2018 Update

Land Owner and Grower Project Summary

Silver Creek Pilot Watershed Project

The Silver Creek watershed is about 7.5 square miles (4,800 acres) and is located 1 mile west of the Austin Straubel airport. Silver Creek flows from Outagamie County into Brown County, and is a tributary to Duck Creek, which flows into the bay of Green Bay. Water testing in Silver Creek shows that it has high levels of phosphorus and sediment, which contribute to algae growth, low oxygen, and loss of habitat for fish and aquatic life.

The Silver Creek pilot project started in June 2014 and is a partnership between agricultural land owners and operators; state, local and tribal governments; and NEW Water, the brand of the Green Bay Metropolitan Sewerage District. The overarching goals of the project are to improve water quality in Silver Creek and establish a long-term partnership between NEW Water and the agricultural community. To achieve these goals, the project works to improve soil health, implement operational improvements, and install conservation practices to retain phosphorus and soil on the field. Success and progress towards these goals to date is due in large part to the participation by land owners and operators in the Silver Creek watershed.

2017 – Year Two of Implementation

The implementation of practices began in 2016 and continued throughout 2017. The verification of previously installed practices was also initiated in 2017. Accomplishments of the pilot project over the last four years include:

- Soil nutrient sampling at 2.5 acre grids for all fields;
- Annual field walks with conservation and agronomic professionals to identify opportunities for reducing field-level phosphorus and soil loss;
- Conservation and Enhanced Nutrient Management Plans developed with each land owner and grower,
- Obtained conservation practice funding, utilizing a variety of funding sources to meet the needs of the grower or land owner; and
- Assisted with contracting, implementation, inspection, and operation of the conservation practices; using GIS technology to collect, organize, and communicate information.

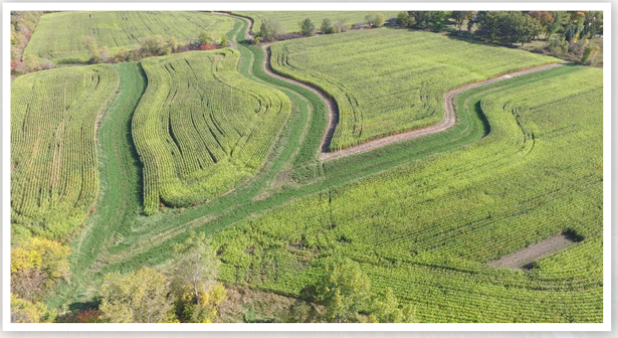
Practices Implemented in 2017

- 5 acres of critical area plantings
- 8 acres of filter strips
- 1,130 feet of ditch cleaning
- 21 acres converted to CRP
- 63 acres of wetland construction
- 538 acres of cover crops
- 1,611 acres of land in cover (cover crops, alfalfa, grass, CRP)
- 457 acres of tillage practices changed
- 28 acres used nutrient placement techniques

Pilot Project Efforts in 2018 and Beyond

- Re-walk selected fields to confirm conservation and nutrient management opportunities
- Meet with individual land owners and growers to review conservation opportunities and implementation
- Verify installed practices and monitor performance
- Continue monitoring phosphorus water quality along Silver Creek
- Update conservation and enhanced nutrient management plans biannually.

Grassed waterway network extending over three fields:



Filter strips and critical area plantings providing a buffer along Silver Creek:

Conservation Practice Spotlight: Interseeding Cover Crops

The Silver Creek team worked with Brown County and the Fund for Lake Michigan to purchase a 6-row interseeder from InterSeederTM Technologies, which became available to growers planting cover crops in the Lower Fox River watershed in 2017. Maintaining cover on fields over winter is important for keeping soil and nutrients on the fields, and out of the creek. Interseeding cover crops earlier in the season allows growers to avoid the traditional linear timeline of planting cover crops, which can be challenging in nothern climates with shorter growing seasons. In 2017, 8 corn fields were interseeded early in the planting season and successfully established cover crops with no negative impact on yield.

Biological Monitoring

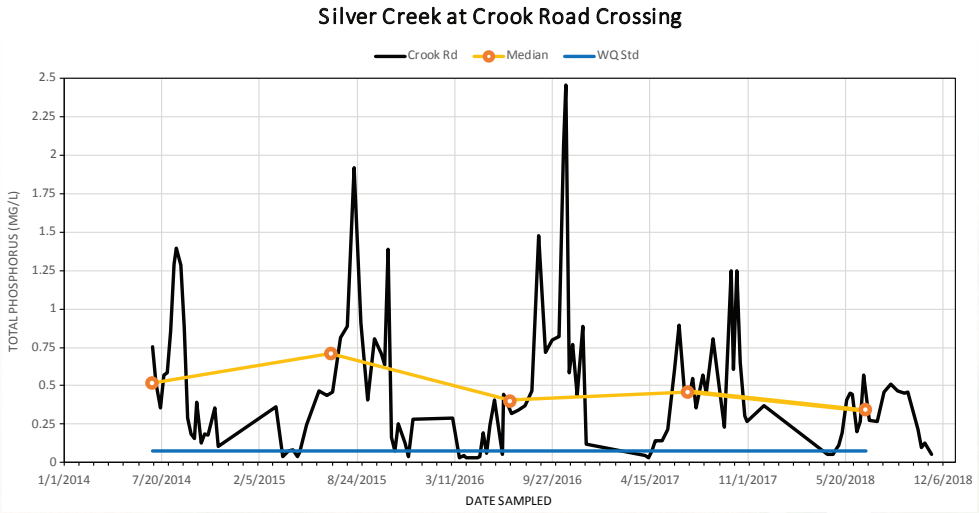
Biological Monitoring can assist in determining the success of on-field conservation implementation due to observations of in stream organisms, which indicate that biological data are correlated to the phosphorus levels in the watershed. The 2017 data show that multiple macroinvertebrate species are present in Silver Creek, indicating suitable habitat is present for biological communities. However, the biological data still show some organic pollution is present in the watershed, which is consistent with the observed water quality data. 2017 was a year with ongoing implementation, continued data monitoring will be useful to demonstrate successful performance of practices once fully established.

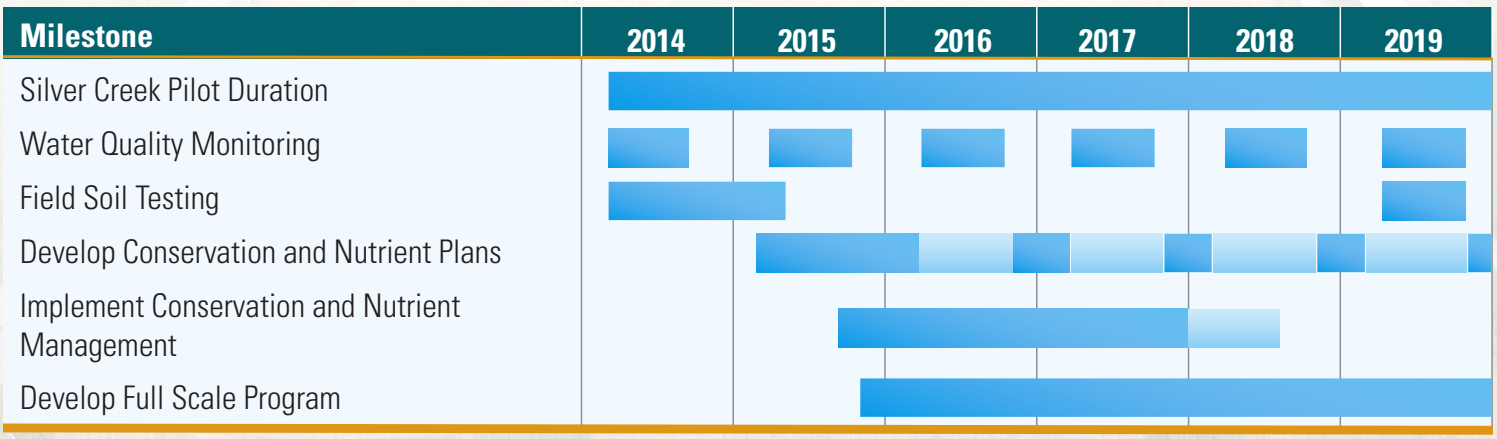
Water Quality Monitoring

Grab and event-based water quality sampling has taken place at 5 locations along Silver Creek since 2014. A general trend of decreased phosphorus was observed beginning in 2016, following the installation and implementation of practices. Data from 2017 indicate some increases in phosphorus primarily due to increased precipitation events. Still several sites remained below pre-implementation concentrations. The Silver Creek Team expects that improvements in water quality will be observed gradually over time, as practices become well established and the creek has time to respond. Generally, these observed water quality improvements require five years post implementation.

Additional Information

For additional information about the demonstration project, please contact Jeff Smudde (jsmudde@newwater.us or 920-438-1071) or Brent Brown (brent.brown@jacobs.com or 414-847-0393).





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