



## Capital Improvement Project Lakeville: Middle Creek at Highview Avenue Channel Stabilization Project



### Reducing Erosion Results in a Healthier Middle Creek

Middle Creek, in the heart of the developing fringe of Lakeville, had seen better days. Previous land use practices, channel straightening, and excess stormwater runoff have resulted in a stream with eroding banks and channel bottom that has eroded and deepened. With development occurring adjacent to Middle Creek and its tributary, and a corridor along the Creek and tributary now owned by the City of Lakeville, the changing land use provided an opportunity to improve the stream channel conditions.

Addressing eroding banks and an eroding and deepening channel bottom will reduce the amount of in-stream sediment and improve the ecological health of Middle Creek and its tributary

The first step in the process was to identify trees along Middle Creek and the tributary for removal. Currently, the channel corridor is overgrown with poor tree species leaving very little ground cover to stabilize the banks of the channel. Trees were selectively removed, leaving only those that provided ecological and bank stabilization benefits, resulting in additional sunlight reaching the understory.

Bank sloping and stabilization measures were installed in Middle Creek and its tributary to reduce the amount erosion occurring on the banks. Some bends were added back into the previously straightened channel to promote natural stream channel processes. Rock structures were also installed in the bottom and sides of the channel that will prevent further erosion and deepening of the channel bottom.

The results are an improved Middle Creek and tributary that erode less, sending less sediment downstream and growing into an ecologically healthier stream. With greater access to the stream through the project area and nearby City park land, an added benefit is a more enjoyable recreational stream corridor.

### Vermillion River Watershed Joint Powers Organization

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A variety of bank and channel bottom stabilization measures will result in significantly less erosion and cleaner water



#### Problem:

- Previous land use practices, channel straightening, and excess stormwater runoff resulted in eroding banks and an eroding and deepening channel bottom
- Sediments released due to erosion result in poor ecological stream health

#### Actions:

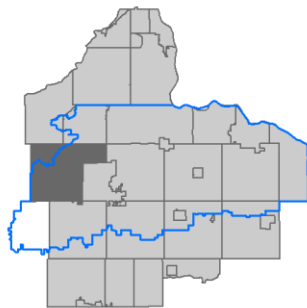
- Poor quality trees were removed to provide sunlight to the understory
- Banks were gently sloped and stabilized
- Bends were added back into the channel where possible
- Rock structures were installed in the bottom and sides of the channel to stabilize slopes and protect nearby infrastructure
- Native plant, trees, and shrubs were planted

#### Benefits:

- Banks will erode significantly less as a result of the sloping and stabilization
- The channel will not continue to erode and deepen
- In-stream habitat will be improved as a result of less erosion and sediment deposition
- Reduced total suspended solids (sediment) loss by 63 tons/year and total phosphorus by 38 lbs./year
- Provides an improved recreational stream corridor for residents and park users

#### Costs and contributions:

- Vermillion River Watershed Joint Powers Organization: \$45,413 in cash match, design assistance, and construction oversight
- City of Lakeville: \$116,222 in cash match, project design, and construction oversight
- Clean Water Fund: \$374,587 in grant funding



Lakeville, MN  
North of 185<sup>th</sup> St. and east of Highview Avenue.

A project completed cooperatively by:

- Vermillion River Watershed Joint Powers Organization
- City of Lakeville
- Clean Water Fund Grant

A grant from the Clean Water Fund, one of four funds established by the Clean Water, Land & Legacy Amendment, supported this project. [Clean Water Stories](#) can be found on the Minnesota Board of Water and Soil Resources website.

