



## Capital Improvement Project



# Farmington: South Creek (Flagstaff) Stream Habitat Restoration

## Restoring South Creek helps achieve Lake Marion Greenway goals

The project consists of restoring a reach of South Creek and a tributary on a parcel owned by Dakota County. The reach is within the planned Lake Marion Greenway, a publicly owned corridor, between the cities of Lakeville and Farmington.

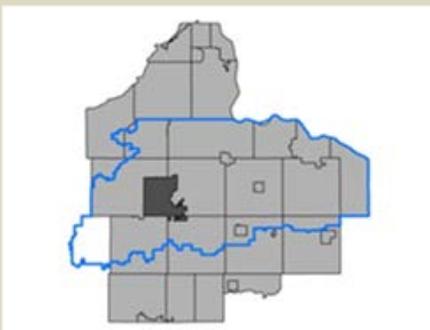
A project completed cooperatively by:

- Dakota County
- Minnesota Department of Natural Resources
- Vermillion River Watershed Joint Powers Organization

The stream habitat restoration took place on South Creek extending approximately 1,400 feet downstream of Flagstaff Avenue, as well as on a small tributary. The parcel lies between Farmington and Lakeville within the planned Lake Marion Greenway, a protected and publicly owned corridor that provides habitat, benefits to water quality, recreation, and transportation. The project helps achieve habitat, water quality, and recreation goals of the greenway and sets a standard for future greenway development.

The VRWJPO identified stream habitat and aquatic biota problems in various studies, monitoring, assessments, and the Minnesota Pollution Control Agency's Watershed Restoration and Protection Strategy (WRAPS) process. The channel had significant downfalls and obstructions, was over-widened and shallow, had streambank erosion, and provided limited habitat for aquatic biota.

### Location



The 24-acre parcel was purchased through Dakota County's Land Conservation Program in 2016.

The project restored the stream reach by removing channel obstructions, narrowing the channel, stabilizing banks to prevent further erosion, and introducing multiple types of in-stream habitat features including: rootwads, stream barbs, brush mattresses, rock veins, cover boulders, stream cobble, a backwater pool, and tree pins. These restoration efforts improve habitat and decrease the amount of sediments in the channel.



After

Stream widening over time, resulted in a sand and fine sediment laden channel. This combined with stormwater runoff from upstream land uses, poor quality riparian vegetation, and channel obstructions allowed for bank erosion to occur. With a widened stream, velocities slowed resulting in the filling and covering of vital aquatic habitats making this a high priority site for restoration.



#### Vermillion River Watershed Joint Powers Organization

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The Vermillion River is a vital natural resource that is important to public health and recreation, as well as to preserving unique wildlife habitats. It flows from New Market Township in Scott County, through residential and agricultural areas in central Dakota County, and cascades into a 100-foot ravine before it enters the Mississippi River near the Cities of Hastings and Red Wing, Minnesota. Throughout its journey, the river reflects urban and rural life within its 335-square-mile watershed.

#### Problem:

- Over-widened channel
- Stream downfalls and obstructions
- Insufficient stream habitat
- Lack of dissolved oxygen
- Streambank erosion
- Lack of native riparian vegetation

#### Actions:

- Remove downfalls and channel obstructions
- Narrow the channel to increase stream velocity
- Stabilize banks to prevent further erosion
- Install numerous habitat features for fish and macroinvertebrates
- Provide fishing access areas for recreational users and the planned Greenway

#### Benefits:

- Improved quantity, quality, and diversity of habitats for aquatic biota
- A narrower channel can more easily move sediment, resulting in deeper pools, better channel substrate, adequate cover, and more areas for fish to spawn
- Added habitat features provide cooler temperatures and improved dissolved oxygen concentrations
- Improvements to the channel and its habitat make it easier to fish the stream
- Reduces an estimated 1.2 tons of sediment and 0.24 pounds of phosphorus each year in South Creek and the Vermillion River

#### Costs and contributions:

- Vermillion River Watershed: \$52,546.75 cash match and in-kind
- Dakota County: Land ownership, in-kind invasive plant removal, and seeding
- Minnesota Department of Natural Resources Conservation Partner's Legacy (CPL) grant: \$257,763.39



A grant from the Clean Water Fund, one of four funds established by the Clean Water, Land & Legacy Amendment, supported this project.