

Why NEW Water Selected

Adaptive Management for Permit Compliance

As a wastewater utility, NEW Water, the brand of the Green Bay Metropolitan Sewerage District, is regulated by the Wisconsin Department of Natural Resources (WDNR), and is committed to meeting permit obligations on behalf of the communities it serves.

With the health of area waters being essential for a thriving economy, as well as public health, the WDNR recognized that more meaningful water quality improvements could be made at a lower cost, and more environmental gain, if [nonpoint](#) sources and [point](#) sources were to partner together. In addition to treatment alternatives, they offer an alternative compliance option known as Adaptive Management, which in some cases, is a more economical approach that can yield greater environmental gain.

As stewards of Northeastern Wisconsin's water and financial resources, NEW Water has selected [Adaptive Management](#) as its permit compliance option. The factors below led to this decision.

- **NEW Water is required to meet stringent Phosphorus and Suspended Solids discharge permit limits. Adaptive Management was the most cost-effective alternative to meet those requirements.**

In 2018, NEW Water developed a phosphorus compliance plan that considered the following alternatives:

- Optimization of existing treatment systems
- New tertiary treatment infrastructure at the treatment facilities
- Watershed compliance alternatives (water quality trading, Multi-Discharger Variance [MDV], and Adaptive Management).
 - *Note: NEW Water's water quality trading credit needs were too large to be feasible within the permit schedule, and NEW Water was not eligible to participate in the MDV program.*

- *With new environmental regulations, "do nothing" is not an option.*
- *NEW Water's **current infrastructure cannot meet new regulations.***
- ***Adaptive Management** is the most **cost-effective** way to achieve regulatory compliance.*

NEW Water's existing treatment facilities, even with optimization, would not achieve permit compliance.

Protecting our most valuable resource, water



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➤ **The Adaptive Management approach has been successfully piloted and ‘right-sized’.**

To investigate the Adaptive Management alternative compliance option, NEW Water launched a pilot project in Silver Creek in 2014, using a grant from the U.S. Environmental Protection Agency’s Great Lakes Restoration Initiative. The pilot project included many nonpoint source partners.

Off of the success of this project, NEW Water was able to negotiate with the WDNR a more manageable, smaller sub-watershed compliance area, which is less costly than performing work in the entire Lower Fox River Watershed.

The compliance area identified for NEW Water’s Adaptive Management Plan is adjacent to Silver Creek: the Ashwaubenon Creek and Dutchman Creek subwatersheds. Selecting this area has the additional benefit of carrying over strong partnerships developed during the Silver Creek Pilot Project in two watersheds largely within the NEW Water service area.

➤ **Adaptive Management is a more fiscally prudent approach.**

Tertiary treatment infrastructure improvements and Adaptive Management were evaluated on a capital, operation and maintenance, and life-cycle cost basis. A 30-year net present value (NPV) analysis was completed for the two alternatives. NPV is how much is needed in Year 1 to cover all project costs over the next 30 years, and is a comparison tool.

- **Tertiary treatment infrastructure has a 30-year NPV of \$88 million.**
- **Adaptive Management has a 30-year NPV of \$71 million.**

Adaptive Management costs were based on experiences gained in the Silver Creek Pilot Project and include a conservative assumption of constructing tertiary treatment facilities at the Green Bay Facility after a 20-year Adaptive Management period. Constructing treatment facilities was included because water quality may not be achieved at the conclusion of the Adaptive Management period.

If tertiary treatment facilities are not required, the 30-year NPV for Adaptive Management is \$40 million.

➤ **Adaptive Management offers environmental benefits to the greater Green Bay area for the economy, and people of Northeast Wisconsin.**

Additional benefits include habitat restoration; preventing the loss of soil and nutrients, which are crucial to improved soil health; enhanced economic value of the Green Bay fishery; reducing the impact of the “dead-zone” in the bay; enhanced property values adjacent to waterways; and an attraction of more than \$10 million of outside investment in improved agricultural practices and water quality.



The WDNR has given its approval of NEW Water’s Adaptive Management Plan, and the plan is incorporated into NEW Water’s pending discharge permit. [Learn more about the NEW Watershed Program.](#)