FACT SHEET

Surface Water
Updated April 2013

Grand River (upper) Watershed TMDL Report

The Clean Water Act requires Ohio EPA to prepare a cleanup plan for watersheds that do not meet water quality goals. The cleanup plan, known as a total maximum daily load (TMDL) report, specifies how much pollution must be reduced from various sources and recommends specific actions to achieve these reductions.

*A **watershed** is the land area that drains into a body of water.*

What are the essential facts?

- Ohio EPA studied the watershed and found water quality problems at several locations.
- Water quality improvements can be made with practical, economical actions.
- Making water quality improvement depends on the participation of the watershed's residents.

Where is the Grand River (upper) watershed?

The Grand River (upper) watershed is located in northeast Ohio extending from north of Warren to south of Rock Creek. This 417.5-square mile watershed area is home to more than 63,300 people and encompasses all or part of six municipalities in Trumbull, Ashtabula, Geauga and Portage counties. The watershed is primarily forested and cultivated crops with 6.3 percent being developed.

West Farmington obtains its drinking water from the Grand River, providing drinking water to approximately 500 people. A significant reach of the main stem of the Grand River in the study area (25.8 miles) is a designated State Scenic River with oversight from the Ohio Department of Natural Resources (ODNR) Scenic Rivers Program.

In addition, the ODNR Division of Wildlife manages the Grand River Wildlife Area, which includes 5.8 miles of the Grand River main stem, as well as significant reaches of the lower ends of Coffee Creek, Dead Branch, Mud Run, Center Creek, and Baughman Creek. The wildlife area includes large tracts of hardwood swamp forest and wetlands that provide significant water quality functions.

How does Ohio EPA measure water quality?

Ohio is one of the few states to measure the health of its streams by examining the number and types of fish and aquatic insects in the water. An abundance of fish and insects that tolerate pollution is an indicator of an unhealthy stream. A large number of insects and fish that are sensitive to pollution indicate a healthy stream.

In 2007, comprehensive biological, chemical, and physical data were collected in the watershed by Ohio EPA scientists. The watershed's conditions were compared with state water quality goals to determine which streams are impaired, and how much needs to be done to restore good stream habitat and water quality.

What is the condition of the Grand River (upper) watershed?

Of the sites sampled, 63% fully met their biological goals; 23% met some of the goals; and 14% met none of the biological goals. Only 16% of sites sampled met recreation-based (bacteriological) goals.

Causes of sites meeting no biological goals tended to include natural conditions (flow or habitat), nutrients and total dissolved solids. Causes of sites meeting some of the biological goals predominantly included natural conditions (flow or habitat), direct habitat alterations, nutrients and organic enrichment. Sources of biological impairment include natural issues with flow or habitat, hydromodification (such as dams), sewage discharges and habitat modification. Sources of bacteria include agricultural land uses and failing home sewage treatment systems (HSTS).

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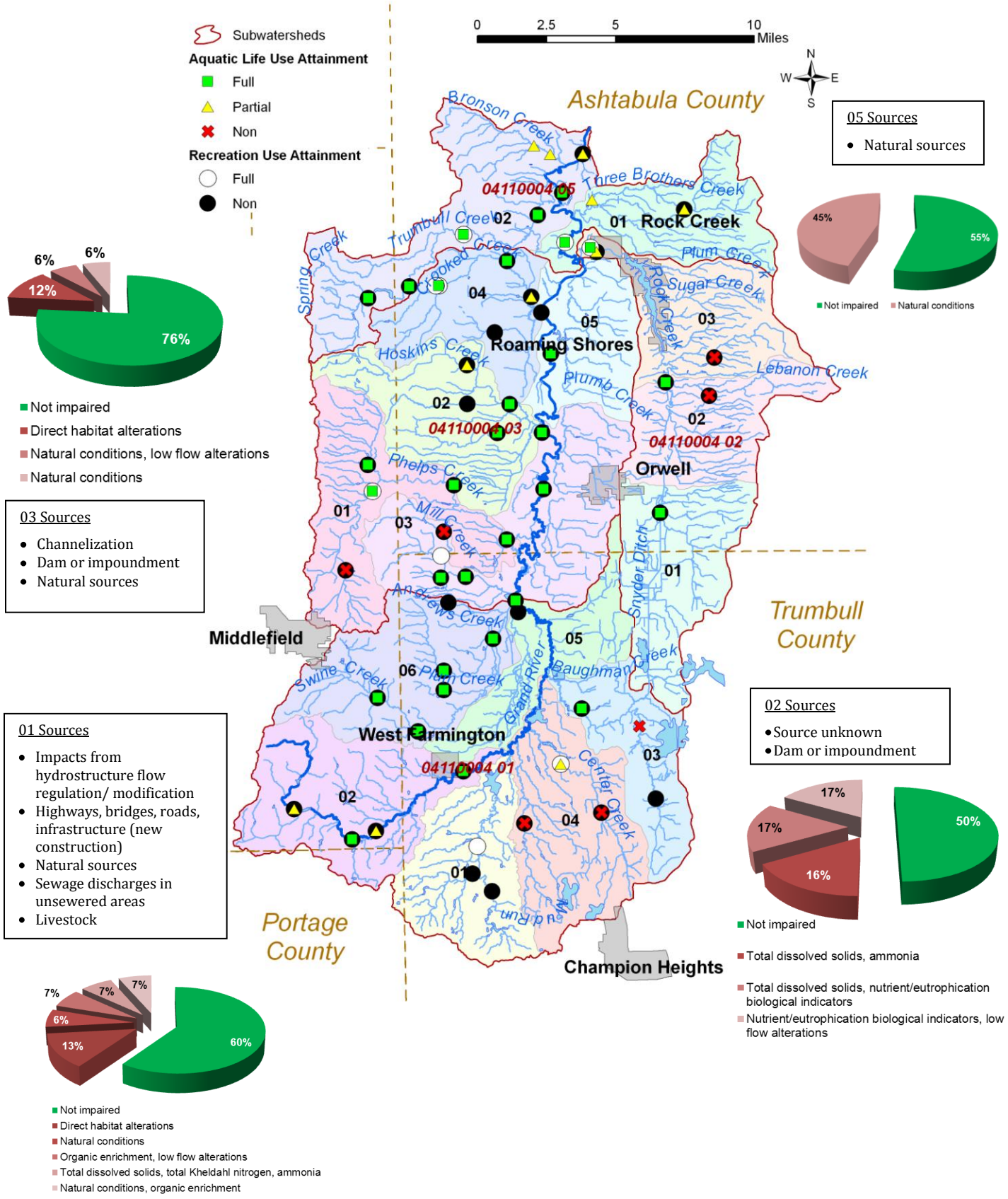
What are the problems?



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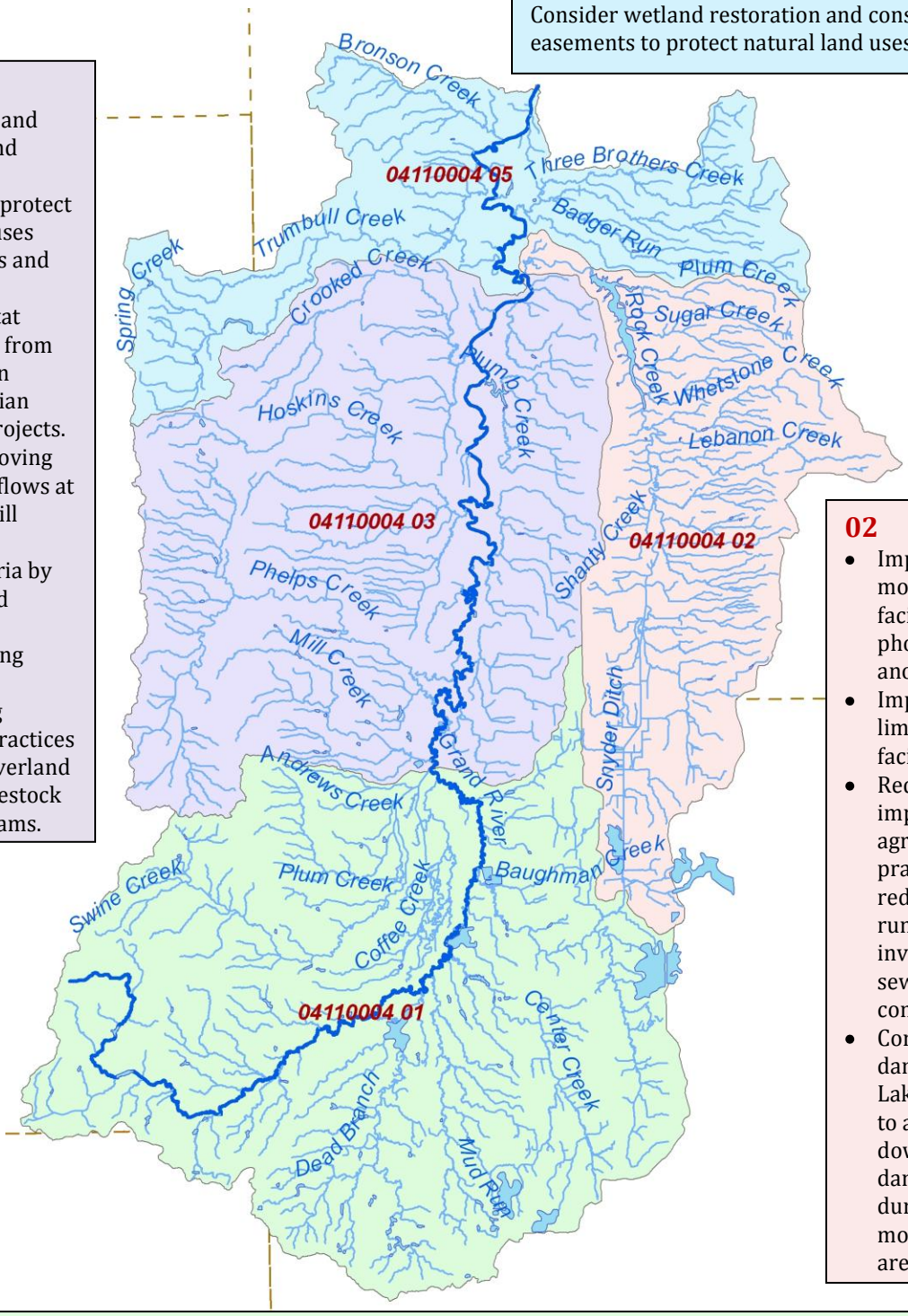
How can the problems be fixed?

05
Consider wetland restoration and conservation easements to protect natural land uses and flows.

03
- Consider wetland restoration and conservation easements to protect natural land uses around Phelps and Mill creeks.
- Address habitat modifications from channelization through riparian restoration projects.
- Consider removing or modifying flows at the dam on Mill Creek.
- Reduce bacteria by inspecting and repairing or replacing failing HSTS and implementing agricultural practices that reduce overland runoff and livestock access to streams.



02
- Implement nutrient monitoring at one facility and a total phosphorus limit at another.
- Implement ammonia limits at three facilities.
- Reduce bacteria by implementing agricultural practices that reduce overland runoff and investigate installing sewers in HSTS communities.
- Consider modifying dam releases from Lake Roaming Rock to augment flows downstream of the dam, especially during the summer months when flows are lower.

01
- Implement total dissolved solids limits and ammonia and total Kjeldahl nitrogen monitoring at two facilities.
- Reduce bacteria by inspecting and repairing or replacing failing HSTS and implementing agricultural practices that reduce overland runoff and livestock access to streams.
- Reduce bacteria around Dead Branch by restoring wetlands to filter sediment from runoff.
- Consider removing or modifying flow regimes at the dam forming Grand River Lake.
- Address impacts from road construction with stream and riparian restoration.

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What are the most important "fixes" in the watershed?

- **Reduce bacteria entering the streams**
  - Inspect and replace or repair failing home sewage treatment systems.
  - Implement agricultural best management practices to reduce overland runoff and livestock access to streams.
- **Restore natural flows to dammed streams.**
  - For the dams on Mill Creek and the Grand River, removal should be considered. If removal is not supported locally, modification of dam releases may help to mimic natural flows.
  - Modification of dam releases at Lake Roaming Rock should be considered, particularly to augment summer flows.
- **Restore riparian banks and in-stream habitat where they have been modified.**
  - Stabilize banks and plant riparian woody vegetation where banks have been denuded.

What actions are needed to improve water quality?

There are a variety of reasons why streams in the Grand River (upper) watershed fail to meet water quality goals, so several types of actions are needed to improve and protect the watershed.

The recommendations focus on reducing pollutant loads and/or increasing the capacity of the streams to better handle the remaining pollutant loads. Sources of water quality problems that should receive focus for water quality improvements include:

- Implement agricultural best management practices to reduce bacteria entering streams.
- Remove or modify flows at three dams.
- Address habitat modifications through stream and/or riparian bank restoration.

Who can improve the situation?

Implementation of this report's recommendations will be accomplished by federal, state and local partners, including the voluntary efforts of landowners.

Ohio EPA will issue permits to point source dischargers that are consistent with the findings of this TMDL report.

The Ohio Department of Natural Resources has programs dedicated to abating pollution from certain agricultural practices; promoting soil, water, and wildlife conservation; and dealing with storm water and floodplain protection. County agencies often work with state and federal partners in administering federal and state assistance programs to people in their counties. Several such programs are available to address home septic system upgrades and agricultural and urban conservation practices.

Environmental restoration and protection activities within the Grand River (upper) watershed have been largely focused upon wetland creation, enhancement and preservation, as well as stream preservation and protection strategies. Private conservation efforts by several organizations have focused significant resources towards these goals. Collaborative activities among these groups have resulted in a prioritized approach to conservation of the resources. The organizations involved include The Nature Conservancy, the Cleveland Museum of Natural History, the Western Reserve Land Conservancy and the Ohio Wetlands Foundation. The Geauga Park District also has holdings that protect streams and wetlands in the watershed. The dam on the Grand River forming Lake Estabrook was removed in 2009. Additional funding may come available for agricultural conservation practices through provisions in the Farm Bill for buffer strips, wetlands and other land conservation practices.

Where can I learn more?

The Ohio EPA report containing the findings of the watershed survey, as well as general information on TMDLs, water quality standards, 208 planning, permitting and other Ohio EPA programs, is available at http://epa.ohio.gov/dsw/tmdl/index.aspx.

The Grand River (upper) watershed draft TMDL report was available for public review from September 18 through October 18, 2012. The final report was approved by U.S. EPA on April 10, 2013. The report is available at http://epa.ohio.gov/dsw/tmdl/GrandRiver.aspx.

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