



## Capital Improvement Project Lakeville: Stormwater Hydrodynamic Separator



Hydrodynamic Separator Illustration  
Courtesy of Hydro-International

A hydrodynamic separator is a structural practice that can remove sediment from stormwater using cyclonic and sediment settling action to improve water quality.

### Vermillion River Watershed Joint Powers Organization

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### Protecting South Creek

South Creek is one of the highest quality sections of trout stream within the Vermillion River Watershed, producing some of the largest, trophy-sized brown trout and a significant amount of young-of-year fish. Because of this, South Creek is a significantly valuable resource within the Watershed and is recognized by the VRWJPO, local communities, and recreationalists alike.

An existing stormwater pipe adjacent to 210th St. discharges sediment-laden stormwater into South Creek and the Vermillion River. By working together, the City of Lakeville and the Vermillion River Watershed Joint Powers Organization aim to reduce that sediment load in an effort to reduce the primary stressor affecting South Creek and the Vermillion River's fish and macroinvertebrate populations.

A hydrodynamic separator, a device that uses a combination of cyclonic and sediment-settling action to remove sediment from the stormwater will be installed near the outlet of the existing stormwater pipe to reduce the sediment load reaching South Creek by an estimated 4.2 tons/year.

Through this project, progress will be made towards the total suspended solids (TSS) Total Maximum Daily Load (TMDL) reductions for the Vermillion River. Reduced TSS load to South Creek and improved stream habitat for both South Creek and the Vermillion River are also anticipated.

### Problem:

- High amounts of sediment entering South Creek negatively affecting fish and macroinvertebrate populations
- Total Suspended Solids TMDL reductions required for Vermillion River to meet water quality standards

### Actions:

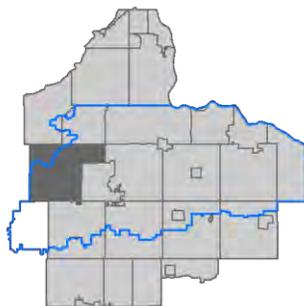
- A hydrodynamic separator was installed in an existing stormwater pipe to remove sediment

### Benefits:

- Reduces total suspended solids and phosphorus by 4.2 tons/year and 30 lbs./year
- Reduces the primary stressors to the fish and macroinvertebrate communities within South Creek
- Habitat improvements within South Creek and the Vermillion River where sediment is responsible for covering or filling of critical refuge and spawning areas
- Protection of a designated trout stream, trophy brown trout population, and young-of-year trout

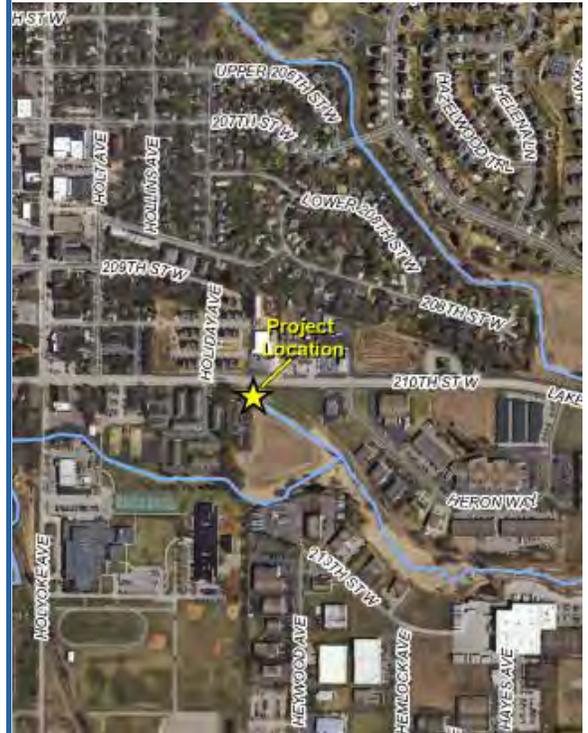
### Costs and contributions:

- Vermillion River Watershed Joint Powers Organization: Estimated \$79,000 cash match
- City of Lakeville: \$48,109 in cash match
- Clean Water Fund: Estimated \$144,000 grant



City of Lakeville, MN  
off Lakeville Blvd. east of  
Holiday Ave.

Stormwater pipe  
location where  
separator will be  
installed to treat 48  
acres of drainage



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.

