

## Ottawa River (Lima Area) 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.

### 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 Ottawa River (Lima area) watershed?

A **watershed** is the land area that drains into a body of water. The Ottawa River (Lima area) watershed is located in northwest Ohio in Allen, Putnam and Hardin counties. Small portions of the watershed extend into Hancock and Auglaize counties as well. The watershed drains 365 square miles and flows into the Auglaize River north of Lima, Ohio. The watershed is primarily cultivated cropland with 18.9 percent being developed. The major municipality in the watershed is the City of Lima. Smaller municipalities include Kalida, Columbus Grove, Elida and Ada.



The city of Lima obtains its drinking water from the Ottawa River and Lost Creek, providing drinking water to approximately 39,000 people. The river has a long history of industrial and municipal uses that had a negatively impact on the river. In the first half of the 20th century, the impacted area extended through the Ottawa River downstream through the Auglaize River to include a portion of the Maumee River. Through early pollution abatement efforts, by the mid-1970s impacts had contracted significantly to include only the Ottawa River, with recovery beginning to be evident near the mouth of the Ottawa. Biological communities continued a trend of significant recovery in 2010. However, these data results also clearly delineated impacted areas (and corresponding recovery through time) relative to major

pollution sources, stressors or limiting factors on the Ottawa River.

### 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 2010, 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 Ottawa River (Lima area) watershed?

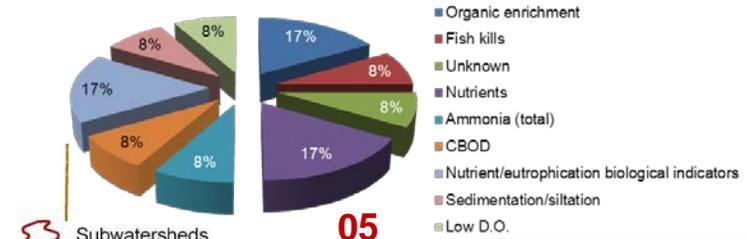
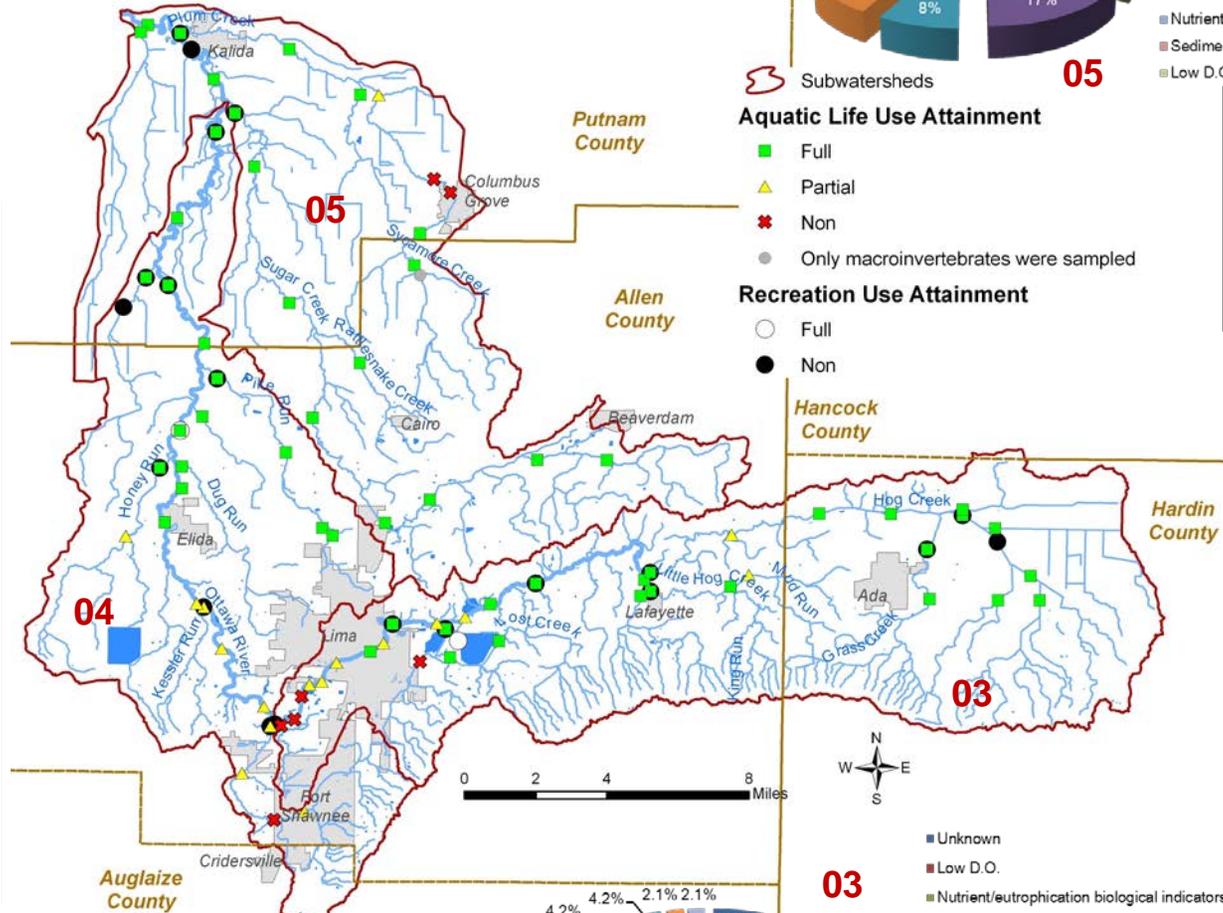
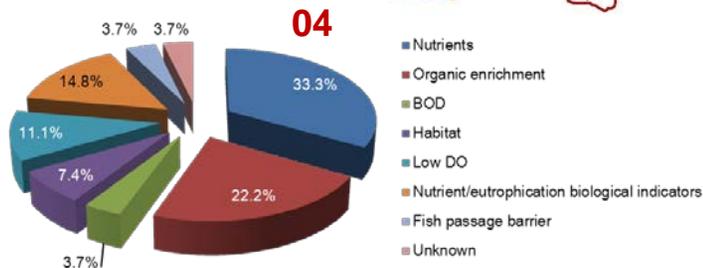
Of the 79 sites sampled in 2010, 68 percent fully met their biological goals; 23 percent met some of the goals; and 9 percent met none of the biological goals. Only 9 percent of all sites sampled met recreation-based (bacteriological) goals.

The reasons that biological goals are not met are natural conditions (flow or habitat), nutrients, total dissolved solids, organic enrichment, and direct habitat and low flow alterations. Sources of these problems include flow alteration from water diversions or dams, natural issues with flow or habitat, sewage discharges (including combined and sanitary sewer overflows), discharges from industries, and habitat modifications such as historic and current stream channelization and removing vegetation on stream banks. Sources of bacteria include agricultural land uses and failing home sewage treatment systems. More detail on these is shown on the next page.

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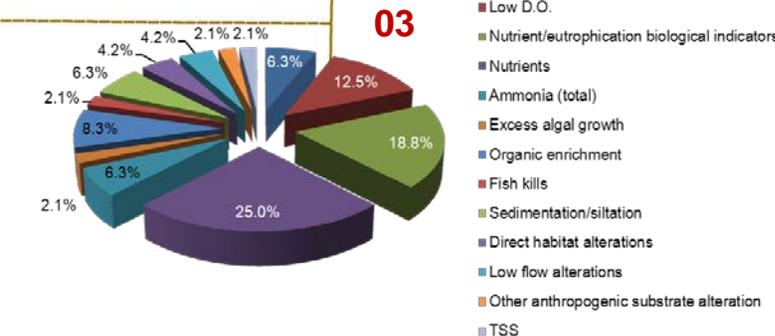
## What are the problems?

- Sources (04)**
- Municipal point source discharge
  - Industrial point source discharge
  - Sanitary sewer overflows
  - Package plant or other permitted small flow discharge
  - Unspecified domestic waste
  - Crop production with subsurface drainage
  - Channelization
  - Urban runoff/storm sewers
  - Failing home sewage treatment systems
  - Dam or impoundment
  - Unknown sources



- Sources (05)**
- Combined sewer overflows
  - Municipal point source discharge
  - Channelization
  - Crop production with subsurface drainage

- Sources (03)**
- Municipal point source discharge
  - Industrial point source discharge
  - Crop production with subsurface drainage
  - Dam or impoundment
  - Flow alterations from water diversions
  - Urban runoff/storm sewers
  - Other spill-related impacts
  - Combined sewer overflows
  - Failing home sewage treatment systems
  - Historic bottom deposits
  - Loss of riparian habitat
  - Stream bank modifications/destabilization
  - Unknown sources



# Ottawa River (Lima Area) Watershed TMDL Report

## How can the problems be fixed?

### 05

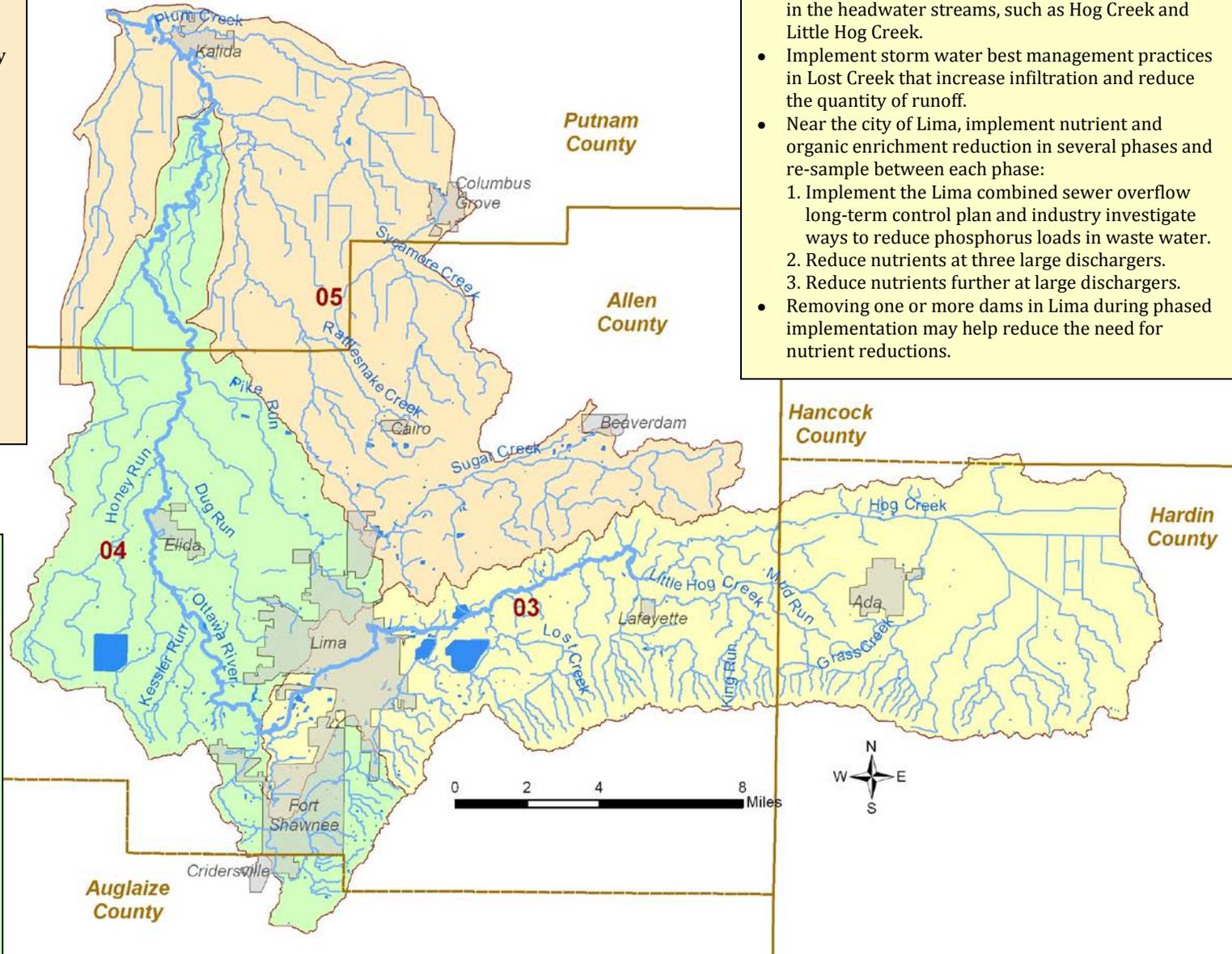
- Eliminate combined sewer overflows in Columbus Grove by complete sewer separation following the approved four-phase plan.
  - If impairment still exists following implementation, consider total phosphorus limits at the wastewater treatment plant.
- Consider the feasibility of connecting Vaughnsville to a sewer system.
- Implement agricultural best management practices in the Plum Creek subwatershed to reduce nutrients and improve habitat.

### 04

- Consider the feasibility of removing the Allentown dam.
- Implement agricultural best management practices in the Honey Run subwatershed to reduce nutrients and improve habitat.
- Implement total phosphorus limits at two wastewater treatment plants.
- Consider the feasibility of connecting Rimer and Gomer to a sewer system.
- Identify and fix failing home sewage treatment systems to reduce bacteria.

### 03

- Implement agricultural best management practices in the headwater streams, such as Hog Creek and Little Hog Creek.
- Implement storm water best management practices in Lost Creek that increase infiltration and reduce the quantity of runoff.
- Near the city of Lima, implement nutrient and organic enrichment reduction in several phases and re-sample between each phase:
  1. Implement the Lima combined sewer overflow long-term control plan and industry investigate ways to reduce phosphorus loads in waste water.
  2. Reduce nutrients at three large dischargers.
  3. Reduce nutrients further at large dischargers.
- Removing one or more dams in Lima during phased implementation may help reduce the need for nutrient reductions.



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### What are the most important “fixes” in the watershed?

- ◆ **Reduce nutrients and organic enrichment:**
  - Implement the combined sewer overflow long-term control plans in Lima and Columbus Grove.
  - Implement agricultural best management practices such as effective hydraulic buffers.
- ◆ **Restore natural habitat.**
  - Consider removing dams on the Ottawa River to improve habitat and flows during drier summer months.
  - Implement agricultural best management practices to improve habitat, such as buffers with woody vegetation.
- ◆ **Reduce bacteria entering streams.**
  - Implement the combined sewer overflow long-term control plans in Lima and Columbus Grove.
  - Identify and fix failing home sewage treatment systems.
  - Investigate the feasibility of connecting Rimer, Gomer and Vaughnsville to sewer systems.

### What actions are needed to improve water quality?

There are a variety of reasons why streams in the Ottawa River (Lima area) 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:

- Combined sewer overflows in Lima and Columbus Grove.
- Municipal and industrial dischargers contributing nutrients to impaired streams.
  - See phased implementation discussion on page 3 (yellow box).
- Agricultural areas that could reduce nutrient inputs and improve habitat along stream banks.

### 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.

The Ottawa River Coalition is an organization whose membership is comprised of “any firm, agency, organization, institution, corporation or governmental unit interested in promoting the wise management of the Ottawa River.” The Coalition has been an advocate for healthy water quality in the watershed for many years. The city of Lima has worked to improve water quality in the Ottawa River, implementing changes in point sources and combined sewer overflows.

Additional funding may become available for agricultural conservation practices through provisions in the Farm Bill for effective hydraulic buffers, wetlands and other land conservation practices.

### Where can I learn more?

The Ottawa River (Lima area) watershed draft TMDL report was available for public review from April 19 to May 20, 2013. The final report was approved by U.S. EPA on April 15, 2014. The final report is available at <http://www.epa.ohio.gov/dsw/tmdl/MaumeeRiver.aspx>. The Ohio EPA report containing the findings of the watershed survey is also available on this page under Supplemental Information.

General information on TMDLs, water quality standards, 208 planning, permitting and other Ohio EPA programs, is available at <http://www.epa.ohio.gov/dsw/SurfaceWater.aspx>.