creek, and the East and West Branches of the DuPage River. The report suggested that the DO levels in selected reaches of these waterways might periodically fall to levels below those required by healthy aquatic communities.

All rivers and creeks in DuPage County are classified as General Use Waters. The present water quality standards for dissolved oxygen in General Use Waters is:

1. During the period of March through July
    a. 5.0 mg/L at any time; and
    b. 6.0 mg/L as a daily mean averaged over 7 days.

2. During the period of August through February,
    a. 3.5 mg/L at any time;
    b. 4.0 mg/L as a daily minimum averaged over 7 days; and
    c. 5.5 mg/L as a daily mean averaged over 30 days.

Following listing on the 303 (d) list three (3) TMDLs were prepared by the IEPA for Salt Creek and the East Branch of the DuPage River in 2004 and two (2) TMDLs were prepared for the West Branch DuPage River and Spring Brook #1 in 2019. In response to the TMDLs, the DRSCW committed to develop and manage a continuous long-term DO monitoring plan for the project area in order to assess the nature and extent of the DO impairment and to allow the design of remedial projects. The continuous DO data is also used to assess the impact of DO improvement projects such as the Churchill Woods and Oak Meadow dam removals.

In 2021, the DRSCW in collaboration with DuPage County Stormwater Management gathered continuous DO data via water quality sondes at three (3) sites on Salt Creek (SCBW, SCOM, SCFW), four (4) sites on the East Branch DuPage River (EBAR, EBCB, EBHR, EBWL), and five (5) sites on the West Branch DuPage River (WBAD, WBBR, WBWD, WBMG, WBNPV) that will be utilized in the calibration and verification of the updated QUAL2Kw models. Historically, the DRSCW also collected data at an additional site on the East Branch DuPage River at Hidden Lake (EBHL), however, in 2021 the bridge where the sonde is located was undergoing repairs and the sonde casing needed to be removed. The DRSCW plans to reestablish a monitoring location in Hidden Lake once the construction/repair project is complete. The Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) also typically monitors two (2) additional locations on Salt Creek: Salt Creek at Wolf Road and Salt Creek downstream of Busse Woods dam. However, in 2021, MWRDGC discontinued their monitoring at the Salt Creek downstream of Busse Woods dam and as such, no data was collected at this location in 2021. The DRSCW

has re-established the Salt Creek downstream of Busse Woods dam and data collection resumed in 2022. All sondes are deployed from May through October and collected DO, temperature, conductivity, and pH on an hourly basis. The continuous DO monitoring program functions under a quality assurance plan agreed on with the IEPA (http://drscw.org/wp/dissolved-oxygen/). Details on the site location are included in Table 10 and site locations for 2021 are included on Map 5.

Starting in October of 2021, the DRSCW will be extending the continuous DO monitoring to year round monitoring at all sites where the sonde is placed in a casing that is bridge-mounted. This includes two (2) sites on each of the three mainstem rivers: Salt Creek, East Branch DuPage River, and West Branch DuPage River.

Table 10. *2021 Continuous DO monitoring locations in the DRSCW watersheds in 2021.*

Site ID	Stream Name	River Mile	Latitude	Longitude	Location
WBAD	W. Br. DuPage River	29.9	41.9750	-88.1386	Arlington Drive
WBBR	W. Br. DuPage River	11.7	41.825268	-88.179456	Butterfield Road
WBWD	W. Br. DuPage River	11.1	41.82027	-88.17212	Downstream of former Warrenville Grove Dam
WBMG	W. Br. DuPage River	8.6	41.795928	-88.187263	Upstream of former McDowell Grove Dam
WBNPV	W. Br. DuPage River	3.0	41.74029	-88.126879	Downstream Bailey Road
EBAR	E. Br. DuPage River	23.0	41.935171	-88.05843	Army Trail Road
EBCB	E. Br. DuPage River	18.8	41.88510	-88.04110	Crescent Boulevard
EBHL	E. Br. DuPage River	14.0	41.82570	-88.05316	Hidden Lake Preserve
EBHR	E. Br. DuPage River	8.5	41.76800	-88.07160	Hobson Road
EBWL	E. Br. DuPage River	3.8	41.712315	-88.094842	Whalon Lake
SCBW	Salt Creek	29.4	42.01630	-88.00061	Downstream of Busse Woods Dam (MWRDGC)
SCOM	Salt Creek	23.0	41.941279	-87.983363	Upstream of former Oak Meadows Dam
SCBR	Salt Creek	16.1	41.864686	-87.95073	Butterfield Road
SCFW	Salt Creek	11.1	41.825493	-87.93158	Fullersburg Woods impoundment
SCWR	Salt Creek	8.1	41.82576	-87.90045	Wolf Road (MWRDGC)

Results

Results of the continuous DO monitoring conducted in the summer of 2021 is included in Figures 13-25.

Figure 13. *Dissolved Oxygen plot for Salt Creek site at Oak Meadows (SCOM)*

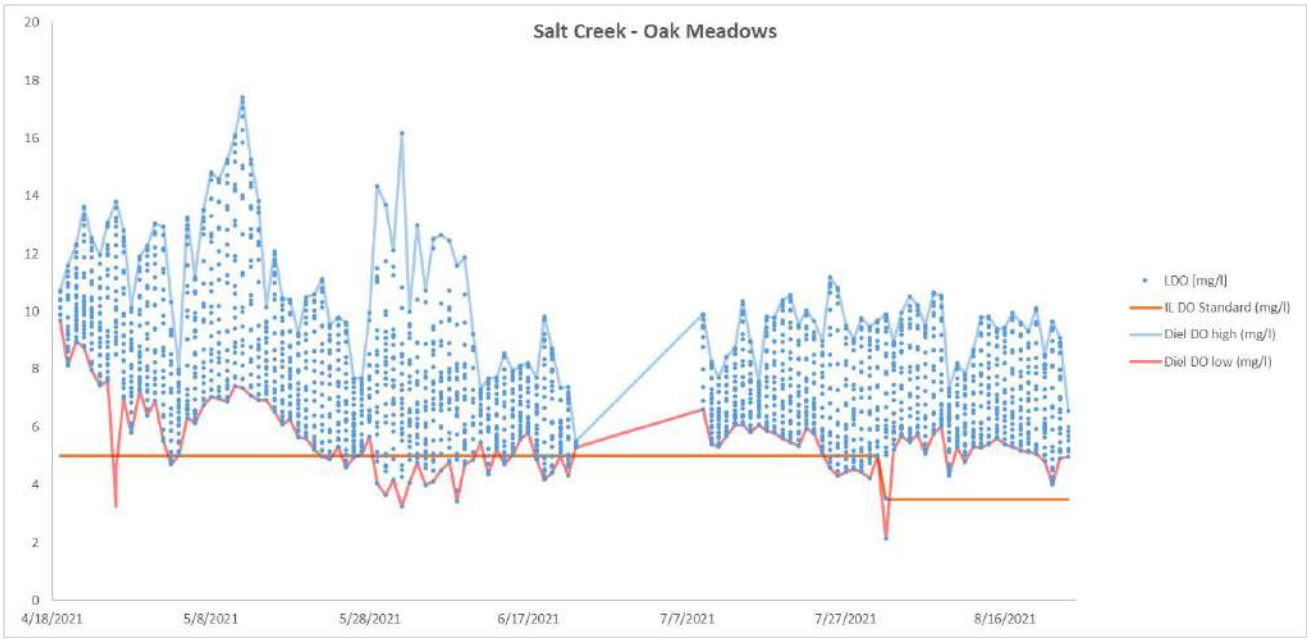


Figure 14. *Dissolved Oxygen plot for Salt Creek site at Butterfield Road (SCBR)*

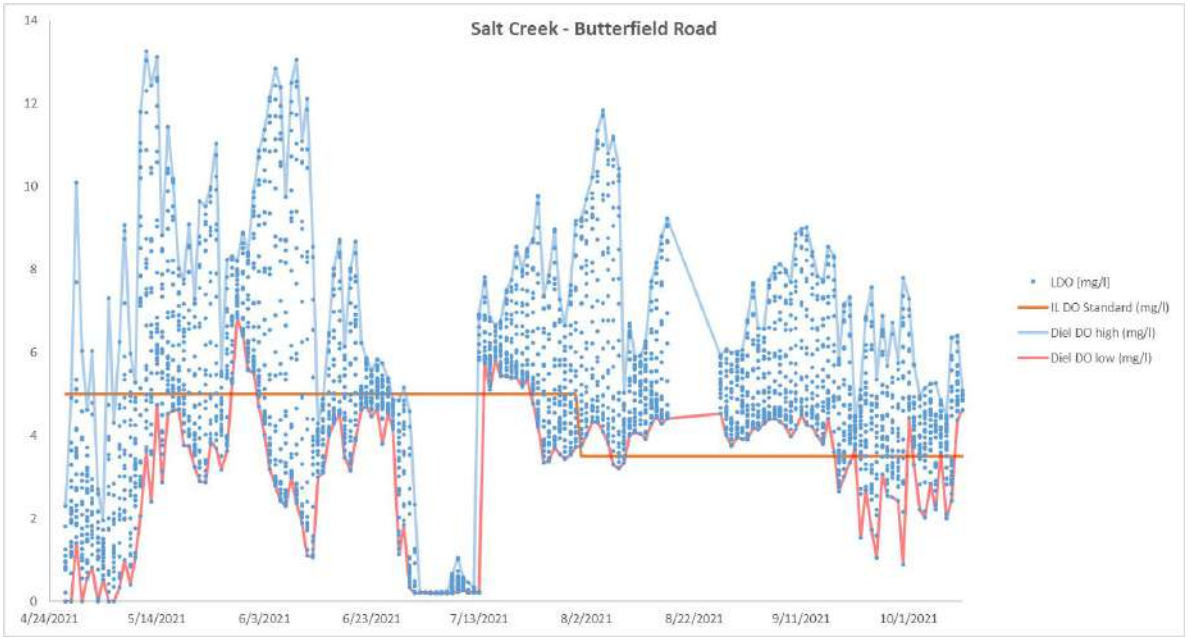


Figure 15. *Dissolved Oxygen plot for Salt Creek site at Fullersburg Woods (SCFW)*

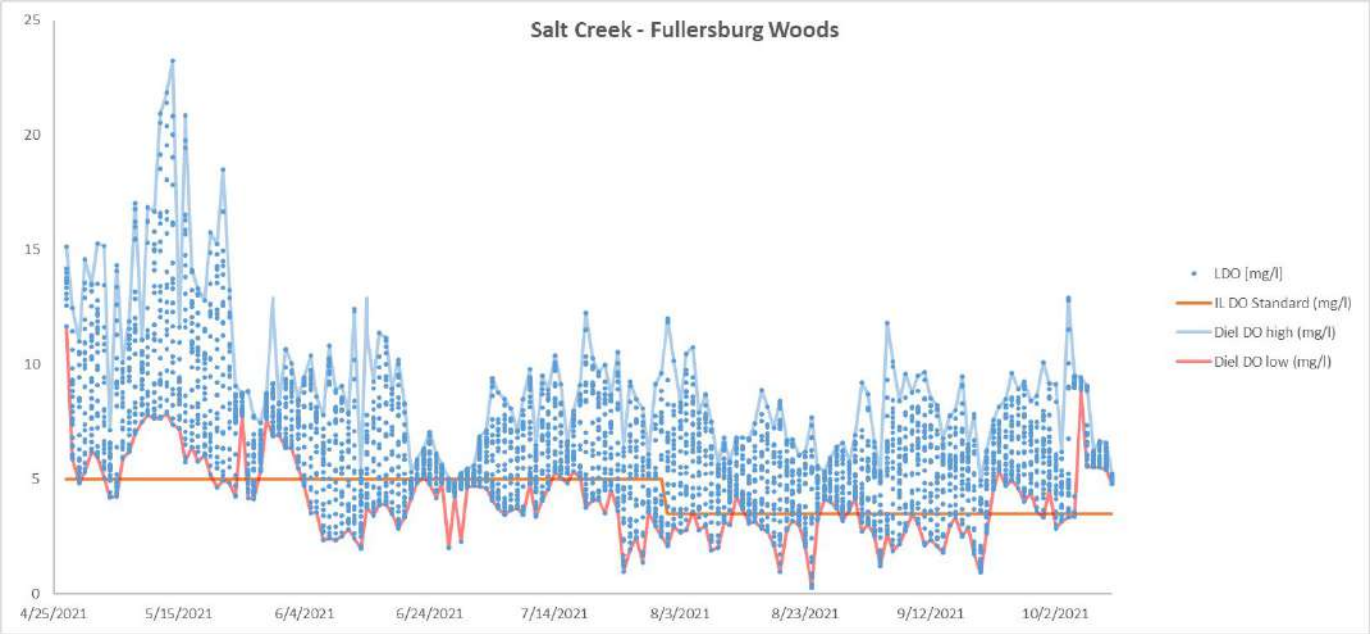


Figure 16*. Dissolved Oxygen plot for Salt Creek site at Wolf Road*

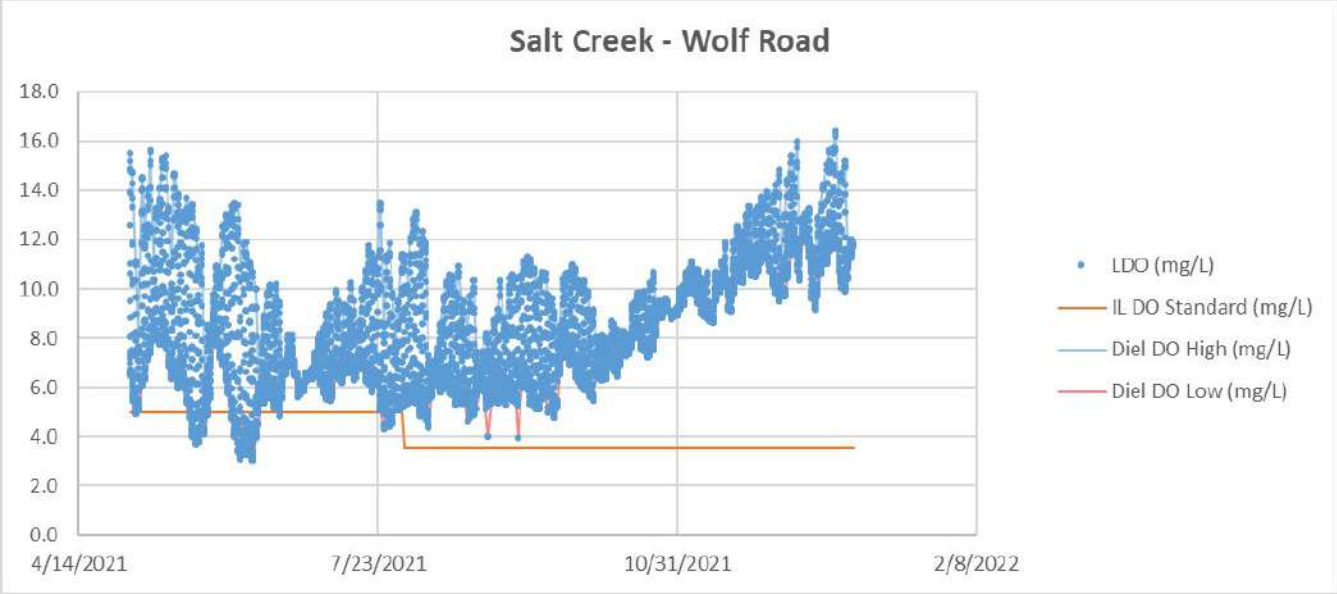


Figure 17. *Dissolved Oxygen plot for the East Branch DuPage River at Army Trail Road*

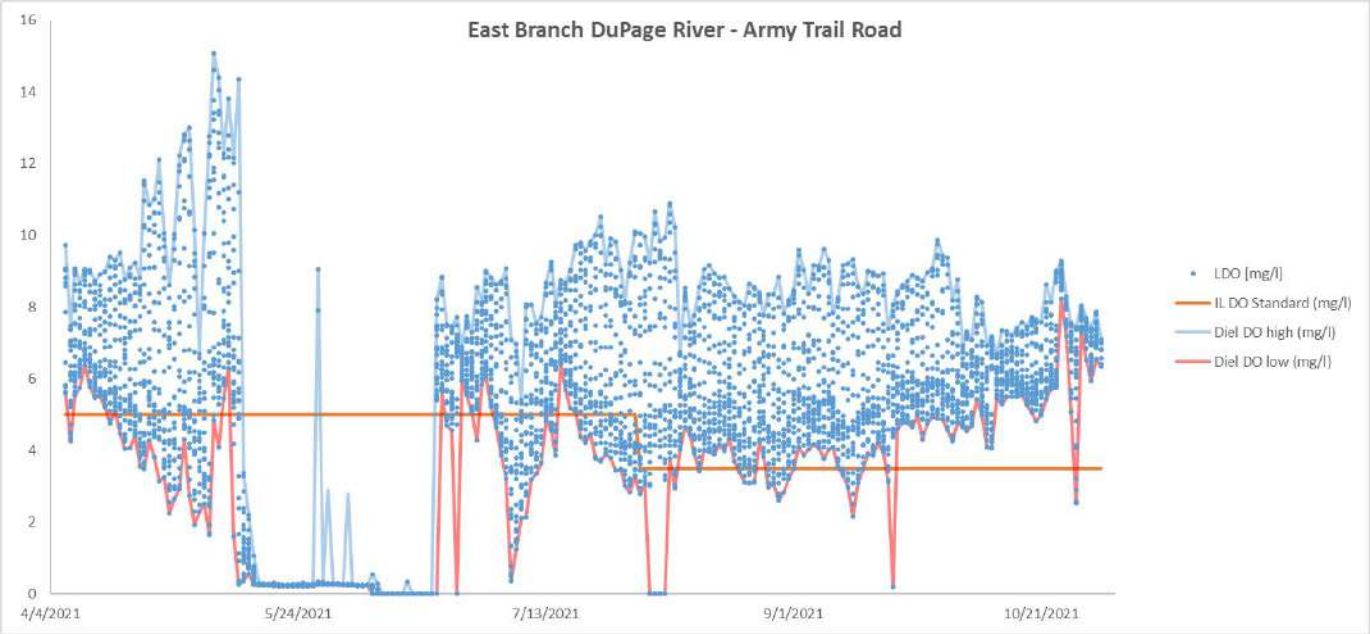


Figure 18. *Dissolved Oxygen plot for the East Branch DuPage River at Crescent Boulevard*

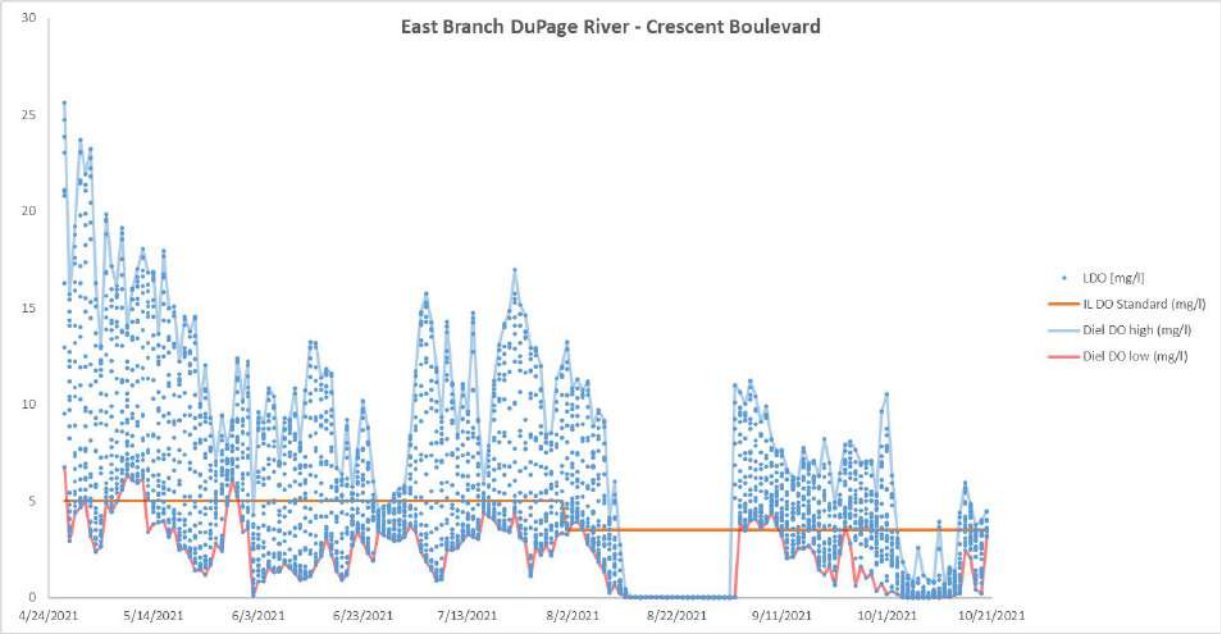


Figure 19. *Dissolved Oxygen plot for the East Branch DuPage River at Hobson Road*

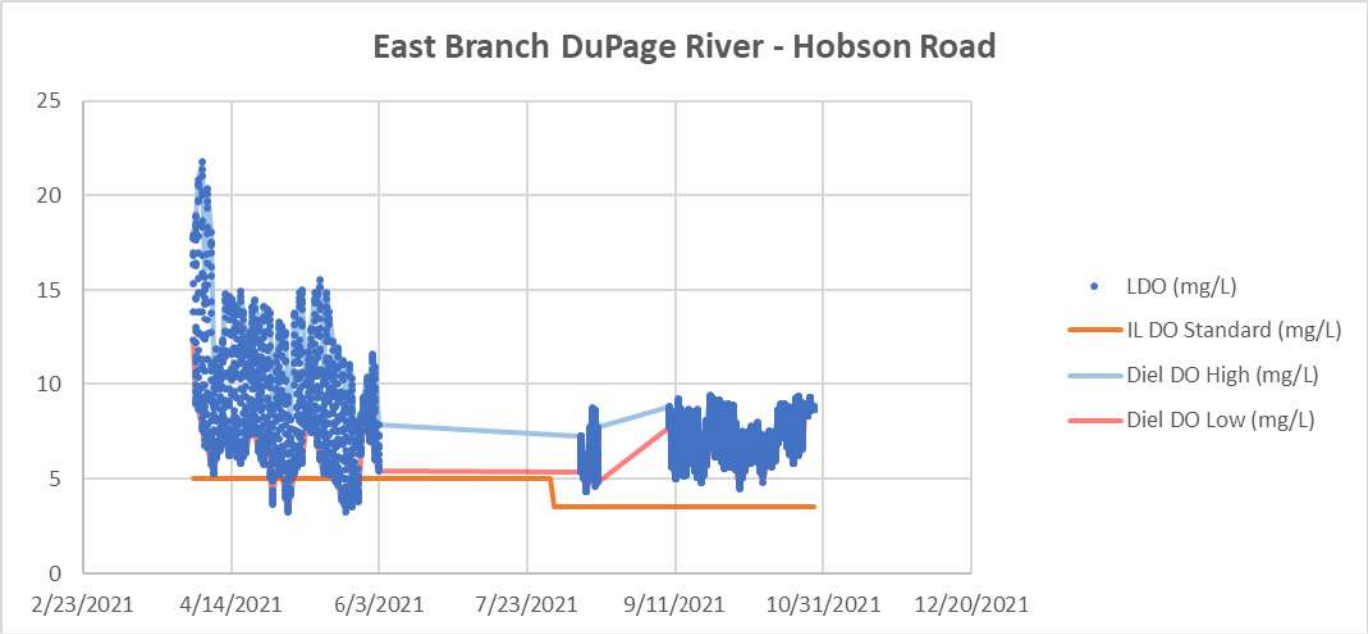


Figure 20. *Dissolved Oxygen plot for the East Branch DuPage River at Whalon Lake*

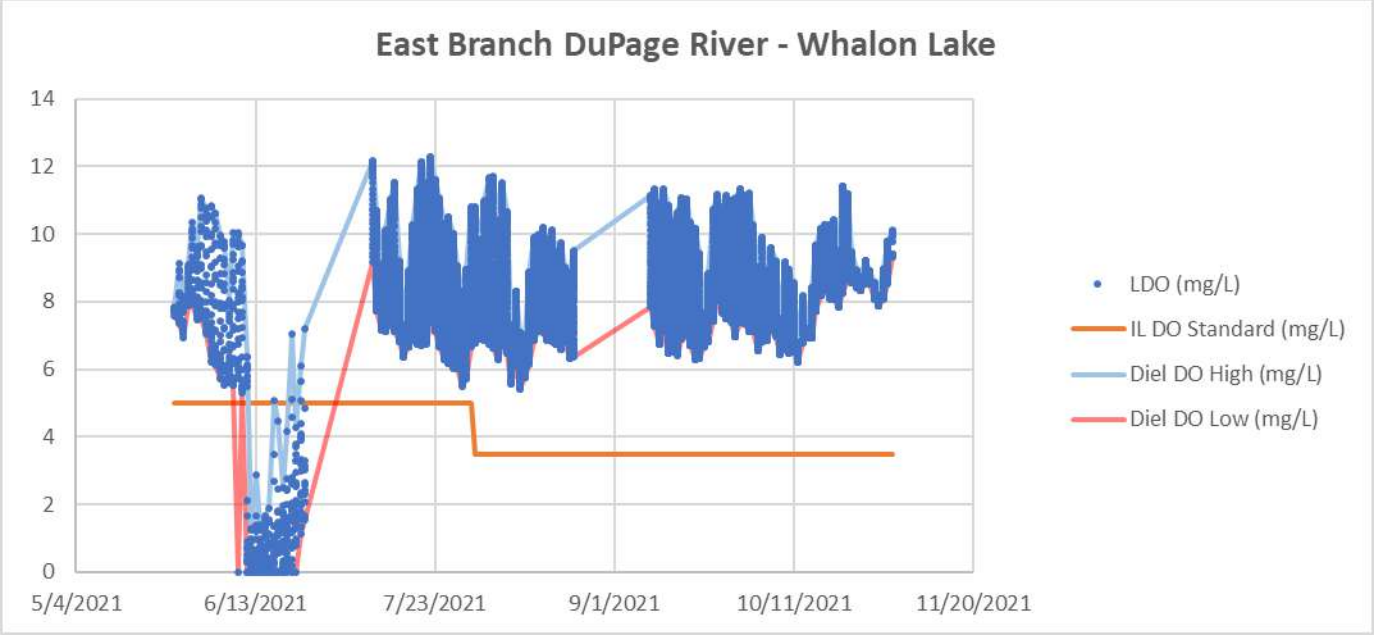


Figure 21. *Dissolved Oxygen plot for the West Branch DuPage River at Arlington Drive*

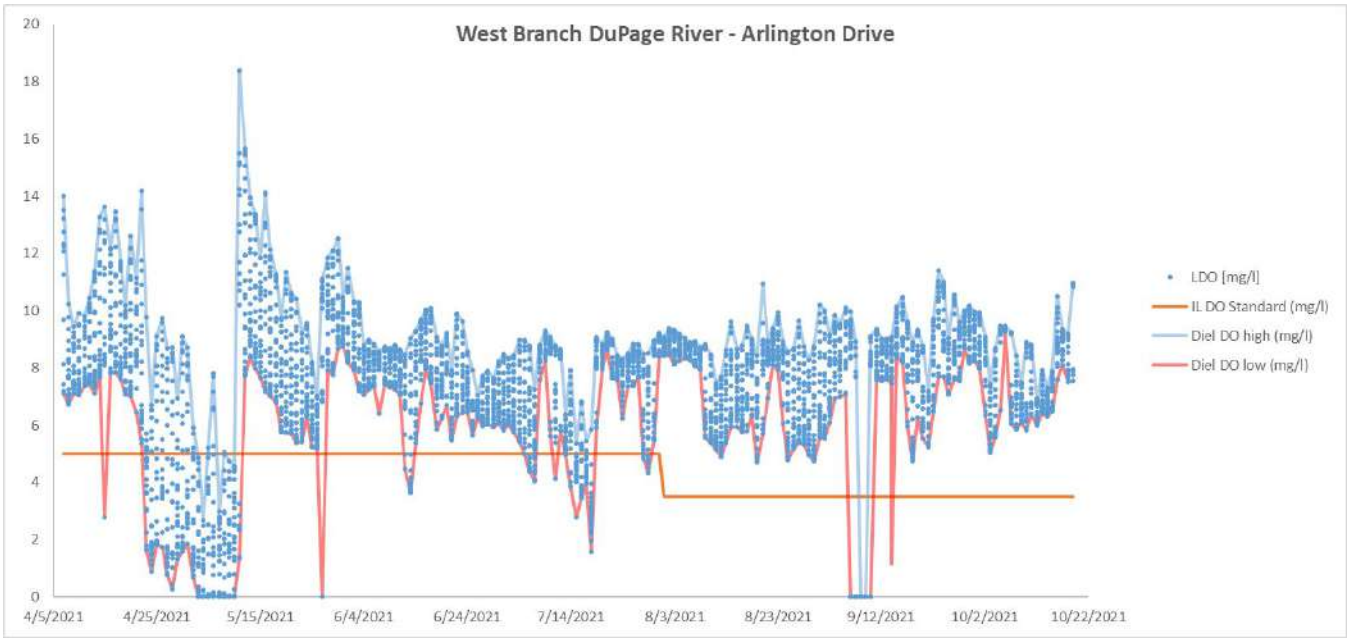


Figure 22*. Dissolved Oxygen plot for the West Branch DuPage River at Butterfield Road*

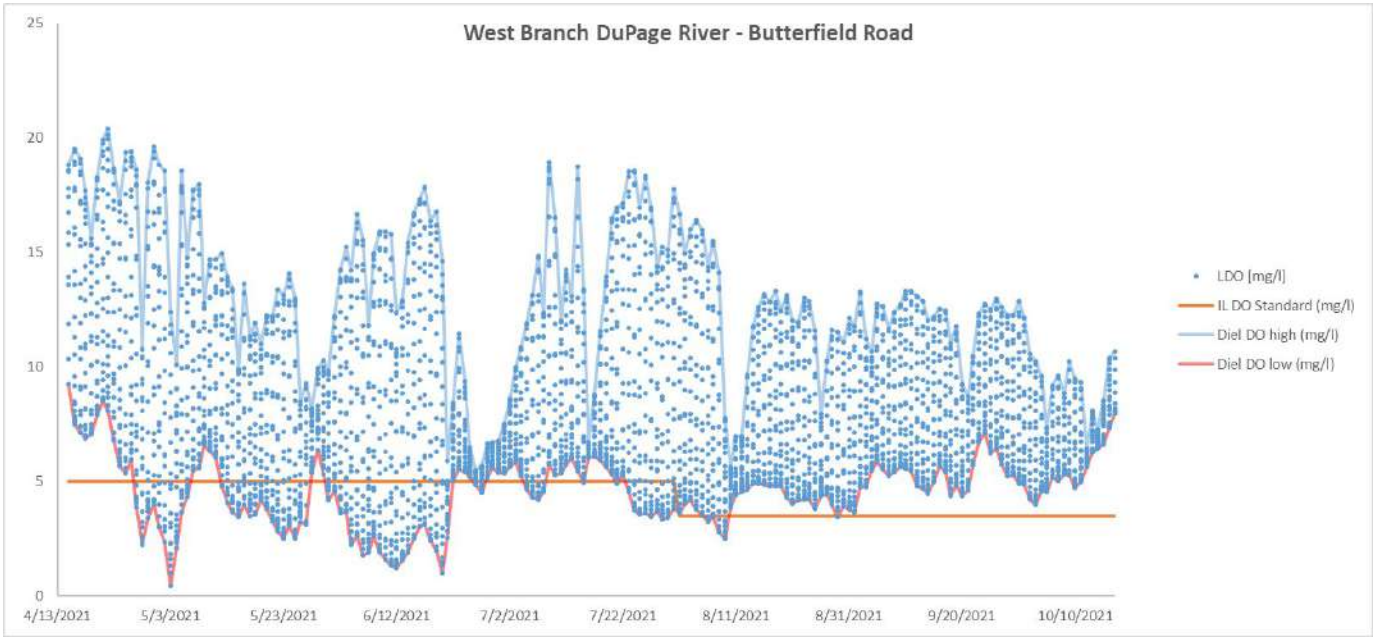


Figure 23. *Dissolved Oxygen plot for the West Branch DuPage River at Warrenville Grove*

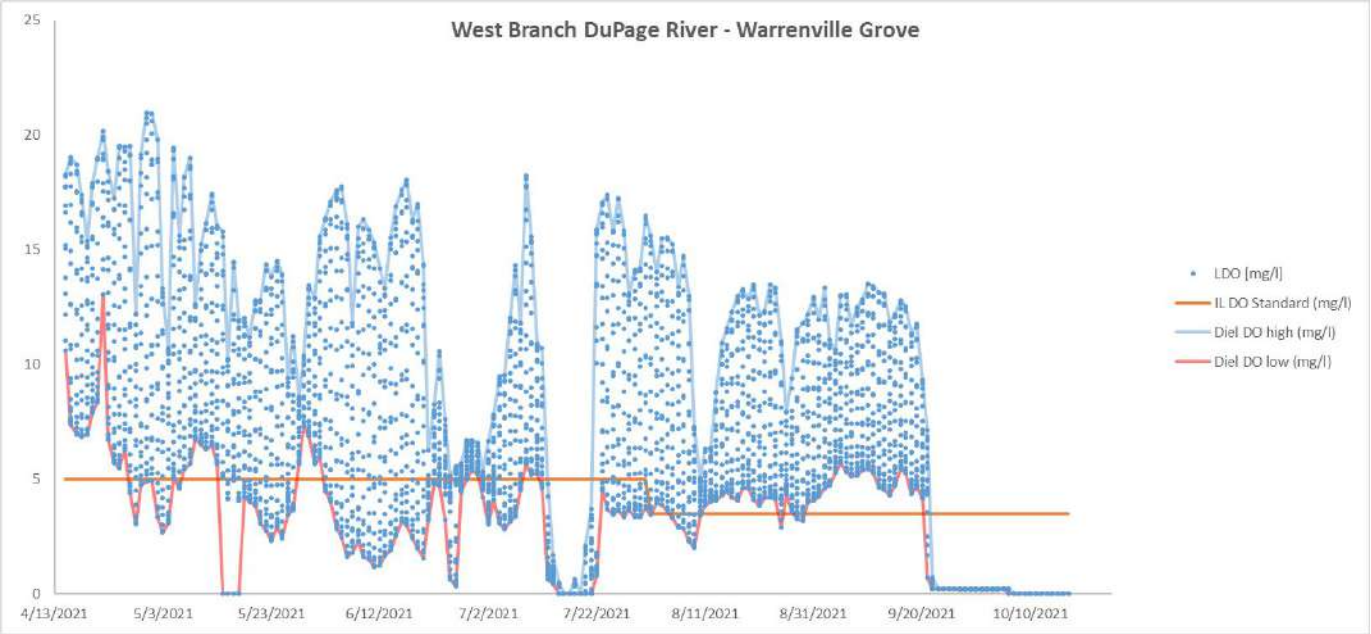


Figure 24. *Dissolved Oxygen plot for the West Branch DuPage River at McDowell Grove*

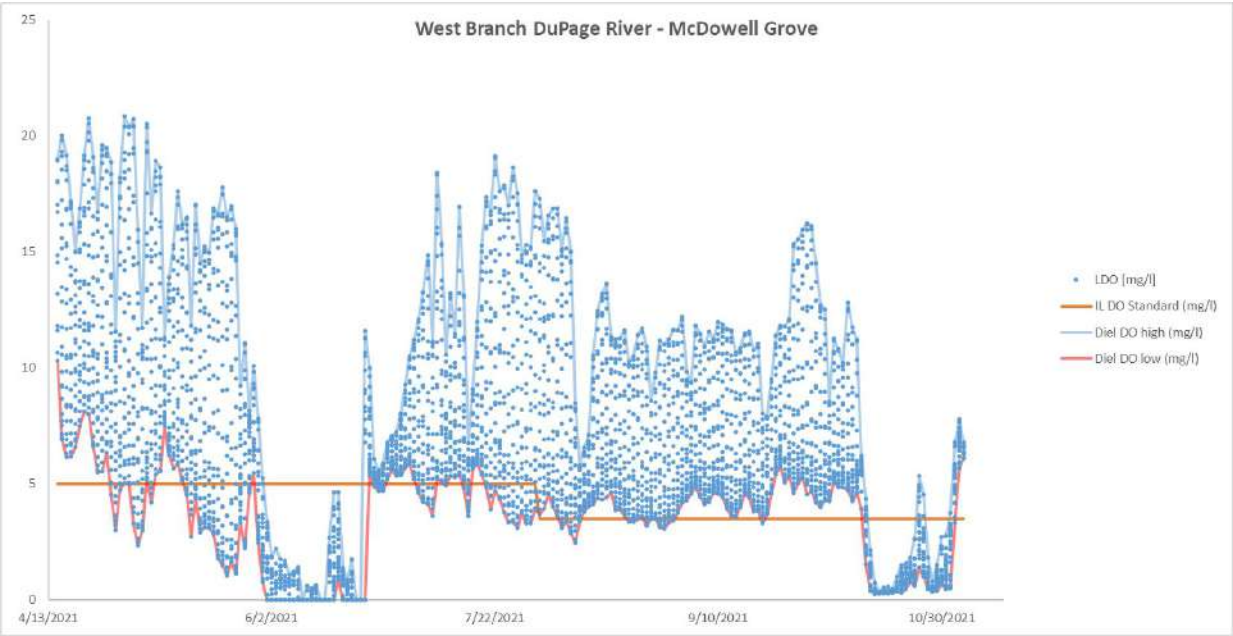
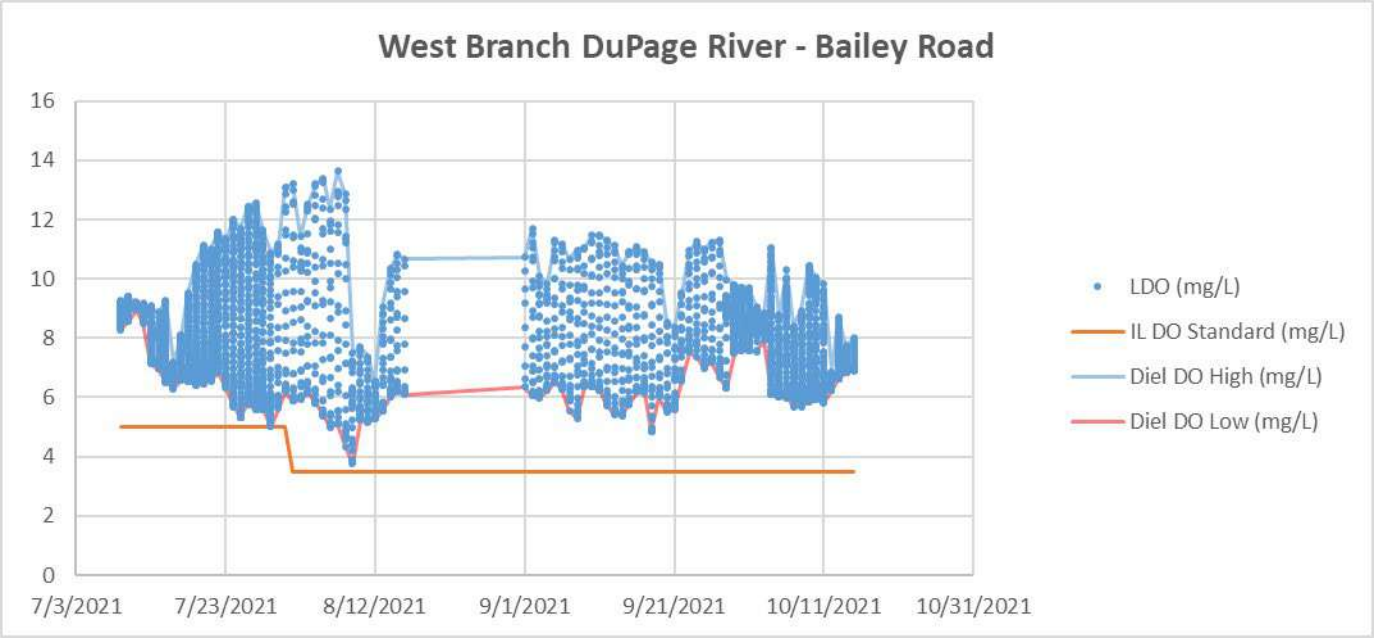


Figure 25. *Dissolved Oxygen plot for the West Branch DuPage River at Bailey Road*



EXPANDED DO MONITORING

In 2019, the DRSCW began their expanded DO Monitoring Program as a means to collect additional data to support the calibration/validation of the QUAL2Kw models and to support the development of the NIP. This program is coordinated with the Bioassessment Program (see Table 11 for schedule). Sites sampled in the Salt Creek watershed in 2021 are included in Table 12 and shown on Map 6.

Table 11. *Schedule for Expanded DO Monitoring*

Basin	Year of Expanded DO Monitoring
East Branch DuPage River	2019
West Branch DuPage River	2020
Salt Creek	2021

The sampling period for the Expanded DO Monitoring Project is late June to the end of August in dry and low flow conditions (no rain a minimum of 72 hours prior to sampling). Sondes are deployed in the channel thalweg for a minimum of 72 hours, where they collect data on dissolved oxygen, temperature, pH, conductivity, turbidity, and chlorophyll a at 15-minute intervals.

Composite water quality samples and sestonic algae sampling were collected once during the sonde deployment using the sampling technique described in the IEPA Standard Operating

Procedure for Stream Water Quality Sample Monitoring (DCN184). Samples were analyzed for the constituents listed in Table 13. One (1) benthic algae sample was collected at each site.

2021 Salt Creek Results

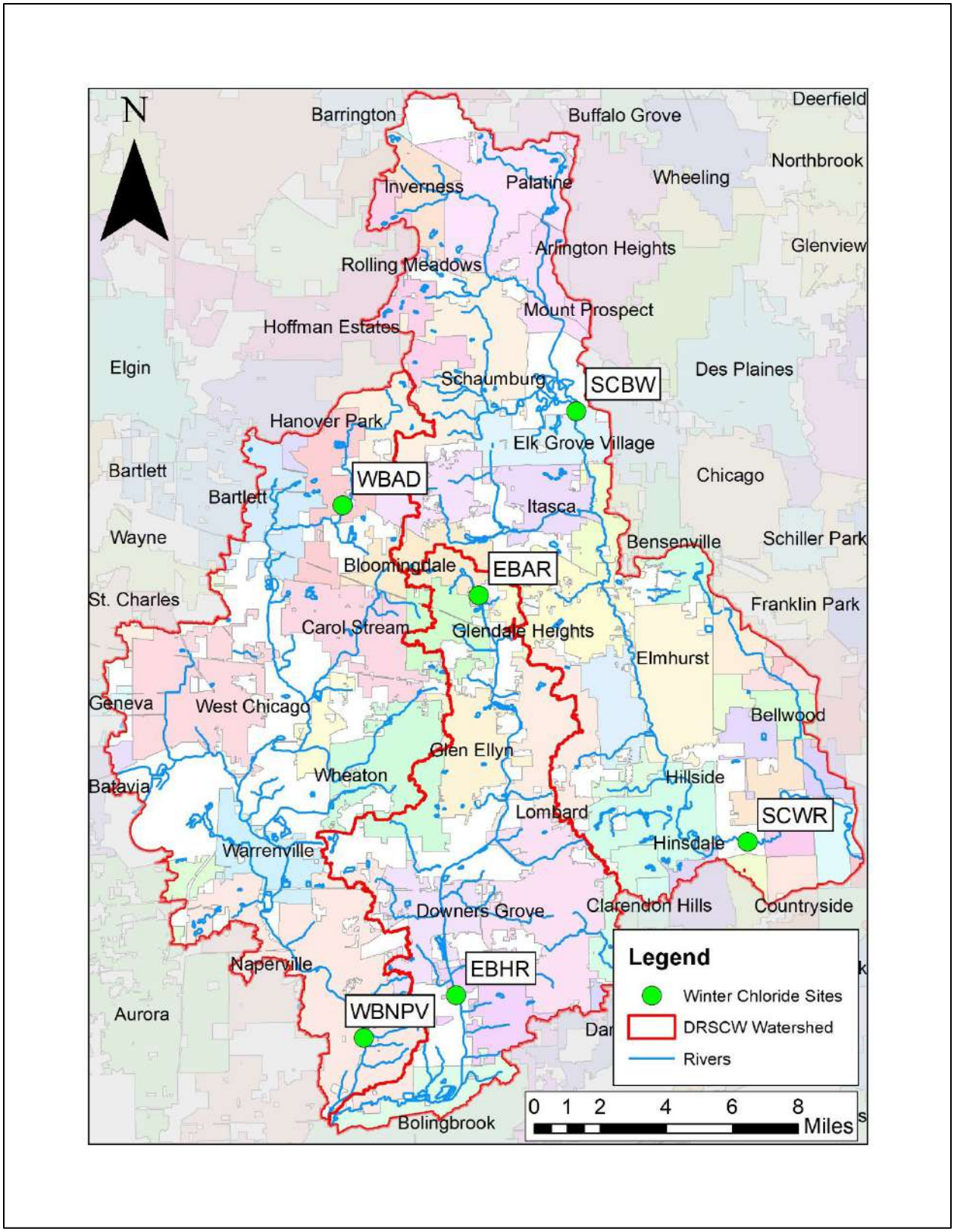
Results from the 2021 Expanded DO sampling in the Salt Creek watershed are not available at the time of the report. Sampling results will be included in the Nutrient Implementation Plan due on December 31, 2023.

Table 12. *Sites Monitored as Part of the 2021 Expanded DO Monitoring Program.*

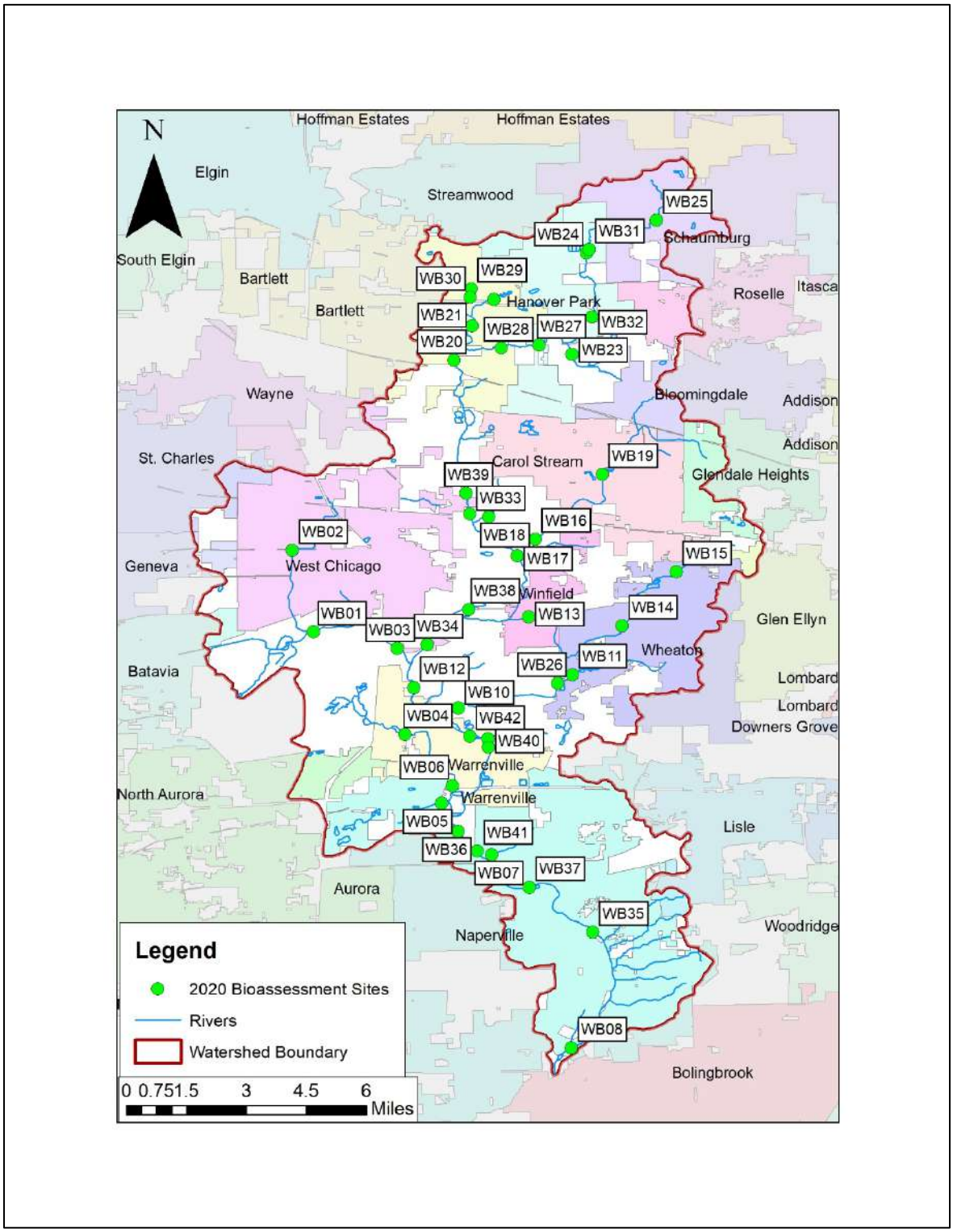
Site ID	Reasoning	Latitude	Longitude
SALT CREEK WATERSHED			
Salt Creek			
SC23	Downstream from Addison North WWTP	41.936938	-87.984234
SC29	Upstream of St Rt 171 (Upstream of confluence with Des Plaines River)	41.818297	-87.833708
SC35	Downstream from Wood Dale South WWTP	41.944091	-87.981079
SC37	Downstream of SCSC WWTP	41.885162	-87.959927
SC39	Downstream from Addison South WWTP	41.919985	-87.972745
SC40	Downstream from Wood Dale North WWTP	41.962745	-87.98439
SC41	Downstream from Itasca WWTP	41.970302	-87.988175
SC43	Downstream MWRDGC Egan WWTP	42.011973	-88.00092
SC44	Downstream of Busse Woods Dam (upstream conditions)	42.01602	-88.000508
SC46	Downstream of Roselle Devlin WWTP	41.966727	-88.077424
SC49	Upstream of Wolf Road	41.825756	-87.900036
SC51	Downstream Elmhurst WWTP	41.875767	-87.95799
Addison Creek			
SC24	Downstream of 3rd Street (Downstream of Bensenville WWTP)	41.946217	-87.926124
SC28	At Gardner Road (upstream of confluence with Salt Creek)	41.861162	-87.867743
Spring Brook			
SC16	Downstream from Roselle - JL Devlin WWTP	41.971781	-87.998034
SC21	Upstream of Roselle- JL Delvin WWTP (upstream conditions of Spring Brook)	41.97324	-88.079282

Table 13. *Parameters Included in Expanded DO Monitoring Program.*

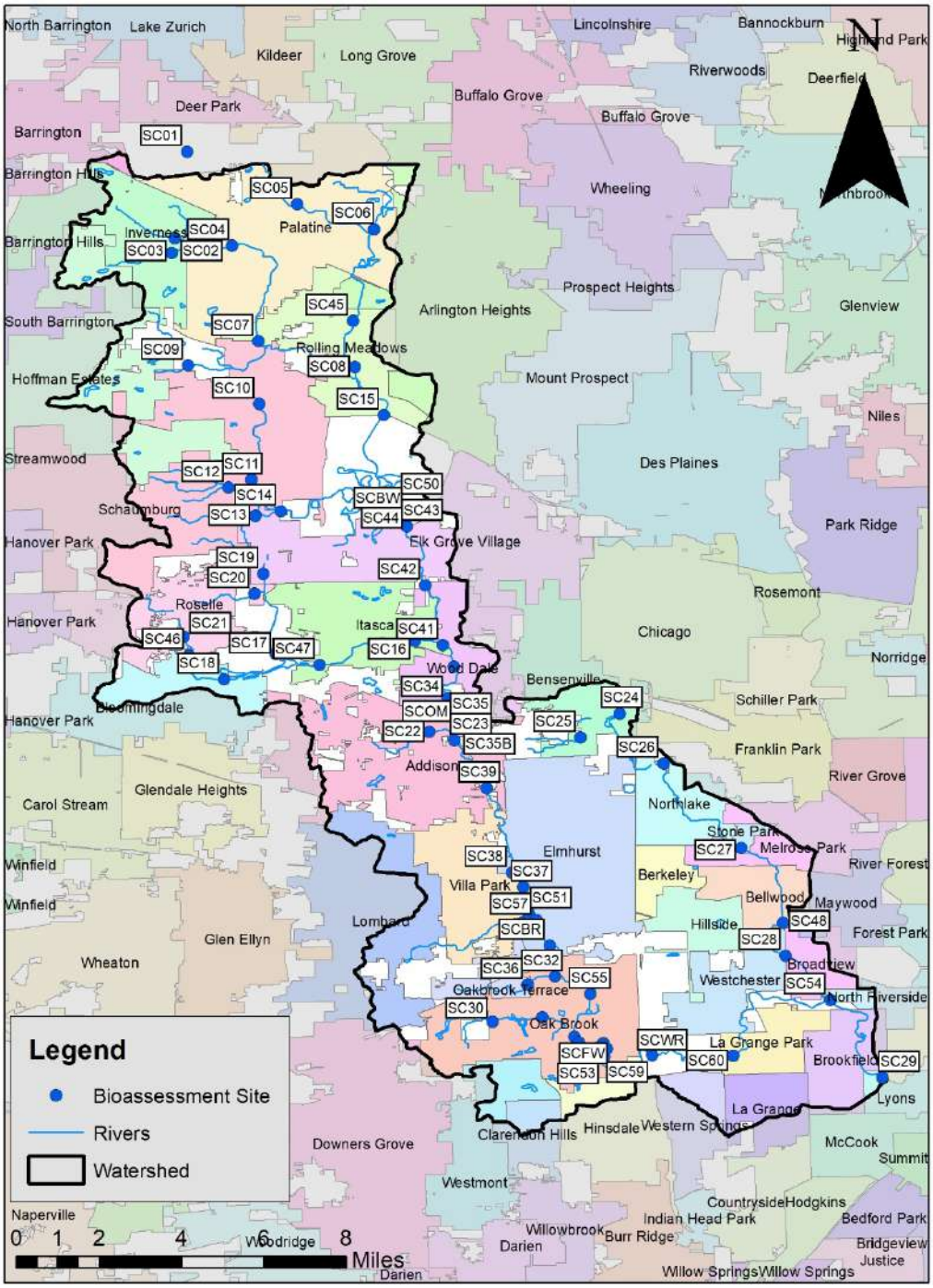
Parameter	Abbreviation	Frequency
5 Day Biological Oxygen Demand	BOD5	Once per sampling period
5 Day Carbonaceous Biological Oxygen Demand	CBOD5	
Total Suspended Solids	TSS	
Volatile Suspended Solids	VSS	
Total Dissolved Solids	TDS	
Chloride	Chloride	
Conductivity	Cond.	
Total Organic Carbon	TOC	
Total Dissolved Carbon	TDC	
Ammonia	NH3	
Nitrite	NO2	
Nitrate	NO3	
Total Kjeldahl Nitrogen	TKN	
Total Phosphorus	TP	
Orthophosphate	Ortho-P	
Total Dissolved Phosphorus	TDP	
Chlorophyll A (sestonic)	Chl A	
Chlorophyll A (benthic)	Chl A (benthic)	Once Per Sampling Period



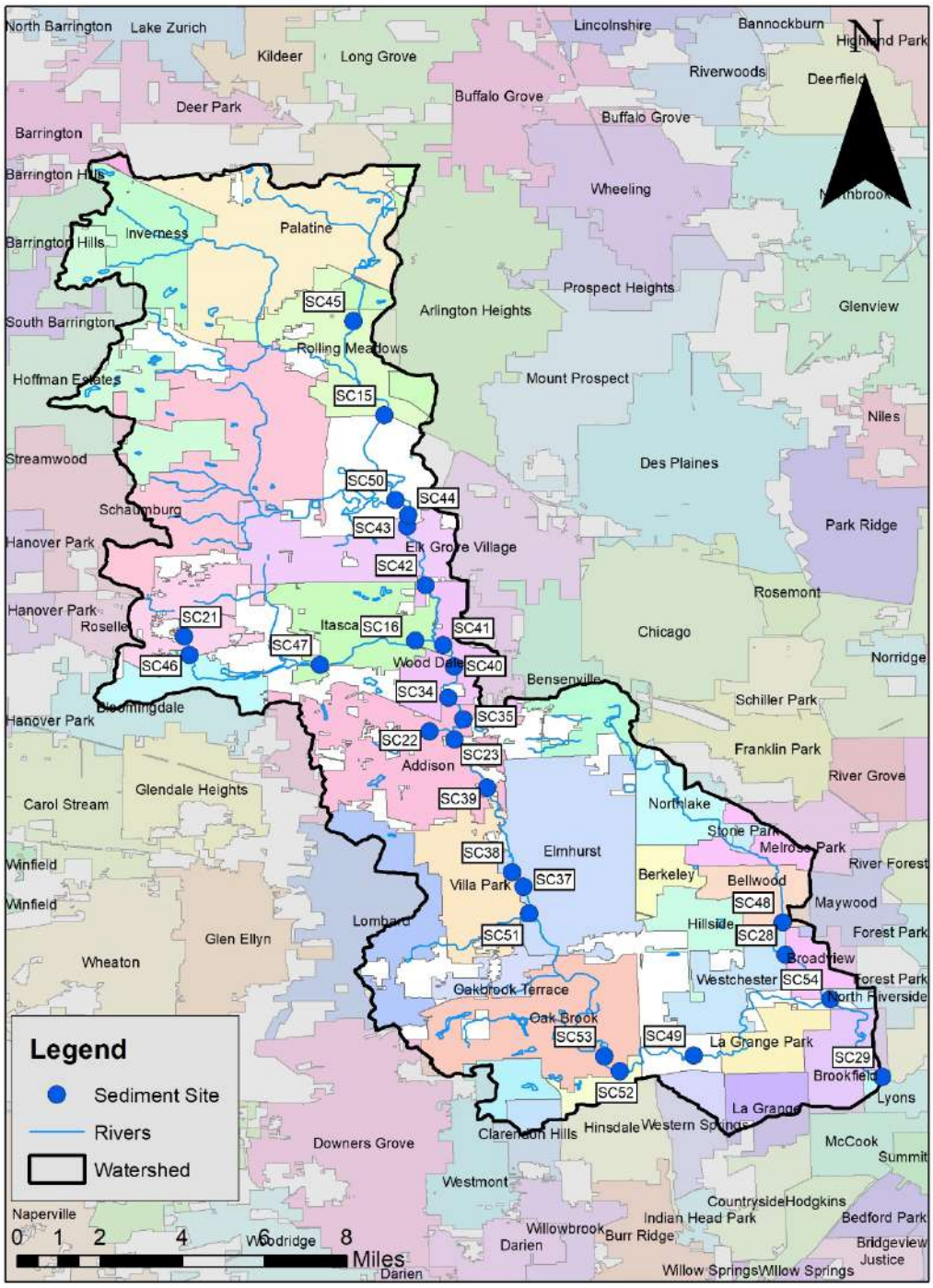
***Map 1**. Ambient chloride monitoring sites in the DRSCW watershed (2021)*



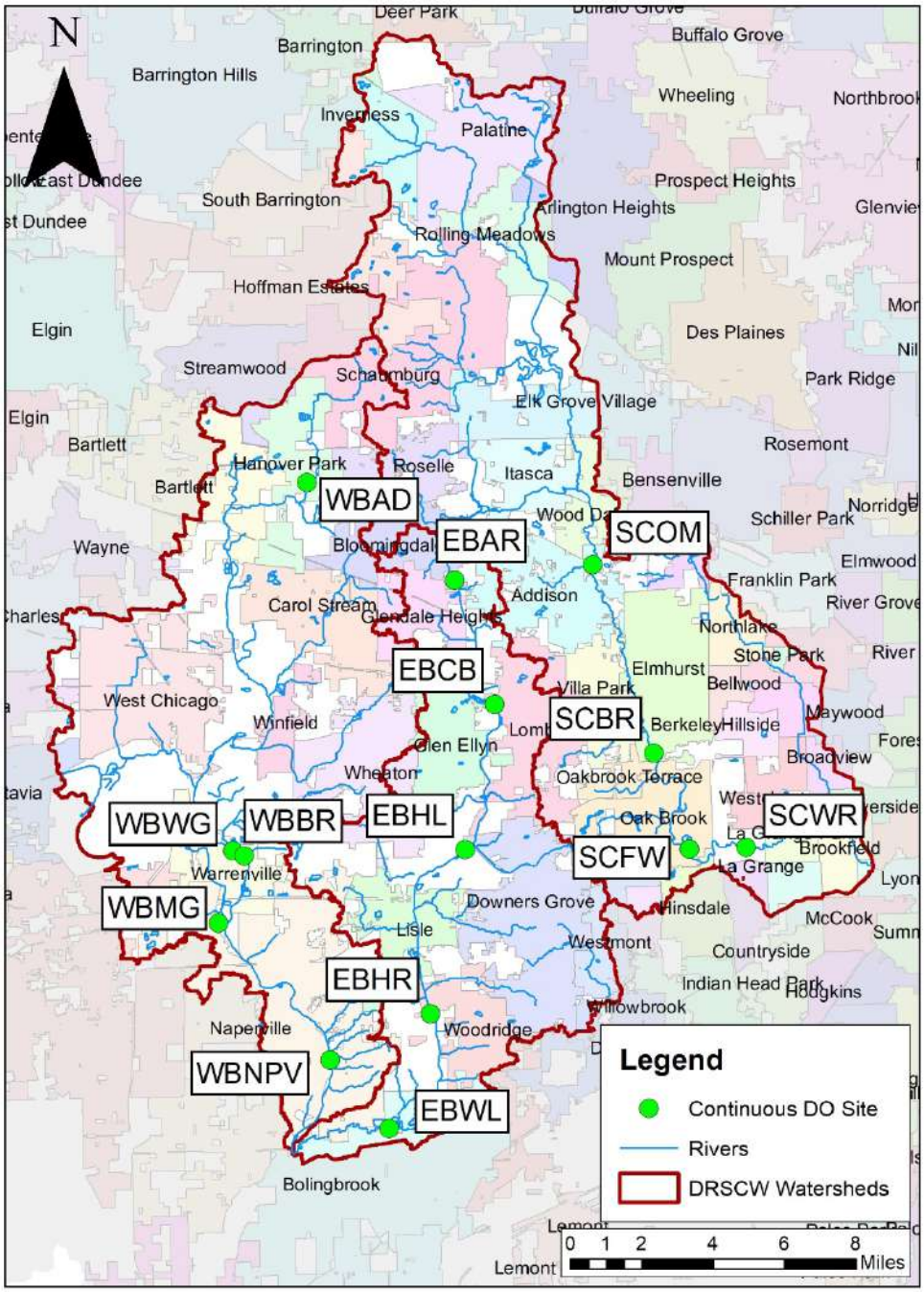
***Map 2**. Bioassessment sites in the West Branch DuPage River watershed (2020)*



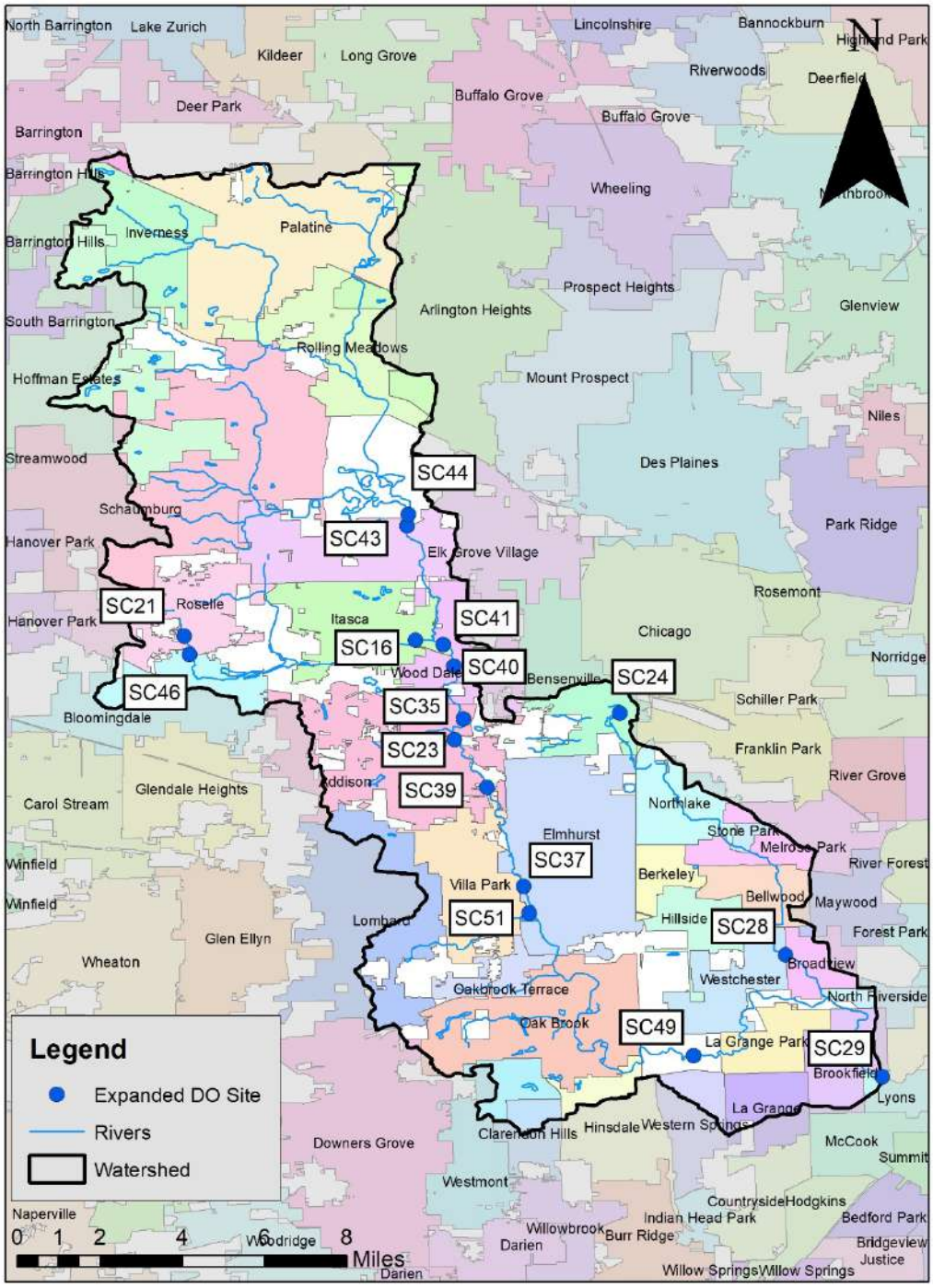
***Map 3**. Bioassessment sites in the Salt Creek watershed (2021)*



Map 4. *Sediment sampling sites in the Salt Creek watershed (2021)*



Map 5. *Continuous DO sampling sites in the DRSCW watershed (2021)*



Map 6. *Expanded DO sampling sites in the Salt Creek watershed (2021)*

Attachment 1

2021 Public Roads Deicing Workshop
Attendees List

2021 Public Roads Deicing Workshop Attendees (organized by County)

Date	Workshop	Agency	County
Oct. 5, 2021	Public Roads Deicing Workshop	Boone County Highway Department	Boone County
Oct. 12, 2021	Public Roads Deicing Workshop	City of Des Plaines	Cook County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Riverside	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	City of Palos Heights	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	City of Des Plaines	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	City of Prospect Heights	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Hoffman Estates	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Lemont	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	Village Of Midlothian	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Palatine	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Palatine	Cook County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Streamwood Public Works	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	City of Des Plaines	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	Palatine Township Road District	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	Public Works	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Alsip Public Works	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Hoffman Estates Public Works	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Lemont	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	Village Of Midlothian	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	village of willow springs	Cook County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Winnetka	Cook County
Oct. 12, 2021	Public Roads Deicing Workshop	City of Warrenville	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	DuPage County Division of Transportation	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	DuPage County DOT	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Illinois Toll Highway Authority	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Illinois Tollway	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Milton Township Highway Department	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Addison	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Carol Stream	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Glendale Heights	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Westmont Public Works	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Westmont Public Works	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Winfield Township Road District	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	Bloomingdale Township	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	City of Darien	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	City of Warrenville	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	City of West Chicago	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	Downers Grove Township Highway Dept	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	DuPage DOT	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	Illinois Tollway	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	Illinois Tollway	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Carol Stream Public Works	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Downers Grove	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Glen Ellyn	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	Wayne Township Road District	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	west chicago	DuPage County
Oct. 5, 2021	Public Roads Deicing Workshop	York Township Highway Department	DuPage County
Sept. 30, 2021	Public Roads Deicing Workshop	Addison Township Highway Departrment	DuPage County
Sept. 30, 2021	Public Roads Deicing Workshop	City of West Chicago	DuPage County
Sept. 30, 2021	Public Roads Deicing Workshop	DuPage County Stormwater Management	DuPage County
Sept. 30, 2021	Public Roads Deicing Workshop	Highway Department	DuPage County
Sept. 30, 2021	Public Roads Deicing Workshop	Illinois Toll Highway Authority	DuPage County
Sept. 30, 2021	Public Roads Deicing Workshop	Illinois Tollway	DuPage County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Glen Ellyn	DuPage County
Oct. 12, 2021	Public Roads Deicing Workshop	Kane County Division of Transportation	Kane County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of East Dundee	Kane County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of South Elgin	Kane County
Oct. 5, 2021	Public Roads Deicing Workshop	Illinois Tollway	Kane County
Oct. 5, 2021	Public Roads Deicing Workshop	Illinois Tollway	Kane County
Oct. 5, 2021	Public Roads Deicing Workshop	Kane County Government	Kane County
Sept. 30, 2021	Public Roads Deicing Workshop	City of Batavia	Kane County

2021 Public Roads Deicing Workshop Attendees (organized by County)

Date	Workshop	Agency	County
Sept. 30, 2021	Public Roads Deicing Workshop	City of Geneva	Kane County
Sept. 30, 2021	Public Roads Deicing Workshop	Dundee Township road district	Kane County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of North Aurora	Kane County
Sept. 30, 2021	Public Roads Deicing Workshop	Public works of Oswego	Kendall County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of oswego	Kendall County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Oswego	Kendall County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Oswego	Kendall County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Oswego	Kendall County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Oswego public works	Kendall County
Oct. 12, 2021	Public Roads Deicing Workshop	Ela Township Highway Department	Lake County
Oct. 12, 2021	Public Roads Deicing Workshop	Vernon Township Highway Department	Lake County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Gurnee Public Works	Lake County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Libertyville	Lake County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Lindenhurst	Lake County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Mundelein	Lake County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Vernon Hills	Lake County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Vernon Hills	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	Cuba Township Road District	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	Hainesville Public Works	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	Lake County Health Dept.	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Beach Park	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Fox Lake	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Hawthorn Woods	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Mundelein	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	village of Round lake Beach Illinois	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	village of vernon hills	Lake County
Oct. 5, 2021	Public Roads Deicing Workshop	Village Of Vernon Hills	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Antioch Township Highway Department	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Antioch Township Highway Department	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Avon Township Highway Department	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Libertyville Township	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Vernon Hills High School District 128	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Barrington	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Lake Zurich	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Midlothian	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Mundelein	Lake County
Sept. 30, 2021	Public Roads Deicing Workshop	Illinois Tollway	Lee County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Cary	McHenry County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Huntley	McHenry County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Johnsburg	McHenry County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Port Barrington	McHenry County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Cary IL	McHenry County
Oct. 5, 2021	Public Roads Deicing Workshop	Village Of Spring Grove	McHenry County
Sept. 30, 2021	Public Roads Deicing Workshop	Algonquin Township Road District	McHenry County
Sept. 30, 2021	Public Roads Deicing Workshop	McHenry County Division of Transportation	McHenry County
Sept. 30, 2021	Public Roads Deicing Workshop	Marengo Community High School District 154	McHenry County
Oct. 5, 2021	Public Roads Deicing Workshop	Illinois Tollway	Various
Oct. 5, 2021	Public Roads Deicing Workshop	Illinois Tollway Authority	Various
Sept. 30, 2021	Public Roads Deicing Workshop	Illinois State Toll Highway Authority (ISTHA)	Various
Oct. 12, 2021	Public Roads Deicing Workshop	City of Joliet	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Joliet Junior College	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Channahon	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Channahon	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Mokena	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Mokena	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Mokena	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Mokena Streets Dept	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Plainfield	Will County
Oct. 12, 2021	Public Roads Deicing Workshop	Village of Shorewood	Will County
Oct. 5, 2021	Public Roads Deicing Workshop	Village of Bolingbrook	Will County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Frankfort Public Works	Will County

2021 Public Roads Deicing Workshop Attendees (organized by County)

Date	Workshop	Agency	County
Sept. 30, 2021	Public Roads Deicing Workshop	Village of Romeoville - Public Works	Will County
Oct. 5, 2021	Public Roads Deicing Workshop	Winnebago County Highway Department	Winnebago County
Sept. 30, 2021	Public Roads Deicing Workshop	WINNEBAGO COUNTY HIGHWAT DEPT	Winnebago County
Sept. 30, 2021	Public Roads Deicing Workshop	Winnebago County Highway Department	Winnebago County
Sept. 30, 2021	Public Roads Deicing Workshop	Winnebago County Highway Department	Winnebago County
Sept. 30, 2021	Public Roads Deicing Workshop	Winnebago County Highway Department	Winnebago County

Attachment 2

2021 Parking Lots & Sidewalks
Deicing Workshop Attendees List

2021 Parking Lot Sidewalks Deicing Workshop Attendees (organized by County)

Date	Workshop	Agency	County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	City of Palos Heights	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	MWRD	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	MWRD	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	MWRD	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	MWRD	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	MWRDGC - Kirie WRP	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Northbrook School District 28	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	School Dist. 225	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Streamwood Park District	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Village of Lemont	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Village of Riverside	Cook County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Township District 214	Cook County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Village of Arlington Heights	Cook County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Village of Hoffman Estates	Cook County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Village of Hoffman Estates Public Works	Cook County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Village of Lemont	Cook County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	DuPage County	DuPage County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Westmont Public Works	DuPage County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Westmont Public Works	DuPage County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	wheaton sanitary district	DuPage County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	DuPage County Public Works	DuPage County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	DuPage County Stormwater	DuPage County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Village of Carol Stream	DuPage County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Village of Glen Ellyn	DuPage County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	School District U-46	Kane County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	BECO Management, Inc.	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	CHSD128 Libertyville High School	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Deerfield Dist 109	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Deerfield School District 109	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	JMR Landscaping	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Mundelein Park and Recreation District	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	North shore school district 112	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	North Shore School District 112	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Village of Hawthorn Woods	Lake County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Village of Round Lake Beach	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Deerfield School District 109	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	North Shore District 112	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Northshore School District 112	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Northshore School District 112	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Vernon Hills School District 128	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Woodland CCSD 50	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Woodland CCSD#50	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Woodland CCSD50	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Woodland Dist.50	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Woodland District 50	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Woodland School District 50	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Woodland School District 50	Lake County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Crystal Lake Park District	McHenry
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Algonquin Township Road District	McHenry County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Crystal Lake Park District	McHenry County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Huntley Community School District 158	McHenry County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	McHenry Community High School District 156	McHenry County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Joliet Junior College	Will County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Village of New Lenox	Will County
Oct. 7, 2021	Parking Lot & Sidewalks Deicing Workshop	Village of Romeoville	Will County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Joliet Junior College	Will County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Joliet Junior College	Will County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Village of Frankfort	Will County
Sept. 28, 20021	Parking Lot & Sidewalks Deicing Workshop	Village of Shorewood	Will County