



Capital Improvement Project

Lakeville: Avonlea Development Wetland and Stream Restoration



Restoration of a portion of Middle Creek and a seven-acre wetland in the first phase of Mattamy Homes' Avonlea development in Lakeville will reduce erosion, filter out sediment and other pollutants, increase resilience to large storm events and flooding, provide wildlife habitat, and offer beneficial and sustainable amenities for Avonlea residents.

A project completed cooperatively by:

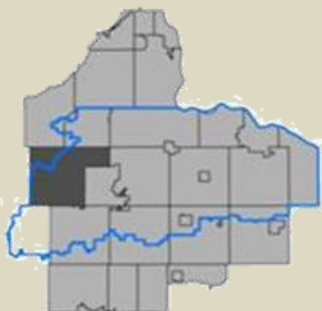
- Vermillion River Watershed Joint Powers Organization
- City of Lakeville
- Mattamy Homes

Building clean water into the landscape

Mattamy Homes envisions its 470-acre Avonlea residential development in Lakeville as a community surrounded and unified by parks, open space, natural corridors, and walking/biking trails. In the first phase of the 8-10 year Avonlea development process, the City of Lakeville and the Vermillion River Watershed Joint Powers Organization (VRWJPO) saw an opportunity to align water resource improvement goals with Mattamy's vision.

Restoration of a seven-acre wetland on the Avonlea site and a half-mile section of Middle Creek (a tributary to the Vermillion River) were proposed. This portion of Middle Creek was straightened, eroded, unstable, and didn't provide a good connection to its floodplain. The restored stream reduces erosion, keeping an estimated 30-50 tons of sediment per year out of Middle Creek. The restored wetland provides filtration of pollutants, stormwater storage, wildlife habitat, and an amenity for Avonlea residents.

Location



City of Lakeville, Minn.
Cedar Ave. between 179th
and 190th St.



Artist rendering of the Avonlea development phases showing Middle Creek along the lower portion of the illustration.



The Vermillion River Watershed Restoration and Protection Strategy (WRAPS) recommends stormwater retention and wetland restoration to improve water quality in Middle Creek. The Avonlea wetland and stream restoration projects achieve substantial pollutant reductions – and improve livability and sustainability for residents.



Vermillion River Watershed Joint Powers Organization

14955 Galaxie Avenue
Apple Valley, MN 55124
www.dakotacounty.us
952-891-7000

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.

September 2016

Problem:

- ❑ The portion of Middle Creek within the 470-acre Mattamy Homes Avonlea site was eroded and unstable, causing sediment loading to Middle Creek and the river.
- ❑ Middle Creek was not well-connected to the floodplain at this location, making it less resilient to large storms.
- ❑ Parts of Middle Creek were straightened in the past, which allows stormwater to move too rapidly downstream.
- ❑ A former wetland area on the site was drained in the past, eliminating stormwater storage, pollutant filtering, and wildlife habitat benefits.

Actions:

- ❑ Graded, re-established, and stabilized approximately a half-mile of eroded Middle Creek streambank
- ❑ Restored Middle Creek's connection to the floodplain, ensuring sufficient stormwater storage and resilience to high water and heavy rains
- ❑ Restored the wetland by grading and seeding the area

Benefits:

- ❑ Reduces sediment from Middle Creek by an estimated 30-50 tons/year and from the wetland by 21 tons/year
- ❑ Reduces phosphorus from Middle Creek by 30-50 lbs./year and from the wetland by 88 lbs./year
- ❑ Increases stormwater storage, connection of Middle Creek to the floodplain, and resilience to high water
- ❑ Enhances wildlife habitat
- ❑ Establishes attractive and sustainable natural features in the landscape, which improve livability

Costs and contributions:

- ❑ Vermillion River Watershed: \$186,456 for the stream restoration, \$21,468 for the wetland restoration
- ❑ Mattamy Homes: \$21,468 for wetland restoration plus the costs of design and permitting for the wetland and stream restoration projects
- ❑ City of Lakeville: \$102,000 for 18.51-acre land purchase plus construction oversight and long-term maintenance