

Source Water Quality and the Cost of Nitrate Treatment in the Mississippi River Basin: Northeast-Midwest Institute Report



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The Northeast-Midwest Institute issued a report titled:

Source Water Quality and the Cost of Nitrate Treatment in the Mississippi River Basin (Report)

The Report's authors are:

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- Ankita J. Mandelia, Policy Analyst, Toward Sustainable Water Information Program
- Eric A. Heath, Senior Policy Counsel, Mississippi River Basin Program

The Report analyzes water quality and treatment cost data over a 10-year period from January 2008 to December 2016 of three water utilities in the Mississippi River Basin. The three water utilities include:

- Des Moines Water Works (Iowa)
- City of Decatur (Illinois)
- Aqua Illinois Vermilion County (Illinois)

The Report also encompasses the watersheds of the associated intake locations.

The Report identifies as key findings:

- Farm fertilizer was the largest contributor of nitrogen loading.
- Nitrogen reduction scenarios modeled after final and interim targets set by the Mississippi River/Gulf of Mexico Hypoxia Task Force suggested that cross-sector reductions would be most effective in reducing nitrogen loads in the source waters.
- Nitrate concentrations generally increased over the 10-year study period, resulting in an increase in the daily exceedances of the nitrate MCL.
- Daily exceedances were significantly higher during the second half of the study period. A 45 percent reduction in the intake nitrate concentrations would virtually eliminate exceedances, but even a modest 10 percent reduction would bring down exceedance by 20-33 percent.
- Capital expense is a significant component of the overall cost of nitrate treatment at the three utilities.
- Amortized capital cost of the treatment unit outweighed annual O&M costs, except in Des Moines.
- In years when influent nitrate levels were the highest, utilities spent 4-9 percent of their overall operating budget on nitrate treatment.

- Smaller utilities face an undue burden of nitrate pollution in drinking water sources.
- Conservation programs have the potential to limit some of these costs to utilities, although the extent of their impact will depend on a variety of factors specific to the watershed.

A copy of the [Report](#) can be downloaded here.