



Michigan's
Nonpoint Source
Program

**Federal Clean Water Act
Section 319 Grant**
2017-0009



Ottawa County Water Resources

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Upper Sand Creek Restoration

October 1, 2017 - September 30, 2020

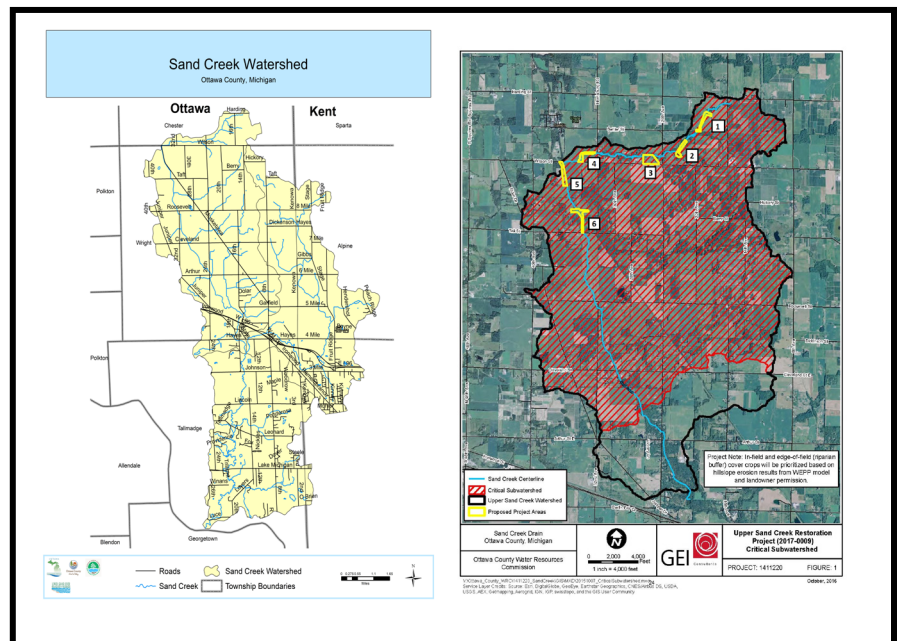
The Sand Creek watershed is designated by the State of Michigan as a Coldwater Trout Stream. Recently, however, non-point source pollution issues have caused habitat loss or degradation and have affected the watershed's ability to meet other designated uses. The major impairments in Sand Creek include flashy flow conditions and excessive sedimentation, which can be attributed to a number of sources including wetland loss, channelization, eroding streambanks, drain tile management, and agricultural runoff. The primary goal of this project was to remove approximately 1,250 tons of sediment/year from the upper reach of Sand Creek through bank stabilization, grade control, wetland/floodplain enhancement, and various cropland BMPs. Work was completed in 5 project areas to accomplish this goal, and included the installation of significant two stage ditching, large woody debris (toe wood), recontouring and soil lifts, and cross vane structures. The Ottawa Conservation District (OCD) also worked with local agricultural producers to implement over 1,000 acres of cover crops during the project duration.



Grant Amount: \$ 600,000

Match Funds: \$ 239,800

Total Amount: \$ 839,800



I&E Activities:

- Ottawa County Water Resources and OCD held an informational meeting regarding the construction projects and fundable BMPs.
- Informational materials were distributed to landowners in the watershed.
- OCD met with farmers and other landowners to offer technical assistance, plan, and implement agricultural BMPs.
- Held meetings with landowners to answer questions about the project and associated costs.

Partners involved:

- Michigan EGLE
- Ottawa County Water Resources Commission
- Chester Township
- Ottawa Conservation District
- GEI Consulting
- Ottawa County Farm Bureau
- Land Matters, LLC

Best Management Practices:

- 4 cross vanes (grade control)
- 5.24 acres of wetland restoration
- 5,162 linear ft of 2 stage ditching
- 180 linear ft of toe wood and bank stabilization
- 1,011 acres of cover crops

Annual Load Reductions:

- Sediment- 1,603 tons
- Phosphorus - 799 lbs.
- Nitrogen - 3,419 lbs.



Project aerial view: Most project areas involved streambank stabilization, re-contouring, two stage ditching, and other BMPs to counteract erosion.



Project area 5: Vegetation beginning to establish, and sandbars are forming on the second "shelf."



Project area 5: Two stage ditches were installed to address streambank erosion, falling trees, etc.



Project area 4: This stretch had severe erosion, vertical and undercut banks, and led to massive downstream sedimentation



Project area 4: Soil lifts, toe wood, and live staked vegetation will help to stabilize this site long term.