



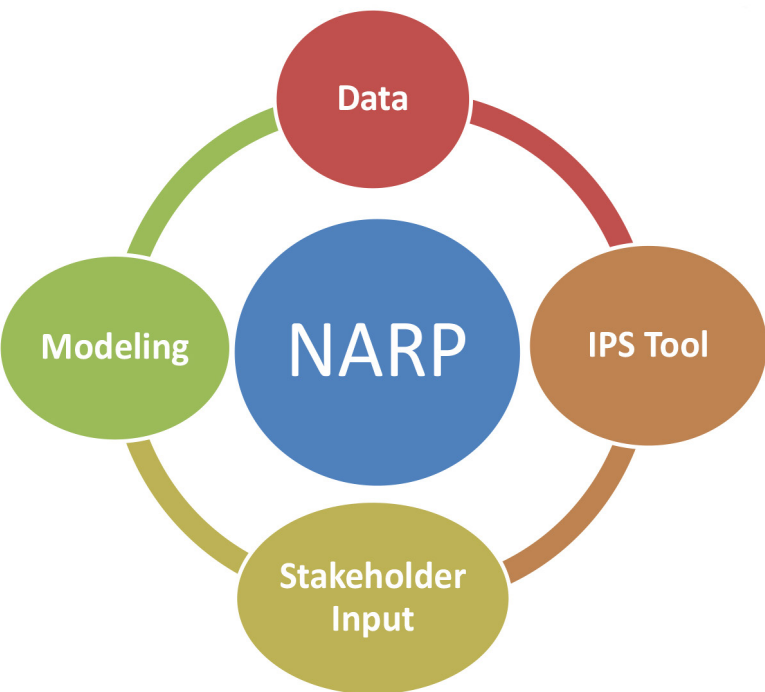
Des Plaines River Watershed Workgroup May 2021 Newsletter



DES PLAINES RIVER
**WATERSHED
WORKGROUP**

Nutrient Assessment and Reduction Plan (NARP)

The DRWW recently entered an agreement with Geosyntec for the development of a NARP. Geosyntec will develop the NARP with assistance from Kieser & Associates and the Conservation Fund. The DRWW will collaborate with Geosyntec throughout the NARP development. The NARP is required due to special conditions language in the National Pollutant Discharge Elimination System (NPDES) permits of multiple DRWW members. This requirement is intended to address phosphorus related impairments in waters receiving discharge from publicly owned treatment works (POTWs) that discharge more than one million gallons per day and must be completed by December 31, 2023. The objectives of the NARP are to establish watershed-specific water quality targets, determine measures needed to eliminate phosphorus related impairments, and identify mechanisms to facilitate cost-effective implementation of the NARP. This will be accomplished in four separate phases:



Phase 1: Conduct Data Analysis

During this phase, Geosyntec will analyze water quality that has been collected in the watershed from 2008-2023. This analysis will provide the workgroup with a better understanding of the potential relationships between phosphorus, algae, and dissolved oxygen within the watershed and inform subsequent phases of the NARP.

Phase 2: Develop Modeling Tools

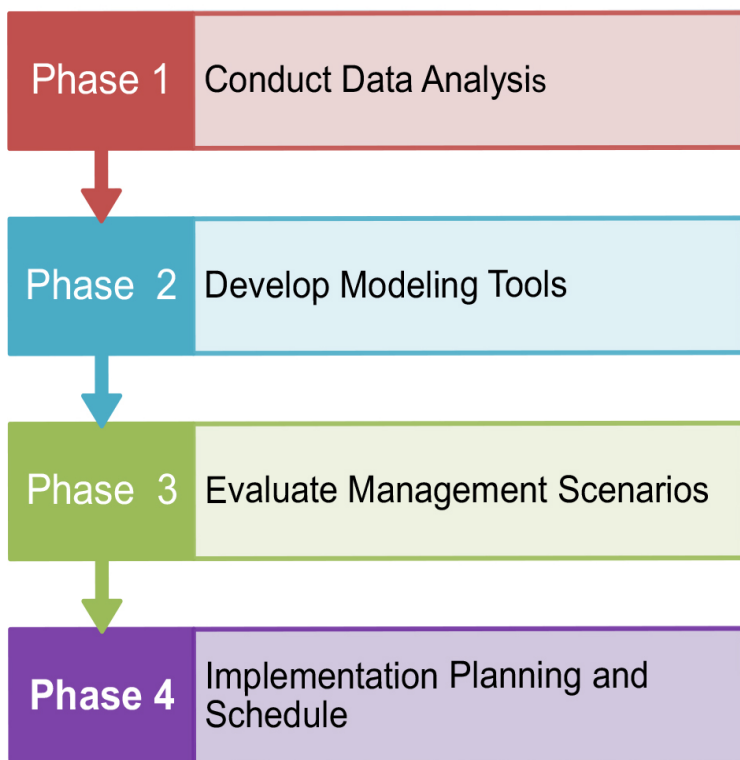
Modeling tools will be utilized to identify linkages between individual phosphorus inputs, such as POTWs and non-point source discharges, and the related impairments. Two watershed models will be utilized to accomplish this task. First a Soil and Water Assessment Tool (SWAT) watershed model will be developed to predict discharge rates and pollutant inputs from tributaries to the Des Plaines River Mainstem. The outputs from the SWAT model will be used in a QUAL2kw model. The QUAL2kw will be utilized to model the hydrodynamics and water quality of the impaired stream reaches this NARP will address.

Phase 3: Evaluate Management Scenarios

The modeling tools created in phase 2 will be used to assess multiple watershed management strategies to identify the best ways to address phosphorus related impairments within the watershed. This information will be used along with the DRWW's Integrate Prioritization System model, the Lake County Green Infrastructure Model, and the Des Plaines River Watershed-Based Plan to create a list of recommended actions for the workgroup.

Phase 4: Implementation Planning and Schedule

An implementation plan and schedule will be created for the list of recommended actions created in phase 3. This will include analysis of the potential for funding mechanisms such as grants and a water quality trading program. Additionally, a long-term adaptive management strategy will be created. This will provide guidance for the workgroup to document NARP implementation and communicate progress towards eliminating phosphorus related impairments to the Illinois EPA.



Annual Monitoring Updates

DRWW 2021 Monitoring Strategy

Water Column Sampling

- » 73 Monitoring locations x5 collections, x4 collections for nutrients

Sediment Sampling (6-year rotation)

- » Tier 1 & 2 Sites - focusing on metals and organic chemical analysis

Bioassessment Monitoring Program (6-year rotation)

- » Biannual collection on 14 core sites & 6 Des Plaines River main stem

Continuous Monitoring & Chlorophyll *a* Sampling

- » Data sondes at 3 sites (13-6, 13-1, 16-4) for year round collection of dissolved oxygen (DO), water temperature, turbidity, pH, chlorophyll *a* and conductivity

- » 14 core sites: annual collection of benthic chlorophyll *a*, and 4 summer samples of sestonic chlorophyll

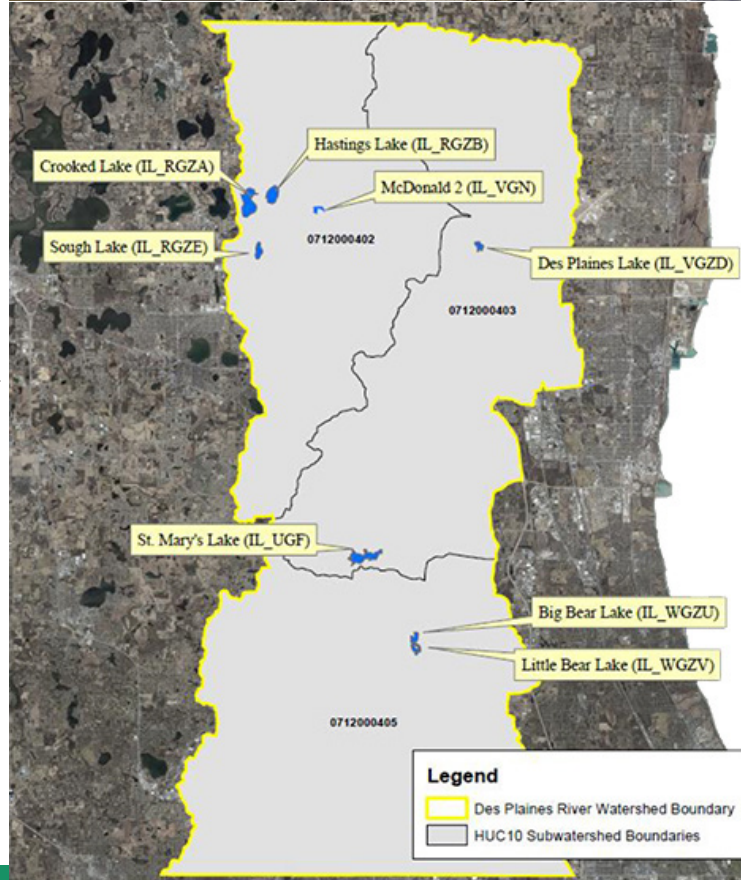
2020 Annual Monitoring Report

The DRWW 2020 Annual Monitoring Report was submitted to the Illinois Environmental Protection Agency (Illinois EPA) on March 31, 2021 to meet the DRWW Member Agencies Publicly Owned Treatment Works (POTW) requirement for the NPDES Permit Special Condition related to monitoring of receiving streams and to meet the monitoring component for its Member Agencies Municipal Separate Storm Sewer Systems (MS4) Permits. Midwest Biodiversity Institute (MBI), Lake County Health Department (LCHD) and North Shore Water Reclamation District (NSWRD) have started the 2021 water quality monitoring efforts.

Removal of Carp to Reduce Nutrient Enrichment

Carp is an invasive fish that was originally introduced to the Midwest in the 1800's as a food fish. They are highly tolerant of poor water quality and prefer to spawn in shallow weedy areas in large groups. The spawning ritual involves thrashing in shallow water which resuspends sediment, contributing to turbidity problems. Carp feed over soft bottom substrate where they suck up silt and filter out crustaceans, insect larvae and other desirable food items. Carp are very active when feeding and can be observed around shallow areas where they uproot plants which increases turbidity and nutrient concentrations. This also negatively impacts other lake biota. Fish eggs from other species that spawn in the shallow waters may be physically disturbed, consumed, or covered by sediments from carp activity reducing the chances of survival. Reduced water clarity due to carp activity also negatively influences aquatic plant growth, as photosynthesis is truncated or ceases in low-light conditions. This, in turn, impacts habitat for small zooplankton, fish fry, and other aquatic organisms. Low light conditions also impact sight feeding fish such as bass and other gamefish, which are important recreational species in Illinois.

The LCHD, Lake County Forest Preserve District, and Lake County Stormwater Management Commission began the Removal of Carp to Reduce Nutrient Enrichment project in October of 2020. Funding for this project was provided, in part, by the Illinois Environmental Protection Agency through Section 319 of the Clean Water Act. This project seeks to reduce the water quality impacts of carp and increase native aquatic plant density at eight impaired lakes in the Des Plaines River Watershed by using electrofishing methods to selectively remove carp. The LCHD will perform carp removal at Slough Lake, Crooked Lake, Hastings Lake, McDonald 2 Lake, Des Plaines Lake, St. Mary's Lake, Big Bear Lake, and Little Bear Lake in the spring and fall for at least two years. As of 04/20/21 carp removal has been performed at seven of the eight project lakes and a total of 2,172 carp have been removed weighing approximately 10,166 pounds. The LCHD has already observed improvements at Slough and McDonalds 2 Lakes as a result of carp removal.



Hydrilla Rapid Response Plan Activated

Hydrilla, which is an extremely invasive aquatic plant, was identified in a detention basin in Lake County in 2019. The introduction of hydrilla to this basin appears to be from an aquarium release. The detention basin is hydraulically connected to the Des Plaines River via a pipe structure. The Hydrilla Early Detection Rapid Response Plan for Illinois was activated to eliminate this invasive plant from the detention basin and prevent the spread to the Des Plaines River and other regional water resources. A physical barrier was installed on the pipe connecting the detention basin to the Des Plaines River. This barrier prevents the spread of plant fragments without obstructing flow through the pipe. Additionally, chemical treatment was performed multiple times in the detention basin in 2019 and 2020 to eliminate existing hydrilla. Plant surveys conducted in 2020 did not identify hydrilla in the detention basin of concern, surrounding detention basins, or the Des Plaines River. In 2021, the detention basin will be chemically treated, routine site visits will be performed to ensure the treatment is working, and plant surveys will be conducted to verify that hydrilla has not spread to surrounding water resources. There will also be a public information campaign about the risk of hydrilla and other invasive aquarium vegetation releases. This public information campaign will include education signage at the detention basin and letters which will be distributed to surrounding residential properties. Chemical treatment and plant surveys will likely continue for the next five to seven years to ensure the hydrilla has been completely eliminated.



DRWW Encourages Reduced Road Salt Use

Chloride concentrations are increasing in many surface waters throughout Lake County. Increased chloride concentrations have negative effects on plants, animals, water quality, infrastructure and human health. Removal of chlorides from water is not feasible on a watershed scale; therefore, pollution prevention is the best management practice. The use of road salt for deicing roads, sidewalks, parking lots, and driveways contributes chlorides to our local waterways. The DRWW encourages members to look for ways to reduce road salt use while ensuring safe travel, free of ice and snow, on transportation surfaces. Some tips to reduce road salt usage include:

- Remove snow as quickly as possible after a storm.
- Remove as much snow and ice as possible before using road salt.
- Do not use road salt when pavement temperatures are less than 15° F
- Evenly spread road salt so granules are approximately 2-3 inches apart.
- Do not pile road salt or apply it to dry pavement or vegetation.
- Sweep up undissolved road salt after all ice and snow has been removed.
- Address known drainage problems such as leaking downspouts, roofs dripping onto steps, discharges to sidewalks, and low spots in parking lots or driveways during warm weather.

The DRWW encourages members to attend a 2021 Smart Salt Collaborative Virtual Deicing Workshop! Workshops discussing public roads will be held on September 30th, October 5th, and October 12th 2021. Workshops discussing parking lots and sidewalks will be held on September 28th and October 7th 2021. Please visit the Smart Salt Collaboratives website for additional information: <https://saltsmart.org/workshops/>



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