

prevent the development of HABs in the reservoir.

Additional strategies include providing the Fire Department with maps of the source water protection area, constructing additional access points to the river for emergency responders, conducting raw water monitoring regularly upstream from the intake, coordinating with agricultural producers, and providing information about source water protection to the public.



*Plowing a winter cover crop, in preparation for Spring planting.*

Willard's drinking water source protection plan and related documents can be viewed on Willard's web site at:

[www.willardohio.us](http://www.willardohio.us)

***For questions about Willard's drinking water source protection plan, contact:***

**Scott Pifher, Superintendent of Water**  
**Matt Brooks, Assistant Superintendent of Water**  
City of Willard Water Department  
spifher@willardohio.us

***For more information about Drinking Water Source Protection, contact:***

**Ohio EPA—Northwest District Office (Bowling Green)**  
**419-352-4101**  
**or**  
**Ohio EPA—Central Office (Columbus)**  
**(614) 644-2752**

***or visit Ohio EPA's source water protection program website at:***

[Source Water Protection and Underground Injection Control \(UIC\) | Ohio Environmental Protection Agency](#)

# Protecting the City of Willard's Source of Drinking Water



***Steps your community can take to help limit the costs of water treatment and ensure a safe supply of water for the future***



**Where does the City of Willard's drinking water come from?** The City of Willard obtains drinking water from the West Branch Huron River, via an intake that pumps the water to the reservoir east of town, which holds 2.3 billion gallons of water. A map of the West Branch Huron River watershed is shown to the right.

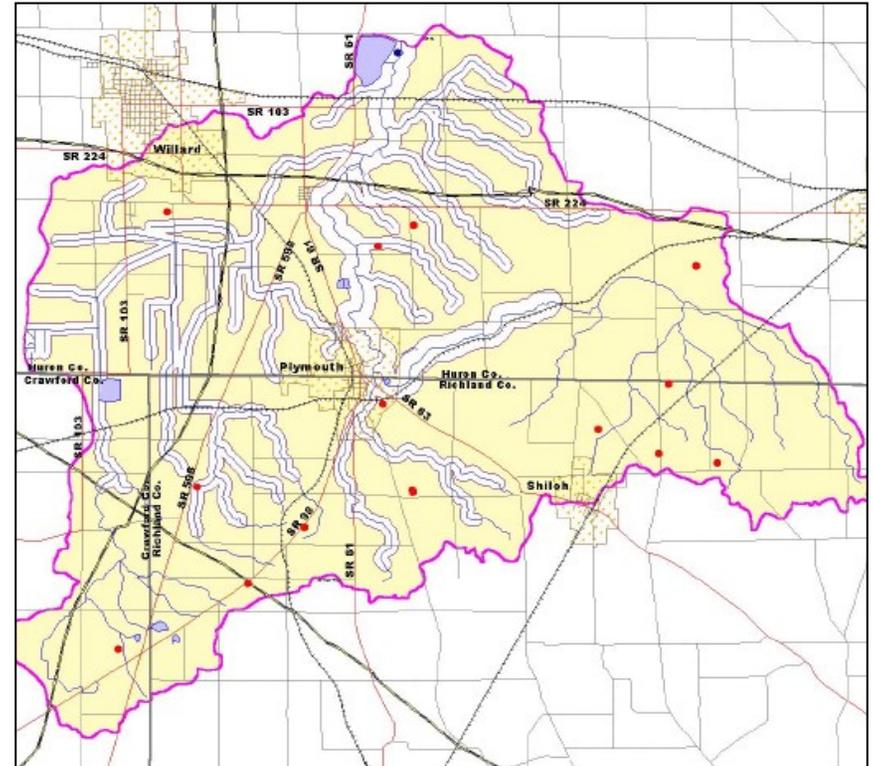
### What are the main threats to source water quality?

In an area as agricultural as Willard's source water protection area, impacts from turbidity, nutrients (nitrate and phosphate), and pesticides are common and tend to be highest in the Spring, when crops are being fertilized and runoff is greatest. The rich muck soils in Celeryville southwest of town support an especially intensive cultivation of vegetable crops, with multiple crops raised each season. The City refills the reservoir only during the winter months, after the growing season, and only after testing the water quality. As a result, the City has consistently met federal and state drinking water quality standards for the treated water it provides.

Residual agricultural runoff remains a concern, however. Its impact on water treatment processes is profound. Organic matter reacts with chlorine to produce disinfection byproducts that are carcinogenic and expensive to remove. Nitrate and phosphate from fertilizers, sludge and manure promote the development of algae (including cyanobacteria, which is known as "blue-green algae") in the relatively low-energy water of a reservoir.

Algae is a major problem for public water suppliers, as it clogs intakes and produces tastes and odors that are harmless but unpleasant, and difficult to treat. Of greater concern, some strains of cyanobacteria produce toxins that are unsafe for humans and animals to drink or wash in, even at very low concentrations. Removing taste and odor compounds and cyanobacterial toxins is very costly.

The Willard reservoir experienced a brief hazardous algal bloom during the late summer of 2014, which fortunately did not affect the drinking water, but raised concerns about the levels of nutrients that might be accumulating in the reservoir. For this reason, reducing agricultural runoff in the watershed is considered a high priority for source water protection.



**Source Water Protection Area for the City of Willard.** *The white area surrounding the main stem and tributaries is the "corridor management zone", the area of focus for protective activities.*

Additional, lower-priority concerns are underperforming wastewater treatment plants discharging upstream from the intake and the potential for a spill or release from trains crossing the West Branch Huron River on the CSX line.

### How to protect Willard's source water quality?

Protecting the reservoir from hazardous algal blooms requires careful observation and sophisticated sampling for cyanobacteria and their toxins, and following Ohio EPA's guidelines for responding to a HAB if detected. The water plant has recently acquired additional equipment and training for this purpose. Also, the City will promote the efforts of Soil and Water Conservation District staff to reduce agricultural runoff. Nutrients in the source water are necessary for HABs, so keeping them on the fields and out of the West Branch Huron River should help