

Surface Water Monitoring

All monitored waterways exceeded Minnesota surface water quality standards for FC
100% of reaches with adequate monitoring data potentially listed as impaired

Data Collection Process

1. Collect Existing Fecal Coliform (FC) Data

The first step in determining fecal coliform reduction goals for the Blue Earth River Basin was to gather all known water quality monitoring data.

Fecal coliform data were gathered from the following sources:

- Environmental Protection Agency STORET Database
- Minnesota Pollution Control Agency Environmental Data Access website
- United State Geologic Survey
- Watonwan County Environmental Services
- Watonwan Clean Water Partnership Program
- Blue Earth SWCD
- Maple River Clean Water Partnership Program
- Martin County SWCD
- Lily and Center Creeks Clean Water Partnership Program
- Water Resources Center - Minnesota State University, Mankato
- Blue Earth Basin Implementation Framework Project
- Le Sueur River Watershed Implementation Framework Project
- Beauford Ditch Watershed Project

2. Collect New FC Samples

In 2004, fecal coliform samples were collected from eight monitoring sites in the basin to confirm current impairments.

3. Compile & Analyze Data

All known bacteria monitoring data collected over the last ten years was analyzed (1995-2004). This analysis revealed FC impairment to be common in the basin during June, July, and August.

Summary of FC Levels by Month

This table shows which months monitoring sites were impaired for FC bacteria based on 1995-2004 water quality monitoring data.

A reach is listed as impaired if one or more months exceed the Minnesota surface water quality standard.

A GM stands for Geometric Mean. This calculation measures the central tendency of a data set and minimizes the effects of extreme values

This data is based on following the 303(d) assessment guidance manual which allows pooling data over the last ten years for a given month.

Blue Earth Watershed											
Site ID	No. Samples	Apr	May	Jun	Jul	Aug	Sep	Oct			
Center Creek, 21 Ave	2000										
Blue Earth, 2450 Ave	2000										
Center Creek, 1800 St	2000										
Starbuck River, Mainline	2000										
Lily Creek, Head Falls	2000										
Blue Creek, 1010 St	2000										
Center Creek, 1547 St	2000										
Fabrizio, 1000 St	2000										
Center Creek, 1000 St	2000										
Center Creek, CSA110	2000										
Center Creek, Chicago Lake	2000										
Blue Creek, 2450 Ave	2000										
Starbuck River, Mainline	2000										
Starbuck River, CSAH 4	2000										
Blue Creek, CSAH 1-10	2000										

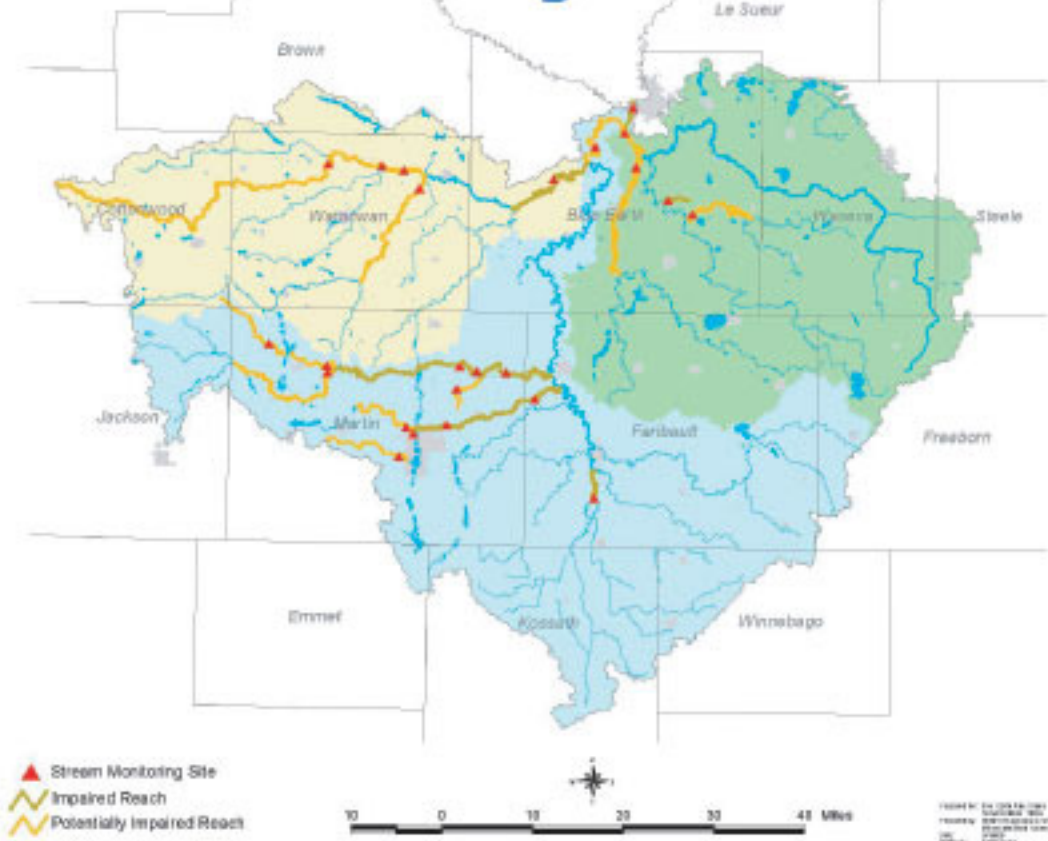
Le Sueur Watershed											
Site ID	No. Samples	Apr	May	Jun	Jul	Aug	Sep	Oct			
Beauford Ditch	2000										
Maple River, CSAH 35	2000										
Lily Creek, River	2000										
Le Sueur, Mainline (Ditch #1)	2000										

Watonwan Watershed											
Site ID	No. Samples	Apr	May	Jun	Jul	Aug	Sep	Oct			
Watonwan River, Centerline	2000										
Watonwan River, CR 4	2000										
Watonwan River, CSAH 4	2000										
Watonwan River, Mainline	2000										
Watonwan River, CR 16	2000										

Major Findings

- 1,257 samples have been collected at 31 sites in the past 10 years (1995-2004). The monitoring season is conducted between April 1 (ice out) and October 31.
- Currently 6 stream reaches are listed impaired for fecal coliform bacteria.
- Based on water quality data using MPCA impaired waters listing criteria, an estimated 14 additional reaches will be listed for FC impairments in the future.
- 100% of reaches with adequate monitoring data qualify to be listed as impaired.

Monitoring Sites



Currently FC Impaired Reaches

6 reaches

- Blue Earth River: Le Sueur River to Minnesota River
- Blue Earth River: West Branch Blue Earth River to Coon Creek
- Elm Creek: Cedar Creek to Blue Earth River
- Center Creek: Lily Creek to Blue Earth River
- Watonwan River: Perch Creek to Blue Earth River
- Little Beauford Ditch: Headwaters to Cobb River

Potentially FC Impaired Reaches

14 additional reaches

- 3 reaches - Watonwan River
- 1 reach - South Fork Watonwan River
- 1 reach - Blue Earth River
- 2 reaches - Cedar Creek
- 1 reach - Elm Creek
- 1 reach - Dutch Creek
- 1 reach - Lily Creek
- 1 reach - Le Sueur River
- 1 reach - Maple River
- 1 reach - Little Cobb River
- 1 reach - Martin County Judicial Ditch #3

Monitoring Results - Elevated Fecal Coliform Levels

This map shows the FC monitoring results at each site with adequate monitoring data. The number of FC organisms per 100 milliliters are indicated for the month with the highest FC bacteria concentrations (typically in July or August). For comparison, the dashed line on each bar shows the water quality standard of 200 organisms per 100 milliliters. As you can see, the highest monthly FC rates far exceed the water quality standard in most cases.

