The Vermillion River Watershed encompasses 335 square miles, including portions of two counties and all or part of 20 cities, towns, and townships. The main stem of the river begins in southeastern Scott County in New Market Township, flows east through central Dakota County, passes over a waterfall in the City of Hastings, and then discharges to the Mississippi River, both through a north-flowing outlet near the City of Hastings and a south- flowing outlet near the City of Red Wing, Minnesota.

January 2015

(Continued from front)
The western half of Lake Alimagnet is in Burnsville, and the eastern half in Apple Valley. Both cities will be working on solutions to the pollution problems in the lake.

Priority area for restoration
Based on pollutant modeling, the largest nutrient loading to Lake Alimagnet is coming from the northern-most direct drainage area. (See map on the inside pages showing all drainage areas.)

The biggest challenges
The area surrounding Lake Alimagnet is completely developed. Practices that reduce phosphorus in runoff take up space – and with little room to spare, creative strategies and practices will be needed to meet water quality goals.

Another challenge is that stormwater runoff from the past has left phosphorus within the lake itself. The study estimates that 58 percent of the phosphorus in Lake Alimagnet comes from internal loads held by sediments, aquatic plants, or in the water column.

Water quality improvement underway
Burnsville and Apple Valley developed a lake management plan for Alimagnet in 2005. The cities, Alimagnet Lake Association, and other partners have worked to remove rough fish and curly leaf pondweed, dredged stormwater ponds that drain to the lake, and installed a winter aeration system. The statewide ban on phosphorus in fertilizer also helped reduce the pollutant loading.

Reducing pollutant loads
The WRAPS study estimates pollutant load reductions that will improve water quality enough to meet state standards. Each city with a state municipal separate storm sewer system (MS4) permit will receive a waste load allocation – a pollutant load reduction the city will work to achieve.

The Cities of Burnsville and Apple Valley are both given a waste load allocation for Lake Alimagnet. Burnsville's portion of the reduction is 25.6 pounds of phosphorus a year. The WRAPS will identify strategies to reduce phosphorus loads to Lake Alimagnet and the VRWJPO will work to help the cities achieve the reduction.

VERMILLION RIVER WATERSHED JOINT POWERS BOARD

Commissioner Mike Slavik, (Dakota County)

Commissioner Mary Liz Holberg, (Dakota County)

Commissioner Tom Wolf, (Scott County)

Vermillion River Watershed Joint Powers Organization
14955 Galaxie Avenue
Apple Valley, MN 55124
www.vermillionriverwatershed.org
952-891-7000

Why should we care about impaired waters?

Communities benefit if impaired waters are restored to a condition that is fishable, swimmable, and supports healthy aquatic life.

- Rivers and wetlands reduce the effects of flood or drought on urban and rural property.
- Water resources support many kinds of life. These living things break down wastes, prevent soil erosion, reduce pests, pollinate plants, serve as food, or otherwise benefit human populations.
- Clean rivers and lakes increase property values, boost a community's economic status, and attract recreational users and businesses.
- Clean water resources are beautiful, attract wildlife, support healthy outdoor recreation, and improve the quality of life.

For more information about:

- **The Vermillion River Watershed**, visit www.vermillionriverwatershed.org
- **Impaired waters**, go to the MPCA website at www.pca.state.mn.us, search "impaired waters"
- **E-mail notifications of events** or subscriptions to the VRWJPO newsletter, send an e-mail to water@co.dakota.mn.us

Vermillion River watershed reflecting life

Frequently Asked Questions

Lake Alimagnet,
Photo: Great River Greening

Impaired Waters in the City of Burnsville and the Watershed Restoration and Protection Strategy (WRAPS)

Impaired waters

Portions of the Vermillion River, its tributaries, and lakes in the Vermillion River Watershed are listed as "impaired" by the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) under the federal Clean Water Act.

Impaired waters are rivers, lakes, or streams that **do not meet one or more state water-quality standards** and are considered too polluted for their designated uses. Designated uses for water bodies can include consumption (drinking water, eating fish); aquatic recreation (swimming or canoeing); and aquatic life (living conditions for fish, insects, and other aquatic species).

Watershed Restoration and Protection Strategy

The Vermillion River Watershed Joint Powers Organization (VRWJPO) worked to help identify pollution sources and stresses causing these impairments. The VRWJPO and partners are creating a Watershed Restoration and Protection Strategy (WRAPS) to restore impaired waters and protect waters from becoming impaired.

In developing the WRAPS, the VRWJPO is consulting with people in the City of Burnsville to identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws, be practical and cost-effective, and be eligible for grant funding.

This FAQ describes the impaired water in the City of Burnsville within the Vermillion River Watershed, factors that affect water quality in the area, and general information about pollutant loading.

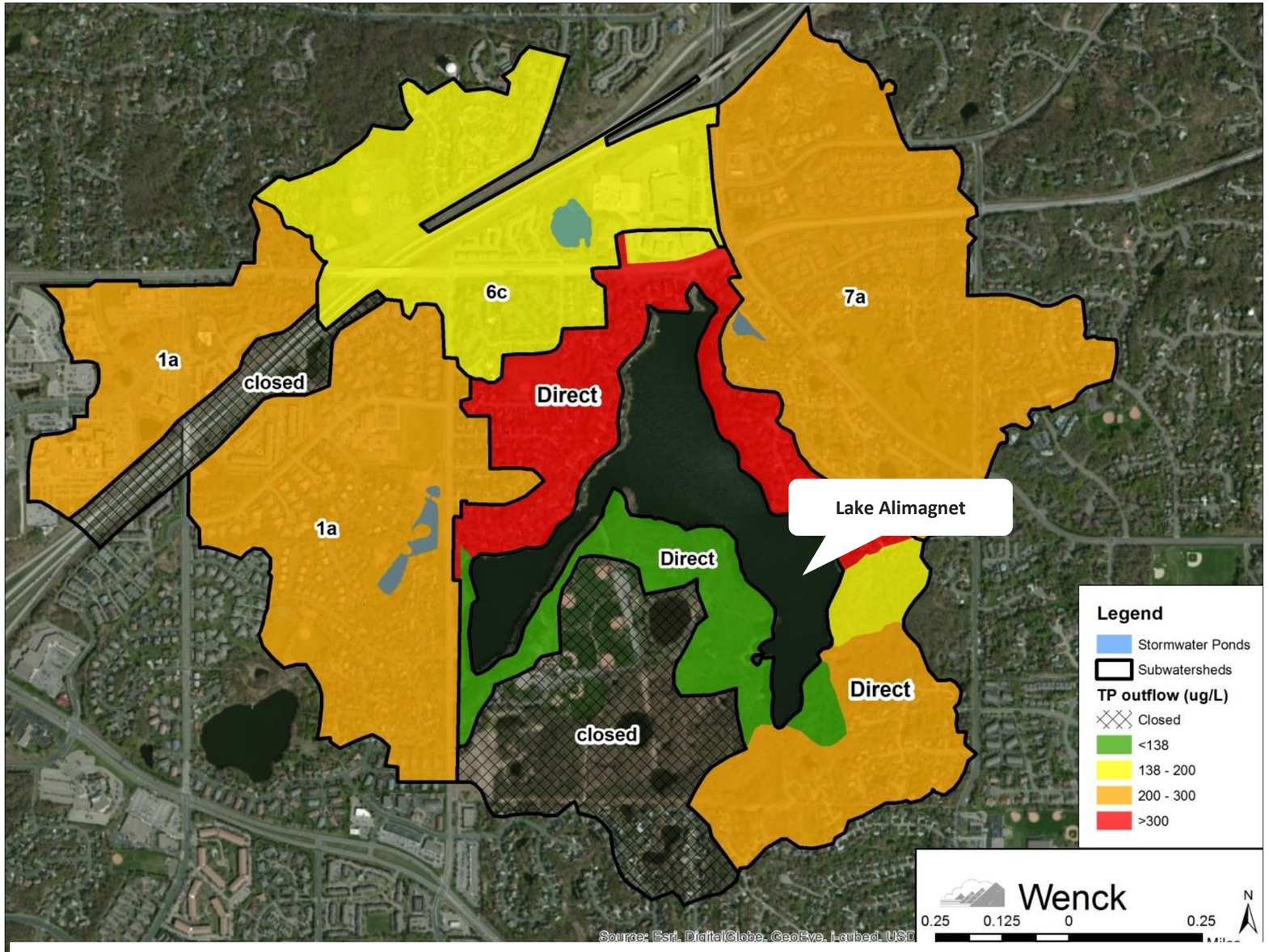
City of Burnsville impaired waters

The City of Burnsville is only partly located within the Vermillion River Watershed. In the Vermillion River Watershed, Lake Alimagnet is Burnsville's only impaired water resource. However, the City has had substantial experience in dealing with impaired waters located in the Black Dog Watershed.

The Black Dog Watershed Management Organization, which covers the majority of Burnsville, has studied and prepared plans for Keller and Crystal Lakes. Both lakes are listed as impaired for nutrients (primarily phosphorus), and work is underway to restore them.

(Continued on the back)

Water quality impairment in the City of Burnsville within the Vermillion River Watershed

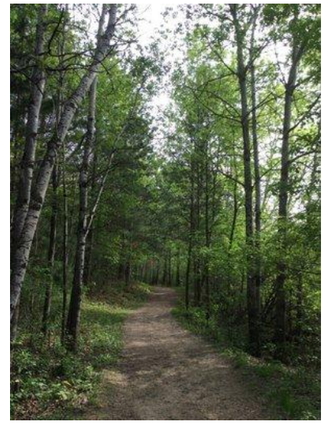


Map shows areas with the highest total phosphorus concentrations discharging to Lake Alimagnet

The map shows subwatersheds (identified drainage areas) around Lake Alimagnet. Part of the WRAPS study is focused on identifying source areas for pollutants.

Stormwater containing phosphorus comes from areas with direct drainage to the lake and areas that bring stormwater to the lake indirectly (through pipes, for example). However, some direct drainage areas bring higher total phosphorus concentrations into Lake Alimagnet than others. The northern-most drainage area (shown in red) is estimated to have the highest total phosphorus concentrations. The southern direct drainage area (shown in green) is estimated to have the least total phosphorus concentrations.

This is because the southern drainage area is primarily park land. It is vegetated, and trees and plants filter stormwater and take up phosphorus. The park also has less impervious surface, such as roads and parking lots. Paved surfaces move stormwater pollutants to water resources much faster than vegetated surfaces do.



Lakeside hiking trail

Impairment in Lake Alimagnet

Nutrient impairment – Shallow lakes in highly developed areas are often listed for nutrient impairment. Phosphorus (the primary nutrient of concern) is a naturally occurring element needed for plant growth. People use phosphorus in fertilizers, detergents, water softeners, and drugs.

Stormwater runoff brings phosphorus compounds from the surrounding developed urban areas to the lake. Lawn, garden, and plant waste contain phosphorus that washes or blows into the lake. Excessive nutrients launch a cycle of deterioration in lakes.

Plants overgrow, die off, release nutrients, promote more growth, and increase turbidity, oxygen depletion, and algae blooms. As the cycle continues, the lake can become clogged with weeds, covered with algae, and without enough oxygen to support fish or macroinvertebrates.

Because phosphorus has been running off during a long period of growth and development, many lakes have stored in-lake phosphorus. The phosphorus can be released through different physical and chemical processes that occur naturally in the lake.