

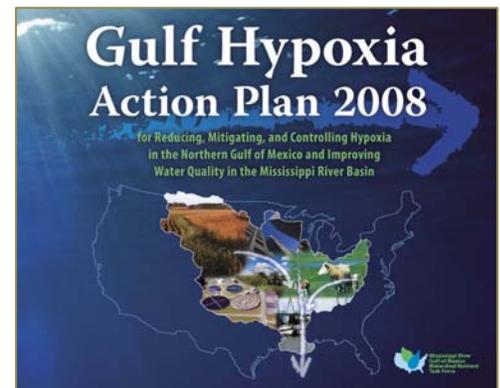


## INTRODUCTION

Federal and statewide nutrient regulations have been discussed for many years, even decades. In the last decade they have generally only been applied to Wastewater Treatment Facility (WWTF) discharge permits undergoing a plant expansion in Illinois. However, in recent years there has been heightened focus on developing statewide nutrient standards from the national and state level. The statewide efforts, along with recent results from Total Maximum Daily Load (TMDL) studies, have provided the momentum for the Illinois Environmental Protection Agency (IEPA) to add nutrient standards to WWTF National Pollutant Discharge Elimination System (NPDES) renewals. In fact, draft NPDES permit renewals for Fox River Watershed WWTF's issued in March of 2013 have included a Total Phosphorus (Total-P) effluent standard along with other nutrient related special conditions. If your WWTF discharges within the Fox River Watershed and you currently do not have a Total-P effluent standard within your NPDES permit, it is quite likely that your community will receive nutrient standards at your next NPDES permit renewal. The purpose of this briefing is to provide general background on nutrient regulations on the federal, state and Fox River watershed level, so you can start to plan to meet these regulations.

## FEDERAL NUTRIENTS RULEMAKING

Under the direction of the Clean Water Act, the United States Environmental Protection Agency (USEPA) has been charged with evaluating and mitigating the deleterious effects of nutrients, amongst other constituents, on waters of the United States. USEPA efforts to develop nutrient regulations to reduce impairments caused by nutrients within inland and coastal waters have been ongoing for decades. Within the Midwest, USEPA's primary motivation for nutrient reduction is to reduce and control hypoxia in the Gulf of Mexico. Gulf Hypoxia is an area within the Gulf of Mexico, currently estimated to be the size of the state of Massachusetts, where dissolved oxygen levels are so low that the waterbody cannot sustain most marine life. It is believed that nutrient loads within the Mississippi Watershed contribute to the Gulf Hypoxia problem. The *Gulf Hypoxia Task Force Action Plan* has established a goal of **45%** reduction in nutrient loads from the Mississippi Watershed.



*Action Plan ~ Cover Page*



## **STATEWIDE NUTRIENTS RULEMAKING**

While several research studies have struggled to define the cause/effect relationship between phosphorus levels and impairment in Illinois streams, federal nutrient reduction initiatives have forced the state to proceed with the development of nutrient standards. In May of 2011, the IEPA moderated a nutrient summit where stakeholders were informed of the results of research to date, existing statewide nutrient management initiatives and federal programs for nutrient management. In the beginning of 2012, four workgroups focusing on: 1) narrative water quality standard, 2) technology based effluent standards, 3) determining significant sources of phosphorus, and 4) low phosphorus waters, began the process of meeting each workgroup's goal toward nutrient management. Each of the workgroups made progress toward their goal, but have generally



*Aquatic Algae in River*

been put on hold until the Illinois Nutrient Reduction Strategy is developed. On March 11, 2013, the IEPA and Illinois Department of Agriculture initiated the mission to develop an Illinois Nutrient Reduction Strategy. The statewide strategy will be Illinois' plan to meet the goals established in the *Gulf Hypoxia Task Force Action Plan*. This two tiered approach, scientific assessment and then policy development, likely will result in statewide phosphorus and potentially nitrogen standards. In mid-2014 we will see if Illinois' nutrient reduction strategy will be placed predominately on the backs of WWTF dischargers with little focus on nonpoint source (i.e. agriculture) reduction – as is the strategy in at least one similarly agricultural neighboring state.

## **FOX RIVER WATERSHED NUTRIENTS STANDARDS**

Approximately 50 miles of the 115 miles of the Fox River in Illinois are listed as impaired due to aquatic algae. In the summer of 2001, the Fox River Study Group (FRSG), who is a coalition of stakeholders throughout the Fox River Watershed, assembled and started to chart a course toward eliminating nutrient related impairment for the stretch of the Fox River between Stratton Dam and its confluence with the Illinois River. The FRSG has worked with the Illinois State Water Survey (ISWS) to develop computer models that replicate nutrient loading, phytoplankton production and dissolved oxygen levels within the Fox River. In April 2013, the ISWS started to present the results of alternative nutrient management strategies throughout the watershed,



*Tertiary Filters at WWTF*



including WWTF Total-P effluent standards as low as 0.1 mg/l and some alternatives that include several dam removals along the stretch of river under study. The FRSG has set a goal of completing the modeling report and developing a watershed nutrient management implementation plan by August of 2013 and June of 2015, respectively. The implementation plan likely will establish a timeframe of 20 years to complete the nutrient management projects with the ultimate goal of returning the Fox River to its designated uses. In March 2013, in anticipation of the near future modeling study completion and the initiation of the development of the implementation plan, the IEPA issued three draft NPDES **permits for renewals** with Total-P effluent standards of 1.0 mg/l. The draft permits state the permittees will have three years to achieve compliance. Within one year of the effective date of the permit, they also will be required to submit a Phosphorus Removal Feasibility Study that documents how they can meet 1.0 mg/l and 0.5 mg/l Total-P effluent standards. Along with significant additions to the list of parameters to be monitored on a monthly basis, the draft permits state the permittees also will be required to participate in the FRSG. Following the final issuance of these three permits, other Fox River Watershed permit renewals will be seeing the same requirements.

### CONCLUSIONS

The nutrient standard ship has already set sail and it has many communities throughout Illinois on its route. Several Illinois communities obtained Total-P limits as part of WWTF expansions that have occurred over the last decade. Federal, statewide and watershed focused nutrient management efforts are providing the motivation to issue NPDES permit renewals with nutrient effluent standards. Communities with nutrient standards in place should stay tuned because nutrient removal trading likely will be part of the watershed and statewide strategy. The sooner communities plan for nutrient management, the better off they will be when the ship arrives at their port. If you have any questions on how nutrient regulations may affect your community, please contact Jeff Freeman at [jfreeman@eeiweb.com](mailto:jfreeman@eeiweb.com) or (630) 466-6700.