

**PROGRAM: ACT 1**

**Scene 1**.....  
Water quality monitoring

**Scene 2**.....  
Public meetings

**Scene 3**.....  
Technical Advisory Group meetings

**Scene 4**.....  
Analyzing the data

**Intermission**

**Scene 5**.....  
Writing the document

**Scene 6**.....  
MPCA posting of 30-day public notice

**Scene 7**.....  
Consideration of public comments

**Scene 8**.....  
EPA-approved TMDL plan

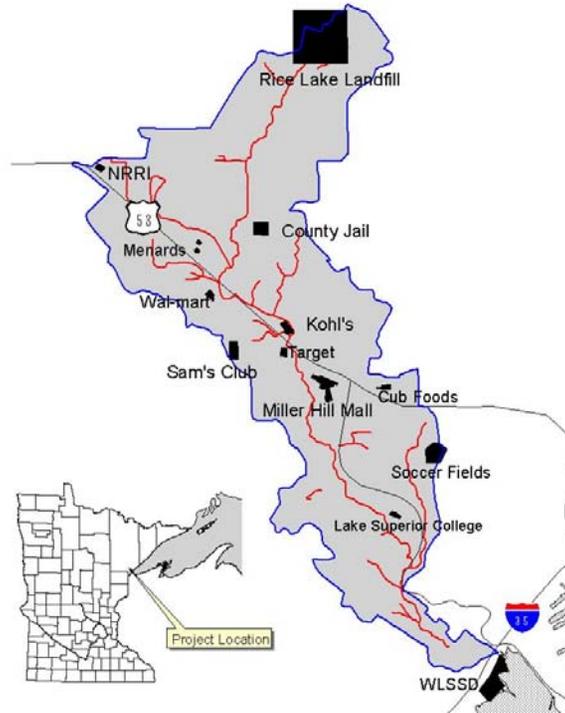
*Coming Soon -*

*Act 2:*

*Implementing the  
TMDL Plan*

*The South St. Louis Soil  
and Water Conservation  
District Presents:*

**MILLER CREEK WATERSHED**



**The Miller  
Creek Total  
Maximum  
Daily Load  
(TMDL) Plan**



**South St. Louis**  
SOIL & WATER CONSERVATION DISTRICT

## TMDL SOUNDS INTIMIDATING— WHAT THE HECK DOES IT MEAN?

A **Total Maximum Daily Load** is the maximum amount of a pollutant that a stream can absorb before that pollutant starts degrading water quality, or, the stream's "Designated Uses." **Designated Uses** are those functions provided by a stream that are deemed most valuable. Recreation, navigation and drinking water source are three types of designated uses. Every stream in Minnesota has been assigned designated uses and each of these uses has standards for different types of pollutants. For example, a waterway that has "swimming" as a designated use has very strict fecal coliform limits so that swimmers do not get sick. Some streams have designated uses that support animals instead humans—Miller Creek is one of them—it has the potential to provide excellent habitat for Brook Trout, a native MN fish. Because of this, humans have determined that the most important function of Miller Creek is providing habitat for trout. Brook Trout like cold water, colder than 68 degrees, so the TMDL plan that is being done on Miller Creek is all about cooling the creek down so the trout can survive and the creek's designated use is upheld. Today, warm water that runs into the creek via runoff over hot parking lots or other means causes the creek to warm up. As a result, the trout start to get real ornery and can even get sick and die. Under the guidance of the TMDL and future implementation plans, our community can restore Miller Creek to a viable cold-water fishery.



Ornery Trout

Image source: <http://lesanimos.blogs.sapo.pt/arquivo/>

## WHY SHOULD I CARE ABOUT THIS?

If the environment, economy, and quality of life in Duluth matter to you, then TMDLs are something to care about. Sometimes referred to as "Water Clean-up Plans," TMDL studies are the first step in restoring the health of a struggling stream. Duluth has a very unique character - beauty, wildlife, fun things to do, and water...**EVERYWHERE**. This is why people live here and flock to visit here in the summer. Maintaining that character is important to Duluth's economy, and to its quality of life. Flowing through a highly impacted watershed, Miller Creek is the focus of frequent concern and study. It has been ditched and re-routed many times to accommodate development. Restoring a cold-water fishery in the heart of an urban area is something that our community can take a lot of pride in.

## WHAT CAUSES THE WATER IN THE CREEK TO HEAT UP?

Several factors can influence water temperature:

- **The amount of light hitting the water** - Clearing streamside vegetation allows more sunlight to reach the stream, warming the water.
- **Water depth** - Shallow water is warmer than deeper water.
- **How dirty or muddy the water is** - Dirty water absorbs more heat from the sun.
- **Types of land surfaces in the watershed** - Impervious surfaces, like parking lots, get very hot from the sun. Rain that lands on these hot surfaces runs right to the nearest stream causing stream temperatures to rise.

## WHAT HAPPENS ONCE THE TMDL STUDY IS DONE?

Brook Trout caught in Miller Creek, 2007.



Many dedicated people are working on TMDLs for various pollutants (temperature, sediment, pesticides) on streams all over the country. After the TMDL study is done, an **Implementation Plan** will be written as guidance for how to achieve the TMDL (i.e. how to cool the water back down to an acceptable level). The Implementation Plan might include anything from where to plant trees to new city ordinances. A TMDL does not mean more regulation—it is illegal to pollute State Waters no matter what. Rather, the TMDL study helps us to 1.) identify the extent of the pollutant under study and 2.) locate the general areas that are contributing most to the problem. Restoring the creek will involve a concerted effort between businesses and residents in the entire watershed. Fault does not lie with just one person - there are many different, and diffuse, human activities that are causing harm to the creek. Ultimately, the TMDL Plan and its associated restoration activities will lead to the delisting of Miller Creek from the State's **Impaired Waters List**. Once a water is placed in this list, the State must develop a TMDL within 15 years. **Delisting** a water body is sort of like taking an animal off the endangered species list—once something is removed, it is healthy enough to stand on its own again.