

## PROJECTclarity

## **Spring 2019 Dashboard**

A community initiative to permanently clean and restore the waters of Lake Macatawa and the Macatawa Watershed



A blend of three types of cover crop in Fillmore Township

While the beginning of 2019 has been off to a cool, wet start, Project Clarity has continued working with partners across the watershed on a number of projects. In February, we held our sixth luncheon for local farmers. Rather than bringing in a regional speaker, we held a panel of local farmers led by MACC Agricultural Tech Rob Vink. Rob led a discussion with the panel on what best management practices have worked well and tips on how others might implement similar practices designed to reduce phosphorus loss on their fields. These practices, and planting into cover crops.

Cover crops have been appearing across the watershed, helping hold soil and prevent erosion during frequent spring rains. Single species of cover crop have been used across several thousand acres in the watershed, but blends of multiple types of plants were being tried by numerous producers this year. Planted last fall, these blends provide additional nutrient benefits to the farmer, in addition to helping ensure the fields stay greener. We continue to help growers pair cover crops with other techniques and projects designed to improve field performance and prevent excess nutrients from reaching nearby streams.



Iron slag prior to installation



Excavating a hole to the tile line for the storage tanks



Placing the storage tanks and filter lines

With a host of partners, we are trying out a new tool in our battle against excess phosphorus in the Macatawa Watershed. So far this spring, we have installed two phosphorus filters containing iron slag on farm fields in Overisel and Fillmore Townships. These are designed to help remove excess phosphorus from water leaving fields and were installed in areas with unusually high levels.

These new phosphorus filters use iron slag – leftover from steelmaking processes – to chemically bind the excess phosphorus before it reaches streams, similar to phosphorus binding to metals naturally occurring in soil. The slag is stored in a tank set up similarly to that found in a septic system, with water flowing from a tile line through the box before reaching the waterway with significantly lower phosphorus levels. The expected lifetime for these tanks range from five to ten years, depending on the size and type of slag used. Once the slag in the tank has reached its life expectancy, the slag can be dug out and replaced.

With this type of project brand new to West Michigan, we are grateful for the minds and might of our many partners on this project, including Dykhuis Farms, Plant Tuff, the USDA and Purdue University, Brink Farms Trucking, and the Annis Water Resources Institute. Major funding support for this project came from the Michigan Department of Agriculture and Rural Development. We will work to install several more of these filters this year, and work with our partners to evaluate how broadly we could use these filters to help reduce phosphorus sources in our watershed.

(below left) Placing the last of the slag inside the capped storage tanks (below) The completed site with four access ports and

(below) The completed site with four access ports and water control structure





## **Project Outcomes To Date**

The following are recorded totals associated with water quality projects throughout our watershed since Project Clarity was initiated in 2013.

- A total of 133 projects since 2013
- Models estimate over 38,000 pounds of phosphorus removed annually
- 7 major restoration projects created 92 acres of new wetland on 290 acres of protected land
- 41 mitigation credits created, supporting long-term stewardship
- 200 acre-feet of water storage created
- Nearly 3 miles of streams and waterways have been restored and 7,500 feet of two-stage ditch created
- Over 200 acres of land treated for invasive plants
- 75 acres of native plantings
- 123 agriculture BMP projects
- 65 farms have committed to best management practices on over 24,000 acres
- 32% of BMP project costs have been contributed by producers



Land enrolled in BMP projects (green) out of agricultural land across the watershed (yellow)



The Annis Water Resources Insitute and local design firm TwistThink have been piloting a real-time, remote water clarity system. It utilizes a water quality sonde (left) connected to an antenna connected to the cellular network (right). After testing last fall, Twisthink is developing a Bluetooth cap to make communication between the sonde and radio more reliable. Following testing this spring, we will seek to expand our network of sondes across the watershed to provide our team and the community with real-time water quality data.





## Precipitation and Total Phosphorus (P) in Lake Macatawa

This chart compares precipitation and phosphorus levels in the Macatawa Watershed over the last 46 years.

P levels in 2018 were the lowest measured levels since monitoring began in the 1970's. While levels will continue to fluctuate, the long-term trend is encouraging.

For the full report, visit outdoordiscovery.org