

# Willow Creek

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**ENVIRONMENTAL SERVICES**

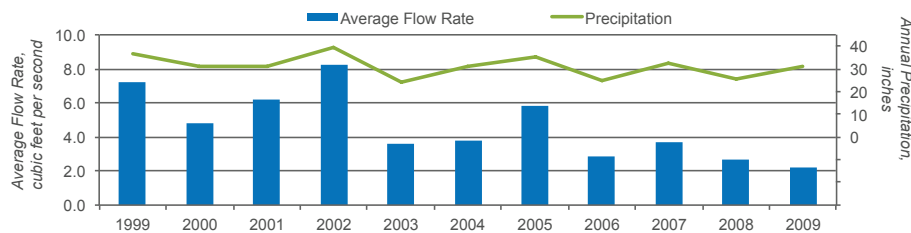
**Willow Creek** is located in the southern metropolitan area. It begins at Lee and Keller lakes, and runs through a stormsewer system and Sunset Pond, eventually descending a bluff and flowing through an underground culvert near the Kraemer Quarry before entering the Minnesota River.

## Flow

Stream flow, or the rate of water flowing in a stream, affects aquatic life and the ecosystem. High flows can lead to flooding and erosion, and transport pollutants.

Willow Creek flows year-round due to groundwater inflow and constant discharge from Sunset Pond. Its flow is also influenced by how much rain or snow has fallen in any given year. From 2003 to 2009, the average flow in Willow Creek was 3.5 cubic feet-per-second. At that rate, it would take the creek nearly 74 days to fill the Target Center in Minneapolis.

**Willow Creek Annual Flows and Precipitation**



## Chloride

Chloride, one component of salt, is typically used for winter road, parking lot, and sidewalk maintenance and home water softening.

Willow Creek's chloride concentration was the highest of the streams monitored by MCES in the Minnesota River basin, reflecting the highly developed, urban nature of the watershed.

## Sediment

Sediment from poorly-managed construction sites, farm fields, or eroded stream banks and gullies can decrease the light available in streams and harm aquatic life. Another term for sediment is "total suspended solids."

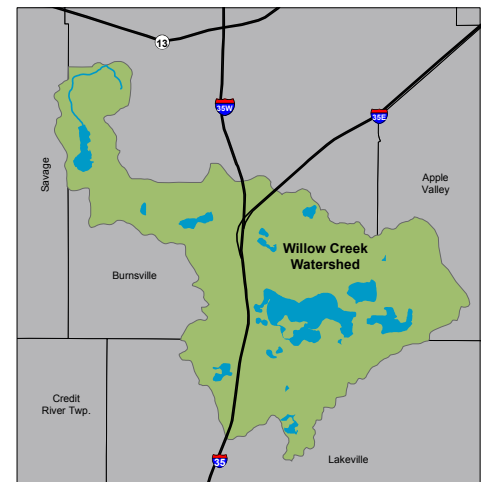
Willow Creek carried an average of 425,362 pounds of sediment into the Minnesota River each year (enough to fill 13 15-ton dump trucks), which put it among the lowest of the streams in the basin monitored by MCES.

## Nutrients

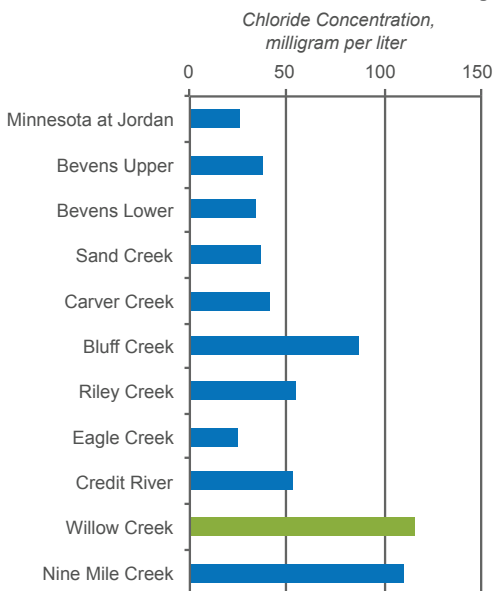
Nutrients, like nitrogen and phosphorus, are necessary for stream health. However, elevated nutrient levels, caused by materials like fertilizers, animal manure, pet waste or grass clippings, can cause excessive algae growth and harm aquatic wildlife, insects and fish.

## FAST FACTS

- Major river basin:** Minnesota River
- Water source:** Surface water runoff, lake and pond outflow, groundwater
- Length:** 1.8 miles
- Watershed area:** 13.2 square miles
- Watershed land use:** Grassland, open water, bluff land, urban areas
- Cooperator organizations:** Lower Minnesota River Watershed District, Dakota County Soil and Water Conservation District
- Years monitored:** 1999 to 2009, when the monitoring station was removed due to lack of funding



**Median Chloride Concentrations in the Minnesota River and Tributary Streams, 2003–2012**



Willow Creek had some of the lowest concentrations of nitrogen (measured as nitrate) and phosphorus in the Minnesota River basin streams monitored by MCES.

**Preserving our Creeks**

The Black Dog Watershed Management Organization is the local governing body responsible for managing the Willow Creek watershed. They partner with private landowners, cities, Dakota County Soil and Water Conservation District, and others to complete various improvement projects.

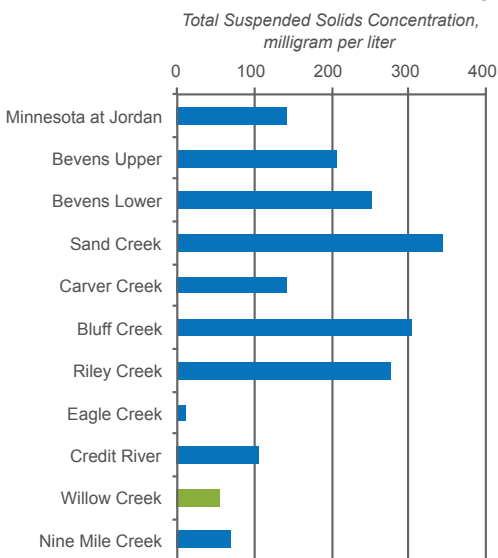
**Is the Stream Improving?**

Analysis and computer modeling of 2005 to 2009 data indicate that Willow Creek’s water quality has improved since sediment and nitrate levels have decreased. The computer model quality controls for phosphorus levels were too low to designate whether the stream has “improved” or “declined.”

**Protecting the Region’s Water Resources**

This work supports the regional policies established in the Metropolitan Council’s Thrive MSP 2040 and Water Resources Policy Plan to collaborate with partners to promote the long-term sustainability and health of the region’s water resources, including surface water, wastewater and water supply.

**Median Sediment Concentrations in the Minnesota River and Tributary Streams, 2003–2012**



**For more information**

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Visit [www.metrocouncil.org/streams](http://www.metrocouncil.org/streams) for the full results of the Comprehensive Water Quality Assessment of Select Metropolitan Area Streams.