

Fact Sheet on Aqua Illinois University Park Nutrient Assessment and Reduction Plan (NARP)

Introduction

In Illinois, wastewater treatment plants (WWTPs) discharging treated wastewater an average of 1.0 million gallons per day or more face significant capital and operational and maintenance costs to meet new nutrient controls requirements. These nutrient requirements were negotiated between the Illinois Environmental Protection Agency (IEPA), environmental non-governmental organizations (ENGO's) and the Illinois Association of Wastewater Agencies (IAWA) in 2018. As a result of these negotiations, IEPA has integrated Nutrient Assessment and Reduction Plan (NARP) requirements, or risk assessments, as special conditions in NPDES permits for all major WWTPs in Illinois that discharge into a waterbody which is either impaired due to phosphorous or at risk of eutrophication. Deer Creek, the receiving stream of the Aqua University Park Plant, meets these requirements. As such, Illinois EPA has integrated requirements to submit a NARP workplan by end of calendar year 2024 into the Aqua University Park WWTP NPDES Permit No. IL0024473.

Aqua Illinois will hold a virtual meeting to provide interested stakeholders an overview of the Deer Creek NARP on December 18, 2024 at 2:00 pm.

Objectives of NARP

- Identify and assess nutrient sources: Determine the various sources of nutrient pollution, including agricultural runoff, wastewater discharge, urban stormwater, and atmospheric deposition.
- Determine phosphorus reduction targets: Set achievable reduction targets for phosphorus levels to reduce impairment based on site specific scientific data and ecological needs.

Summary of NARP Findings and Water Quality Data

In 2023, Aqua retained Northwater Consulting to formulate a NARP workplan which has focused on augmenting historical data with continuous monitoring sensors to better understand water quality impairments and risk of eutrophication.

General Findings

- Phosphorus Contribution: minor contribution from WWTP (currently 19% of total P load in watershed), but nonpoint sources and stream habitat also contribute to phosphorus (81%).

- Stream Conditions: Consistent with 2021 Illinois EPA and USEPA-approved Total Maximum Daily Load (TMDL) report for Deer Creek, phosphorus from point and nonpoint sources is not the driver of dissolved oxygen water quality impairment.

Water Quality Data Summary

- 6 months of continuous monitoring and grab sampling on Deer Creek in 2023
- DO and pH: Consistent with TMDL, monitoring identified water quality problems upstream, unrelated to WWTP effluent. Water quality improved downstream from WWTP.
- Phosphorus Levels: Point source phosphorus is generally low, with WWTP already subject to a 1.0 mg/L effluent limit. TMDL modeling indicates Deer Creek is below its phosphorus loading capacity.
- Chlorophyll α : Generally low, not a primary concern for eutrophication.