

3.2 CEDAR CREEK

This report is an update to the *WATERS of Jefferson County Report – July 1, 2000 to June 30, 2001*. For additional information on the Cedar Creek Watershed, refer to the *WATERS of Jefferson County Report – July 1, 2000 to June 30, 2001* located on the CD in *Appendix I*.

Figure 13. Cedar Creek Watershed

Exhibit 5 illustrates several features of the Municipal Separate Storm Sewer System (MS4) and Sanitary Sewer Overflow (SSO) Programs in the Cedar Creek Watershed.



3.2.1 RESOURCE MANAGEMENT PROCESS

With the initial *WATERS of Jefferson County Report – Year Zero* in December of 1999, MSD has been in the process of transitioning from a programmatically driven program to one that is more water quality driven. To aid in that effort, MSD has adopted the Resource Management Process (RMP), which is shown in *Figure 1* within the Program Section of the *WATERS Report*. This process sets the foundation for water quality based decision making. The RMP is a cyclic process that allows MSD the opportunity to prioritize projects using criteria that reach beyond regulatory requirements.

3.2.1.1 Scoping

MSD is in the process of developing watershed action plans. The first watershed to undergo this effort is Beargrass Creek. The schedule for the Cedar Creek Watershed Action Plan has not been established.

3.2.1.2 Assessment

Geographic Information Systems

Land Use - The Cedar Creek Watershed has an area of approximately 11.2 square miles and contains 57.9 miles of streams. The Cedar Creek Watershed is highlighted in yellow in *Figure 13*. *Table 18* illustrates the land use percentages in the Cedar Creek Watershed.

Table 18. Cedar Creek - Land Use Percentages (1998)

Total Impervious	Undeveloped	Commercial	Parks	Public	Industrial	Residential
21.0	48.2	1.9	0.2	1.0	2.7	46.0

Monitoring

MSD has performed monitoring activities within the Cedar Creek Watershed. Below is a compilation of those activities:

Monitoring Activities

MS4 SSO **Ambient Monitoring** - MSD has one long-term monitoring sites in the Cedar Creek Watershed as part of their ambient monitoring program. Each location has a mini-monitor and a United States Geological Survey (USGS) stream flow gauge, which operate continuous node-collectors. Data is recorded intervals of 15 minutes, 24 hours per day.



Water quality data collected during this reporting period has been analyzed. The majority of the data was collected with minimonitors from the ambient monitoring sites. A summary of the water quality violations for all of Jefferson County can be found in the WATERS of Jefferson County Report – July 1, 2001 to June 30, 2002 CD located in Appendix I. *Table 19* shows a summary of the water quality violations within the Cedar Creek Watershed. 

Table 19. Summary of Water Quality Violations in the Cedar Creek Watershed – 3rd Qtr 2000 to 3rd Qtr 2001


	# of Acute DO Violations	% Acute DO Violations	# Hrs Chronic DO Violations	% Hours Chronic DO Violations	# Temperature Violations	% Temperature Violations	# pH Violations	% pH Violations
Cedar Creek at Thixton Road	83	2.3	62	1.7	0	0.0	423	11.0

MS4 **Habitat and Biological Monitoring** - During the reporting period algae and macro-invertebrates were sampled at the ambient stream monitoring locations. Algae were sampled six different times (every three days) at the ambient monitoring sites during summer months. Three-day growth rates, maximum carrying capacity, community structure, and biomass estimates were analyzed for each sample. 

MS4 **Project XL** – MSD recently completed an EPA Grant project for the Development of Pretreatment Performance Measures. The objective of this project was to develop, im-

plement and assess specific Performance Measures designed to measure the environmental impact of the Pretreatment Program in the Jeffersontown Sewershed / Chenoweth Run Watershed area. MSD has also been selected to participate in Project XL (eXcellence in Leadership) program.

With information gained from the Performance Measures, and with the regulatory flexibility provided by the Pilot Project, resources can ultimately be shifted to address the greatest environmental concerns in the watershed. MSD’s strategy is to take better information and reallocate resources with the XL program to create environmental benefits according to a specific prioritization strategy.

MSD has assembled a Stakeholder Work Group to assist in making decisions on the project. The Stakeholder Work Group includes MSD staff, a consultant, two representatives from the Kentucky Pollution Prevention Center, a state regulator, an environmentalist, and two industrial representatives. The work group began meeting in June and has held monthly meetings since. The Stakeholder Work Group has been asked to establish the pollutants of concern, evaluate the industries to assess who is an Significant Industrial User, and define the terms and conditions of agreements with Industrial Users and Non-Categorical Industrial Users. 


MS4 TMDL Development – The ambient monitoring data will also be used in the development of Total Maximum Daily Loads (TMDLs). The State is required to develop TMDLs for first priority streams within the next decade. The Cedar Creek Watershed has approximately 16 miles of second priority streams on the 1998 303(d) list for violations of the State Water Quality Standards. *Table 20* shows the impairment and pollutants of concern for the watershed. 

Table 20. Cedar Creek - 303(d) List of Waters for TMDL Development

	1998 303(d) Listing			Proposed 2002 303(d) Listing		
	Priority	Streams	Pollutant of Concern	Priority	Impaired Use	Pollutant of Concern
Cedar Creek of Floyds Fork * (mile 0.0 to 15.3)	Second	Swimming	Pathogens	Second	Swimming	Pathogens

Notes from Table 20:

* The latest available data indicates Cedar Creek at Floyds Fork now fully supports the swimming designated use based on recent field data. A request to delist this stream for pathogens will be submitted to EPA Region 4 with the 2002 303(d) Report.

Water Quality Impacts

Point Source – The Cedar Creek Watershed has fewer point source discharges than many of the watersheds within Jefferson County. Even with the 1996 construction of the Cedar Creek WTP and the subsequent elimination of ten small treatment plants, there still remains quite a few treatment plants scattered throughout the watershed. Fecal bacteria

levels in this watershed exceed recreational standards about one-fourth of the time, though some of this can be attributed to non-point source discharge such as failing septic systems and farm animal waste. *Table 21* summarizes point sources in the Cedar Creek Watershed.

Table 21. Summary of Point Sources – Cedar Creek Watershed

<i>Sanitary Sewer Overflows</i>	<i>Combined Sewer Overflows</i>	<i>Storm Water Outfalls</i>	<i>General Permittees</i>	<i>Significant Industrial Users</i>	<i>Wastewater Treatment Plants</i>
Recurring: 1 Investigated: 4 Eliminated: 0	NA	Year Sampled: 1999 Total: 286 Contaminated: 5 (.017%)	0	0	MSD Regional: 1 MSD small: 1 Private: 8

Non-Point Source - Non-point source pollution is a problem in the Cedar Creek Watershed. Nutrient levels are high in this area. Most of the nutrients originate from lawn chemicals, golf courses, small agriculture, septic tanks, and package wastewater treatment plants. Heavy silt loads from construction sites and agriculture have produced degraded streams with dramatically reduced habitat. Other non-point sources within this watershed are herbicides, pesticides and fertilizers.

3.2.1.3 Targets / Priorities

Compiling, analyzing and communicating information for watershed management should be directly related to the goals and objectives of the stakeholders. The use of indicators and targets helps stakeholders establish meaningful ways to assess whether objectives are being met or can be met in the future. Indicators are measurable or subjectively rankable quantities that provide means of evaluating ecological conditions and other management objectives. Particularly useful indicators are those that can be predicted in response to management options to support effective decision making. Targets are the values of the indicators that define desired conditions or outcomes. For example, water quality standards provide a basis for identifying levels of key ecological parameters that support protection for various uses of water.

The targets and indicators for the Cedar Creek Watershed will be identified during the development of the Cedar Creek Watershed Action Plan.

3.2.1.4 Strategies


The strategies for the Cedar Creek Watershed will be identified during the development of the Cedar Creek Watershed Action Plan.


3.2.1.5 Implementation


The following information lists the watershed-specific highlights for the CSO, SSO and MS4 Programs. For highlights that are not watershed-specific, but more programmatic in nature, refer to the Wet Weather / Water Quality Program section of the *WATERS Report*.


Projects

Water Quality Projects


SAN Birchwood Wastewater Treatment Plant Elimination – This project eliminated the Birchwood WTP and McKeena Pump Station. This project also addressed structural flooding issues in the area with a detention basin on the site of the existing Birchwood WTP. Construction of the project was completed in the 2nd Quarter of 2002. 

SAN Cedar Creek Subregional Wastewater Treatment Plant Expansion Project – The project consists of the expansion of the existing Cedar Creek WTP from 2.5 MGD to 7.5 MGD. The project is currently under construction and is scheduled to be completed in the 3rd Quarter of 2003. 

MS4 EPSC General Permit - As part of the MS4 requirement for Construction Site Runoff Controls, Jefferson County has an approved EPSC General Permit in place. Approximately 12 individuals have attended the EPSC Workshop through Jefferson County Public Schools. 

MS4 Pesticide and Herbicide Use - As a requirement of the MS4 Permit section Good Housekeeping / Pollution Prevention, Jefferson County no longer uses pesticides and herbicides. 

Education

MS4 Earth Day - KyTC was represented at Earth Day activities presented by the Louisville Zoo. Information regarding the “Adopt-A-Highway” program was distributed. Environmental Stewardship exhibits were also available for review. This activity meets a requirement of the MS4 Permit section titled Public Education / Outreach Programs. 

3.2.1.6 Evaluation

The evaluation for the Cedar Creek Watershed will be identified during the development of the Cedar Creek Watershed Action Plan.

EXHIBIT #5

Cedar Creek Watershed

Exhibit #5 may be downloaded at:

<http://www.msdlouky.org/insidemsd/waters/2002/exhibit5.pdf>  (2Mb)