

## **COMBINED SEWER OVERFLOW HISTORY**

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Combined sewer overflows, common in most major cities in the East and Midwest, are a contributor of pollution in our streams. They are also a problem that the U.S. Environmental Protection Agency says must be dealt with. Paducah, like many other major cities, has several combined sewer overflows.

### **WHAT ARE COMBINED SEWER OVERFLOWS?**

Combined sewer overflows, or CSO's are pipes or mechanical openings in a combined sewer that allow water to flow into streams, creeks, and rivers when the sewer lines become overloaded with storm water.

### **WHAT ARE COMBINED SEWERS?**

A combined sewer is a pipe that carries sanitary wastewater every day, and storm water on rainy days.

### **HOW MANY DOES PADUCAH HAVE?**

Paducah has almost 56 miles of combined sewers in the city, principally in the midtown area and the surrounding neighborhoods. Paducah's combined sewer system previously consisted of 14 permitted overflows. Three of these have already been abated. Eleven overflows now exist at various points within the combined sewer system.

### **HISTORY OF THE CSO'S AND WASTEWATER SYSTEM**

The earliest sewers in Paducah were constructed in downtown Paducah during the mid 1890's. These sewers were primarily separate sanitary and storm sewers. The construction of combined sewers began in areas west of 12th Street in the early 1900's. Designers during this era held the philosophy that combined sewers were more cost effective than separate storm and sanitary sewers. One storm and sanitary piping system could serve both purposes. The construction was financed through a General Obligation Bond issue.

Large relief sewers were constructed in the late 1950's and throughout the 1960's to relieve basement flooding and related problems within the combined sewer system. Construction of these relief sewers created the majority of the overflow points within the combined sewer system.

Construction of the original treatment plant and major pumping stations was completed in 1957. The treatment plant was upgraded in 1974 to include secondary wastewater treatment facilities. The secondary facilities greatly increased the quality of treatment achieved at the facility.

The wastewater treatment plant was upgraded again in 1989 to add additional capacity to enable treatment of flow from S.D. #2 (Lone Oak) as well as improve the overall treatment process.

### **THE PROBLEM TODAY**

Today, the problem is twofold.

First, continued development has increased the surface of impervious areas such as rooftops, roadways and parking lots, resulting in increased stormwater runoff and combined sewer overflow frequency.

Secondly, the goal of the Clean Water Act of 1972 is to eliminate point sources of pollution. As already stated, the CSO's are major sources of pollution that must be abated. The JSA is currently permitted for wet weather discharges at the 12 remaining CSO points and is presently addressing these discharges.

### **JSA'S ACTIONS**

Combined sewer overflow abatement may be the most critical water quality issue in urban areas during the years to come. Federal and state regulations will require cities to address the issue. The level of commitment in our community will determine how successful we will be in solving the problem.

The City of Paducah completed a plan to abate CSO discharges in late 1993. The plan has been approved by the Kentucky Division of Water.

## JSA IS PRESENTLY ADDRESSING THE NINE EPA REQUIREMENTS FOR CSO'S.

The JSA is currently involved in a combined sewer overflow program that involves the following:

### \* Proper Operation and Maintenance of the sewer system

- A routine maintenance program has been initiated to clean, inspect, and maintain the CSO system.
- The JSA is involved in an inspection program that identifies inflow and infiltration points in the wastewater system. When illegal connections (inflow) to the wastewater system are identified, they are addressed and disconnected. When breaks or cracks (infiltration) in the wastewater system are discovered they are repaired. This allows more storage of wastewater in the collection system during precipitation events.
- A program has been developed to document work and activities associated with the CSO program.

### \* Maximize Collection Systems Storage

- A routine cleaning program has been developed to remove deposits from the sewer system. Removal of these deposits increases the volume available for storage within the sewer system. The JSA is evaluating the impact of increasing the height of various CSO regulation devices to enable more storage of storm flows within the collection system.

### \* Pretreatment Program Review

- The JSA currently operates a pretreatment program under the Federal and State Guidelines. The CSO sites are not presently impacted by industry that is controlled by or located within the city jurisdiction.

### \* Maximize Flow to the Publicly Owned Treatment Works

- The JSA has a routine cleaning program of the wastewater collection system that helps maximize the flow to the JSA's Wastewater Treatment Plants.

### \* Dry-Weather Overflow Prohibition

- The JSA has identified 40 maintenance checkpoints throughout the CSO System that are checked at least monthly and some that are checked after every significant rainfall event.

### \* Solids and Floatables Control

- The JSA maintains and inspects booms and nets at critical CSO outfalls.

### \* Pollution Prevention

- The City of Paducah implements a routine street cleaning program that removes litter that would be washed into the CSO Systems.

### \* Public Notification

- The JSA has placed signage at all CSO overflow points.

### \* Monitoring

- The JSA utilizes portable flow meters that monitor certain CSO overflow points. Additionally, samples will be obtained to quantify pollutants released at each outfall. Monitoring results will be continuously tracked to measure the JSA's progress in CSO abatement.