



Des Plaines River Watershed Workgroup  
Nutrient Assessment and Reduction Plan  
(NARP)

February 18, 2021



THE  
CONSERVATION FUND

# Outline

- NARP Background
- DRWW NARP Development
- Potential Outcomes

# NARP Background

# What is a NARP ?



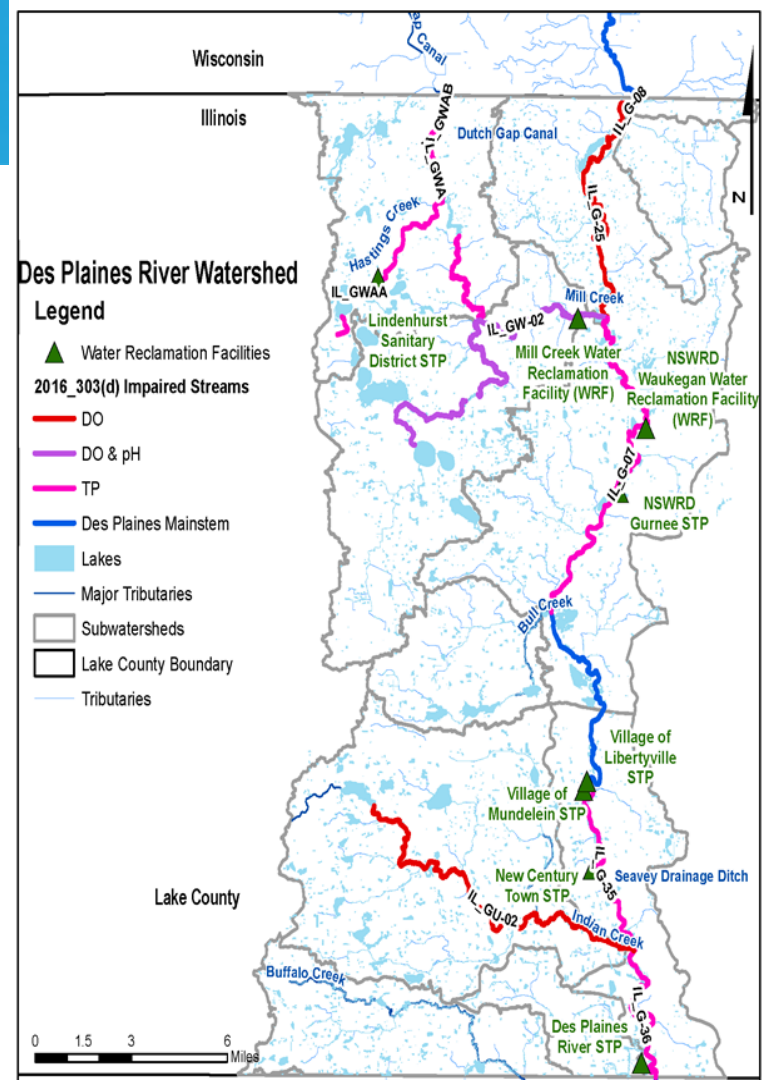
- Nutrient Assessment Reduction Plan – Dec 31, 2023
- Started with a 2018 Agreement between Illinois Association of Wastewater Agencies (IAWA), Illinois Environmental Protection Agency (IEPA) and Environmental Groups
- Special conditions in NPDES permits to address the P-related impairments in receiving waters
  - Dissolved Oxygen
  - Nuisance Algae
- Tangentially also a requirement in MS4 permit to meet TMDL (or alternative) requirements
- Flexibility to develop watershed-specific targets



Lower Des Plaines River.  
Photo by Cynthia Skrukud.

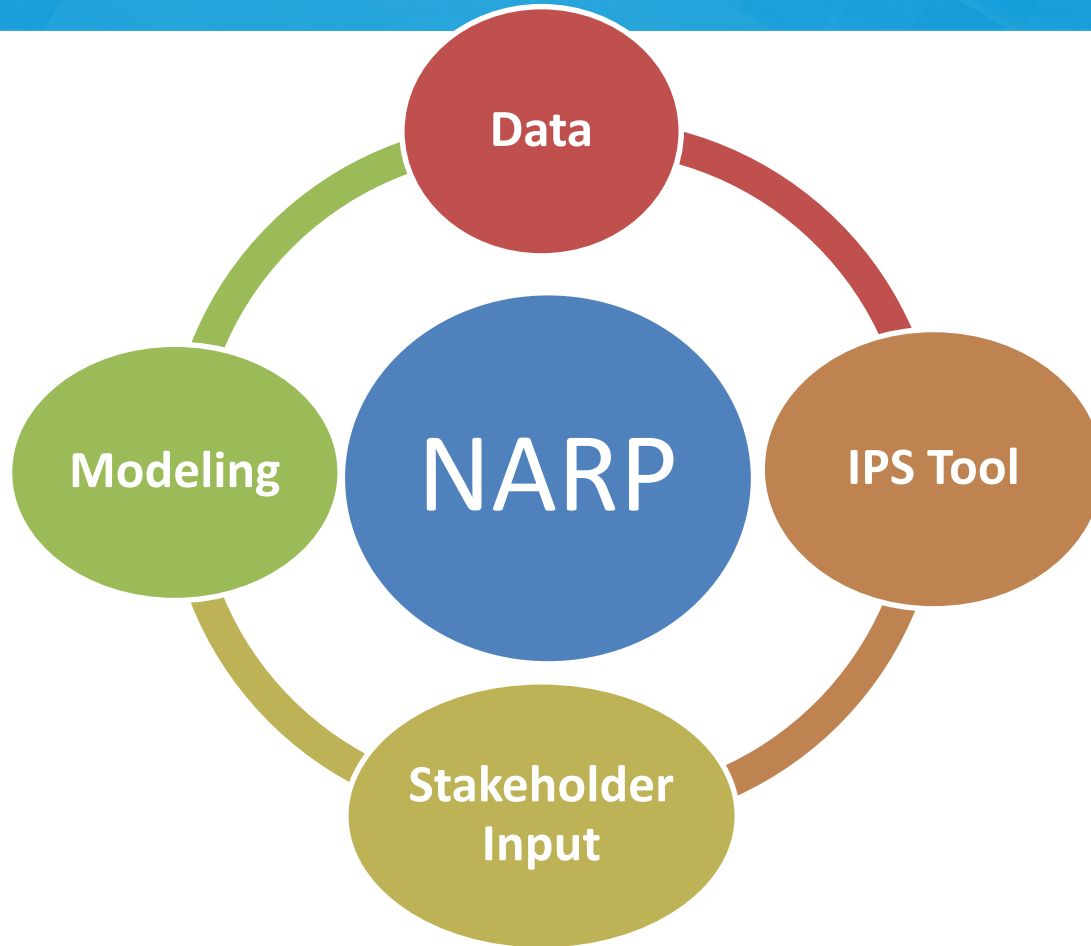
# DRWW NARP Conditions

- NARP Special Conditions in POTW NPDES Permits
  - Phosphorus related impairments
  - 8 major POTWs
  - DRWW implementation of NARP workplan
- NARP Workplan
  - Developed by Geosyntec
  - Established NARP objectives
  - Monitoring and modeling recommendations
  - Schedule and scope for NARP development

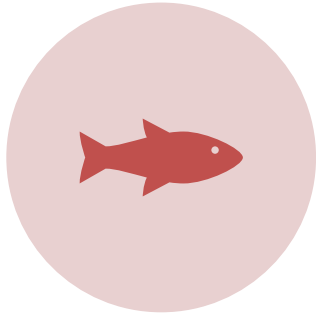


# DRWW NARP Development

# DRWW NARP Building Blocks



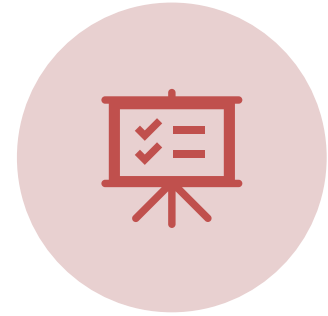
# DRWW NARP Objectives



*Establish watershed-specific targets*



*Determine measures needed to eliminate P-related impairments*



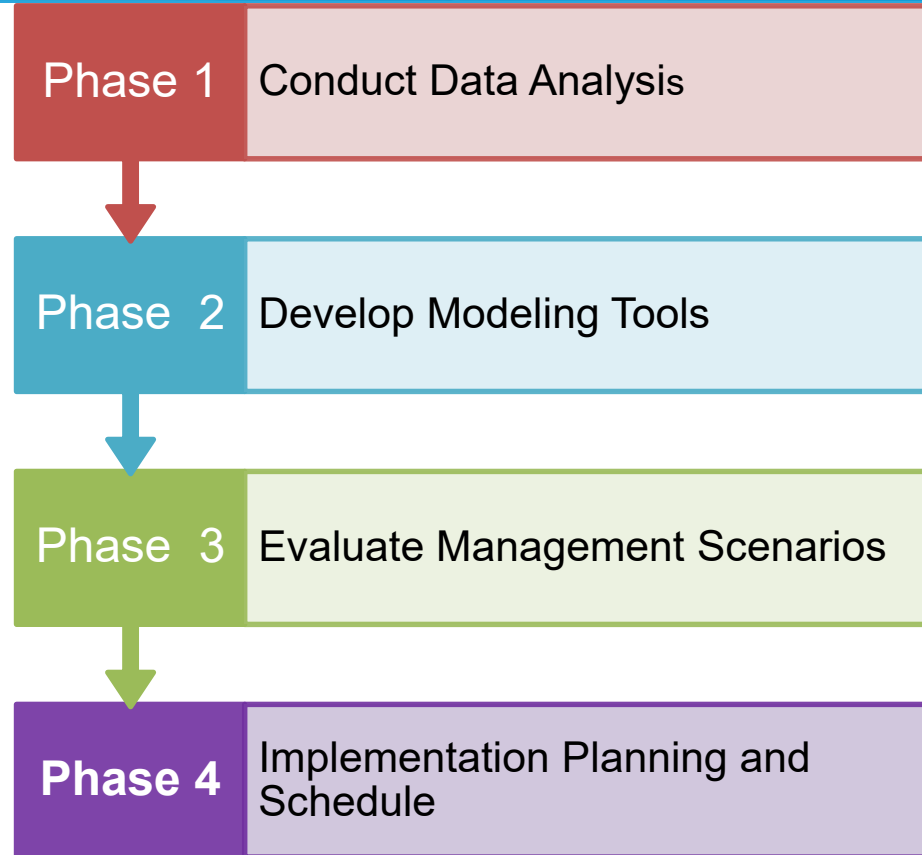
*Identify mechanisms to facilitate cost-effective implementation of the NARP*



# Project Approach

## Project Approach

- Phased approach
- Each phase will be a NARP chapter



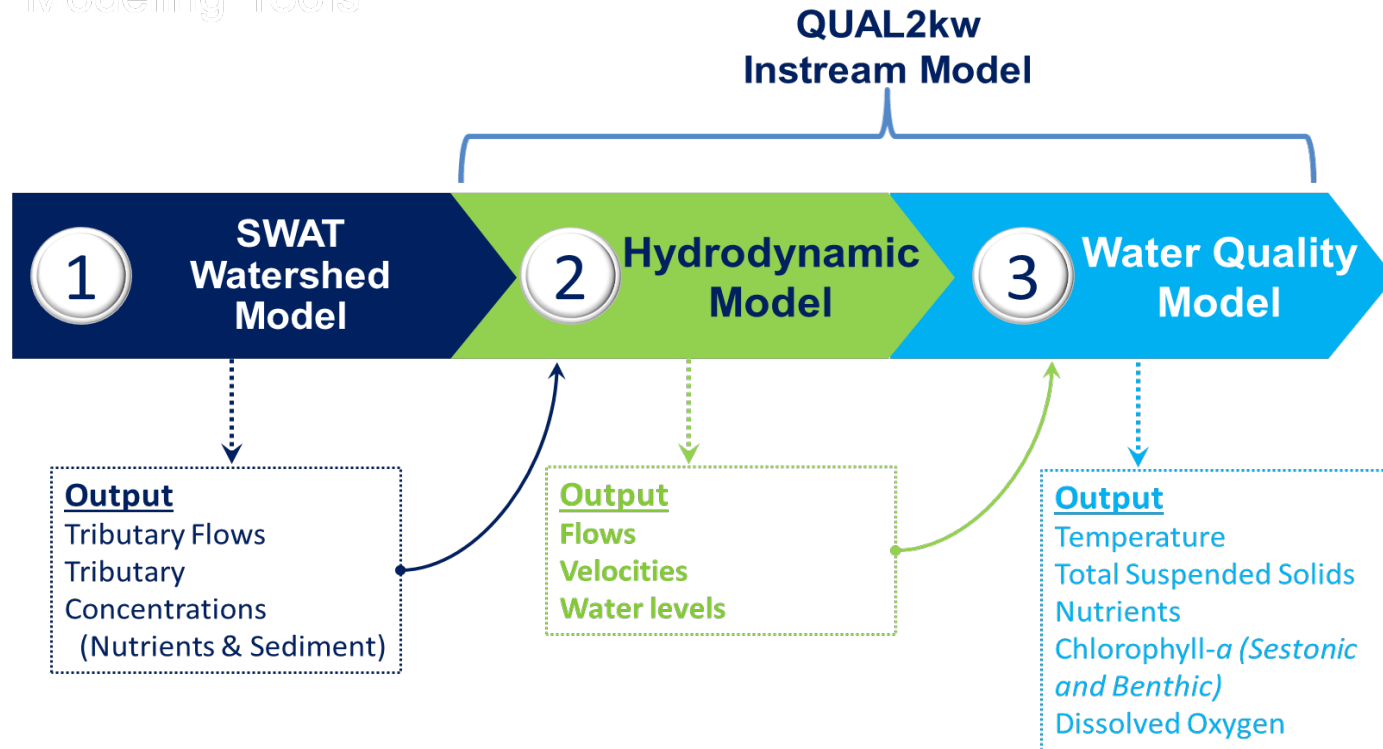
# Phase 1: Conduct Data Analysis

- Data from 2008 to 2018 was previously analyzed
- Review recent data to ensure no quality issues, and update the analysis, as needed
- Develop understanding of potential relationships between phosphorus, algae, and dissolved oxygen
- Conduct meeting to discuss data analysis

*Leverage Geosyntec's work  
from the NARP Workplan  
development*

# Phase 2: Develop Modeling Tools

Define the linkage between the phosphorus inputs and related impairments  
Modeling Tools



## Phase 3: Evaluate Management Scenarios

- Develop watershed-specific nutrient targets
- Develop a list of recommended measures to address phosphorus-related impairments
- Evaluate benefits of measures using modeling tools
  - Further point source reductions?
  - Non-point source controls?
  - Other measures?
  - Combination of measures

# Using IPS Tool for NARP

Stressor Identification  
Process: Biocriteria  
with Stressor  
Threshold Analyses

Proximate  
Causes &  
Sources of  
Impairment  
Identified

Ranking of Sites,  
Reaches &  
Subwatersheds by:  
***Restorability\****  
*Susceptibility*  
*Threat*

*\* Note: Illinois still lacks tiered aquatic life uses*

Which  
locations  
ranked high  
related to  
Phosphorus  
&/or Other  
Measures?

Overlay with  
Water Quality  
Model Results

Assess P-related  
Benefits of Potential Projects

Recommend Projects

← Adapted from DRWW 11/15/18 IPS Presentation →

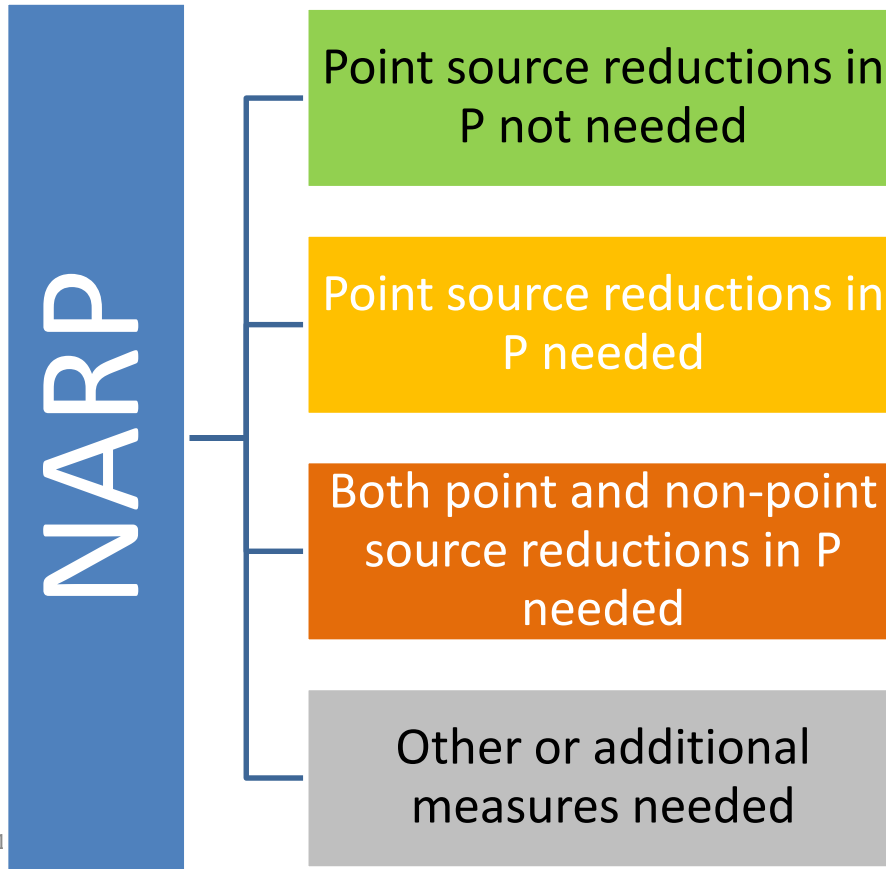
*Assumes this work has been successfully completed prior to the start of developing the implementation plan.*

## Phase 4: Implementation Planning and Schedule

- Identify specific implementation projects based on Phase 3
  - Leverage Lake County Green Infrastructure Model and Strategy, 2018 Watershed Plan and partnership opportunities for green infrastructure projects
- Develop implementation plan and schedule
  - Other funding opportunities for non-point source projects
  - Feasibility of water quality trading
- Develop a long-term adaptive management plan to document the benefits of implemented projects

# NARP Outcomes

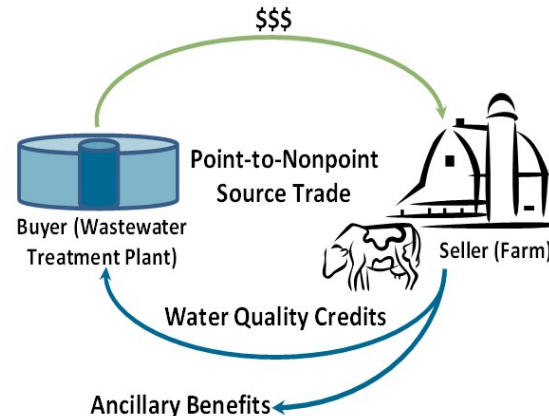
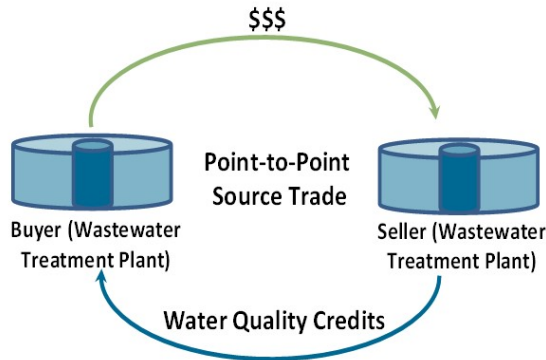
# Potential NARP Outcomes for DRWW





# Point Source Reduction

- Required level of treatment for POTWs
  - Technologically and economically feasible
  - Current target of 0.5 TP mg/L by POTWs
- Alternative means of achieving required reduction through water quality trading



# Agriculture Non-Point Source Reduction Measures



# Urban Non-Point Source Reduction Measures



**Bioretention cell**



**Detention Pond**

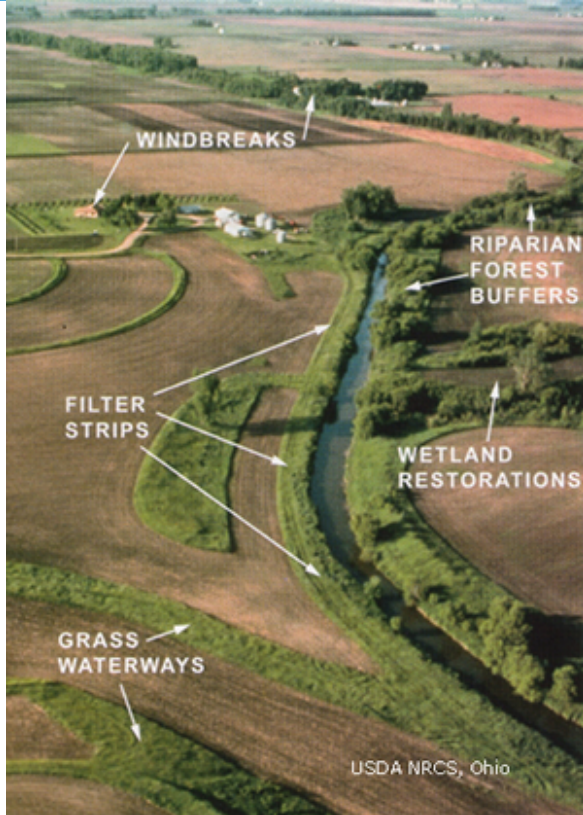


**Grass Swale**



**Sand Filter**

Image Courtesy : USGS



## Final Report

Stream Restoration as a BMP:  
Crediting Guidance



<https://www.waterrf.org/resource/stream-restoration-bmp-crediting-guidance>

Thank You!