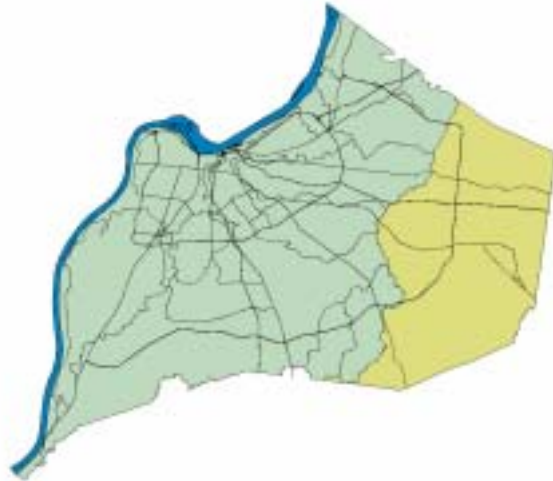


### 3.3 FLOYDS FORK

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

**Figure 14. Floyds Fork Watershed (Jefferson County Only)**

*Exhibit 6* illustrates several features of the Municipal Separate Storm Sewer System (MS4) and Sanitary Sewer Overflow (SSO) Programs in the Floyds Fork Watershed.



#### 3.3.1 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.

##### 3.3.1.1 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 Floyds Fork Watershed Action Plan has not been established. The Floyds Fork scoping phase will focus on “preventative” management techniques rather than mitigation, since the Floyds Fork Watershed is mostly rural and open space.

##### 3.3.1.2 Assessment

###### Geographic Information Systems

Land Use – The Floyds Fork is the largest watershed in Jefferson County, covering approximately 103.9 square miles and containing 673.2 stream miles. Floyds Fork also extends into Bullitt, Shelby and Spencer counties. The Floyds Fork Watershed is highlighted in yellow in *Figure 14*. *Table 22* illustrates the land use percentages in the Floyds Fork Watershed.

**Table 22. Floyds Fork - Land Use Percentages (1998)**


Total Impervious	Undeveloped	Commercial	Parks	Public	Industrial	Residential
13.0	58.6	1.1	2.9	0.6	5.1	31.7

**Monitoring**

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


**Monitoring Activities**


**MS4 SSO Ambient Monitoring** - MSD has five long-term monitoring locations in the Floyds Fork Watershed as part of their ambient monitoring program. Each location has a minimonitor and a United States Geological Survey (USGS) stream flow gauge, which operate continuous node-collectors. Data is recorded at 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 23 shows a summary of the water quality violations within the Floyds Fork Watershed. 


**Table 23. Summary of Water Quality Violations in the Floyds Fork Watershed – 3<sup>rd</sup> Qtr 2000 to 3<sup>rd</sup> 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
Chenoweth Run at Gelhaus Lane	219	7.2	308	10.1	0	0.0	60	1.6
Chenoweth Run at Ruckriegel Pky	331	8.6	464	12.1	0	0.0	0	0.0
Floyds Fork at Ash Avenue	1,072	25.2	1,862	43.7	0	0.0	19	0.4
Floyds Fork at Bardstown Road	447	19.3	1,069	46.2	0	0.0	0	0.0

**MS4 Anchorage Monitoring** – A portion of the City of Anchorage is located in the Floyds Fork Watershed. MSD is evaluating the impact of development and sewerage within the City of Anchorage. MSD has two monitoring sites within the City. The monitoring activity will be discontinued in late 2002. 

**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 are being analyzed for each sample. 

**SSO** Post-Rehabilitation Analysis – This project involved the installation of flow monitors in the Floyds Fork Watershed in order to assess the success rate of rehabilitation construction. Following completion of each rehabilitation construction project, MSD specified which basins should be monitored, analyzed the flow data, and prepared a brief report on the effectiveness of the rehabilitation effort. 

**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 Floyds Fork Watershed has approximately ten miles of streams on the 1998 303(d) list for violations of the State Water Quality Standards. See *Table 24* for the impairments and pollutants of concern for the Floyds Fork Watershed. 

**Table 24. Floyds Fork - 303(d) List of Waters for TMDL Development**

Streams	1998 303(d) Listing			Proposed 2002 303(d) Listing		
	Priority	Impaired Use	Pollutant of Concern	Priority	Impaired Use	Pollutant of Concern
<b>Chenoweth Run of Floyds Fork*</b> (mile 0.0 to 5.2)	First	Ongoing TMDL Project		First	Aquatic Life, Swimming (Under TMDL)	Nutrients, Noxious Aquatic Plants, Pathogens
<b>Chenoweth Run of Floyds Fork</b> (mile 5.3 to 9.1)				First	Swimming (Under TMDL)	Pathogens
<b>Floyds Fork of Salt River**</b> (mile 0.0 to 67.0)	First	Ongoing TMDL Project		First	Aquatic Life (Under TMDL)	Organic Enrichment/Low DO
<b>Floyds Fork of Salt River***</b> (mile 11.6 to 21.6)				First	Aquatic Life, Swimming (Under TMDL)	Pathogens, Siltation
<b>Floyds Fork of Salt River</b> (mile 24.2 to 31.2)				Second	Aquatic Life (Under TMDL)	Siltation
<b>Floyds Fork of Salt River</b> (mile 31.3 to 34.1)				First	Aquatic Life, Swimming (Under TMDL)	Siltation, Organic Enrichment/Low DO
<b>Pope Lick Creek of Floyds Fork</b> (mile 2.0 to 5.2)	First	Swimming	Pathogens	First	Swimming	Pathogens
<b>Long Run of Floyds Fork</b> (0.0 to 9.5)	First	Swimming	Pathogens	First	Swimming	Pathogens

Notes from Table 24:

\* The TMDL for nutrients was approved by EPA Region 4 in 1997. The Jeffersontown WTP was given a total phosphorus limit of 1.0 mg/L starting in November 2000. Phosphorus monitoring at the Jeffersontown WTP indicates values consistently around 0.5 mg/L. The TMDL also states that riparian zones are needed along the stream and that effective storm water management is also needed. MSD continues to collect and compile information on the stream.

\*\* The TMDL for organic enrichment/Low DO is approved. MSD has acquired a number of small WTPs throughout the watershed, which MSD now operates and maintains. The MSD Floyds Fork Regional WTP (FFWTP) became operational in the summer of 2001. Sewer lines are planned to be run from the areas currently being serviced by the small WTPs to the FFWTP. As these connections are made, the small WTPs will be taken out of service. This will improve water quality throughout the watershed because small WTPs are difficult to maintain and will work less efficiently than the new FFWTP. The FFWTP has a phosphorus limit of 1.0 mg/L, which is a significant reduction compared to the small WTPs that currently operate in the watershed. The discharge from the small WTPs generally contains 2.5 to 4.0 mg/L of phosphorus. Phosphorus is used by the algae for growth. Too much algae in the stream results in degraded water quality and low stream DO values, which can result in fish kills.

\*\*\* The latest assessment information indicates that the reach from river mile 3.7 to 7.5 fully supports the aquatic life and swimming designated uses.

Water Quality Impacts

Point Source – The Floyds Fork Watershed has a large number of point source discharges. Due to the limited availability of sanitary sewers, there are many small treatment plants scattered throughout the watershed. Fecal bacteria levels exceed recreational standards more than one-third of the time. Besides treatment plant discharge, some of this can be attributed to septic systems and animal waste from farms. Table 25 summarizes point sources in the Floyds Fork Watershed.

**Table 25. Summary of Point Sources – Floyds Fork 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: 4 Investigated: 7 Eliminated: 0	NA	Year Sampled: 1996, 1997,1999 Total: 739 Contaminated: 5 (.006%)	17	6	MSD Regional: 1 MSD small: 11 Private: 36

Non-Point Source - The Floyds Fork Watershed is developing rapidly in the northern part of the watershed. Population expansion will follow the new interceptors and the Floyds Fork Wastewater Treatment Plant. Water and habitat quality of the streams is reduced due to erosion, silt, runoff, and sedimentation from construction sites. Nutrient levels are high in this area. The high level of nutrients can be attributed to the use of lawn chemicals, agricultural activities, golf courses, septic tank systems, and package wastewater treatment plants. There are sections of the Floyds Fork Watershed where cattle can roam

through the stream. Other non-point sources within this watershed are herbicides, pesticides and fertilizers.

### 3.3.1.3 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 Floyds Fork Watershed will be identified during the development of the Floyds Fork Watershed Action Plan.

### 3.3.1.4 Strategies


The strategies for the Floyds Fork Watershed will be identified during the development of the Floyds Fork Watershed Action Plan.


### 3.3.1.5 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** Billtown Road Pump Station, Force Main and Interceptor Project - This project will provide sanitary sewer service to the portions of the Chenoweth Run Basin north of the Floyds Fork Development Review Overlay (DRO). The project will provide sewer service to areas now served by aging septic systems and new developments. Four existing MSD facilities, Lake of the Woods Wastewater Treatment Plant, Chenoweth Run Pump Station, Chippawa Pump Station and Chenoweth Hills Wastewater Treatment Plant, will be taken out of service, resulting in savings in operation and maintenance costs. Furthermore, this project would improve overall water quality of streams and groundwater in the service area. By eliminating the Chenoweth Run Pump Station, a significant amount of flow will be removed from the Jeffersonstown WTP. The project is currently in the easement acquisition phase. 

**MS4** De-Icing Practices - As a requirement of the MS4 Permit section Good Housekeeping / Pollution Prevention, the City of Anchorage has adjusted their salt sprayers in order to minimize the amount of overspraying during de-icing practices. 


**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 twelve individuals have attended the EPSC Workshop through Jefferson County Public School. 


**SAN** Long Run Pump Station, Force Main and Interceptor Project - This project provides sanitary sewer service to the Long Run basin. The project is expected to serve 6,492 present residents and a saturation population of about 64,990. This project eliminates MSD's Ashmoor Woods WTP which will improve water quality in the area and reduce operation and maintenance costs. The project is currently in the easement acquisition phase. Construction should start in the 3<sup>rd</sup> Quarter of 2002 and be completed in the 3<sup>rd</sup> Quarter of 2003. 

**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. 


**SAN** Tucker Station Interceptor Sanitary Sewer Project - This project serves the west portion of the Pope Lick Run Basin. This area is rapidly developing, with both single family residential and commercial projects being planned and constructed, thus, increasing the need for sanitary sewer facilities. Existing facilities will be inadequate to serve the anticipated development. Three existing MSD facilities, Running Creek Wastewater Treatment Plant, Woodland Hills Pump Station and Pope Lick Pump Station will be eliminated. This will result in savings in operation and maintenance costs to MSD. The project is currently in the easement acquisition phase. Construction is scheduled to start in the 4<sup>th</sup> Quarter of 2002 and be completed in the 4<sup>th</sup> Quarter of 2003. 

#### Flow Reduction Projects


**SSO** Jeffersontown Phase 3 I/I Remediation – This project consisted of 3,629 LF of cured-in-place sewer main rehabilitation, 35 cured-in-place lateral rehabilitations, and 458 manhole chimney seals. 

**SSO** Sinking Fork Interceptor I/I Remediation – This project consisted of 2,115 LF of cured-in-place sewer main rehabilitation, 21 cured-in-place lateral rehabilitations, and 1,482 manhole chimney seals. 

#### Aesthetics Projects

**MS4** Clean Up Anchorage Day - The Boy Scouts and Anchorage Civic Clubs had a “Clean Up Anchorage Day” in Spring. The City supplied the garbage bags and was also responsible for disposing of the collected debris. This activity meets an MS4 Permit requirement within the Public Education / Outreach Program element of the permit. 

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. 

**3.3.1.6 Evaluation**

The evaluation for the Floyds Fork Watershed will be identified during the development of the Floyds Fork Watershed Action Plan.

# EXHIBIT #6

## Floyds Fork Watershed

Exhibit #6 may be downloaded at:

<http://www.msdlouky.org/insidemsd/waters/2002/exhibit6.pdf>  (4.8Mb)