Meet MSD

Who We Are, What We Do

MSD is a publicly operated wastewater utility serving the City of Cincinnati, Hamilton County, other Hamilton County (Ohio) political subdivisions, as well as parts of three adjacent counties (Butler, Clermont, and Warren). In addition, the many visitors to our region—from sporting event spectators to family reunion attendees—use the services that our infrastructure provides. MSD's ratepayer base includes approximately 230,000 residential and commercial users, and 250 industrial users, who represent a population of about 855,000. To date, the northwestern part of Hamilton County and portions of adjacent counties remain without public sewers.

Legend

- Combination Sewers Data Total length: 869 miles Sizes: 4" to 246" Age*: 1 to 145 years Average age**: approx. 90 years
- Sanitary Sewers Data Total length: 2,107 miles Sizes: 1" to 156" Age*: 1 to 145 years
- Average age**: approx. 40 years
- Storm Sewers Data
- 12 Dual chambers 5 Overflows

Pump Stations

63 Total

214 Total

117 Public, 61 Private

82 Diversion dams

81 Gratings

26 Regulators

* SSO (Sanitary Sewer Overflows)

★ CSO (Combined Sewer Overflows)

- 3 Drop gates
- High rate separator
- *The oldest known sewer segments were built in 1865.

**The average age was calculated using sewer segments with known installation dates (about 76 percent of the sewer segments in the database).

Figure 1: MSD Sewer System



MSD manages a vast and complex network of infrastructure that is worth billions in physical assets. The sewage collection and treatment network spans an area that covers approximately 290 square miles, contains over 200,000 separate sewer connections, and includes approximately 2,994 miles of sanitary and combined sewers. MSD partners with other utilities and cities that are similarly dependent upon the Ohio River and its tributaries for wastewater discharge and drinking water, including Pittsburgh (Pennsylvania), Louisville (Kentucky), and Paducah (Kentucky).

In 2009, MSD operated seven major wastewater treatment plants, more than 120 pump stations, and three package treatment plants, which collectively treated approximately 167 million gallons per day of collected wastewater. Treated water (called effluent) is released into the region's creeks and rivers. We protect the natural environment by ensuring that wastewater is treated to required standards. Concurrently, we are also working to reduce the occurrences of wastewater entering waterways during heavy rain events, when the sewer system becomes overloaded.

MSD uses a 5-year capital planning cycle for the repair, replacement, or improvement of its physical infrastructure assets. The capital budget is \$165 million for 2010, and is estimated at \$908 million for the 5-year planning cycle of 2010 to 2014.



Yesterday's Decisions are Today's Liability



A few hundred years ago, prior to population growth and development in Cincinnati, there were over 300 miles of creeks and streams in the Lower Mill Creek watershed. These waterways naturally conveyed rainwater from hilltops, down hillsides, and through valleys to the Mill Creek and, eventually, to the Ohio River. As Cincinnati grew, these natural systems were replaced with roads, buildings, and sewer networks. Streams that once followed the natural landscape were directed into



over 600 miles of combined sewers. Over time, the capacity of the sewer network became inadequate and has led to the CSO problems that MSD is forced to address today.

We want to ensure that the decisions that we make today do not create liabilities for future generations. Exploring all solutions through a systematic, sustainable approach will help MSD make the right choices for correcting the wet weather issues.



As the wastewater utility for nearly 855,000 residents throughout Hamilton County, MSD has one of the most important tasks in the community. At least that's how I see it. For over 40 years, MSD has focused on providing services that help make this region a great place to live, work, and play.

> — James A. (Tony) Parrott, MSD Executive Director



MSD's Organization

MSD is a county sewer district established on April 10, 1968; prior to 1968, the County and the City maintained separate sewage operations. A 50-year contractual arrangement provides for City staff to manage and administer MSD's operations. The Board of Hamilton County Commissioners approves MSD's capital budget and the rate plan, sets sewer rates, and adopts policies for MSD governance. MSD is funded by customer sewer rates and does not receive tax money or appropriations to pay for operations or improvements. MSD participates in state and federal grant and loan programs to help maintain affordable sewer rates and is committed to growing these opportunities.

The MSD Executive Director manages the eight divisions shown in Figure 2, including the Office of the Director. The Director is also responsible for the City of Cincinnati's Stormwater Management Utility (not shown).

Figure 2: MSD Organizational Chart





MSD's Operational System

Figure 3 depicts MSD's operational system. The collection system is made up of an extensive system of pipes that receive flow from homes, businesses, and runoff from older stormwater pipes that are combined with sewer collection pipes. Stormwater not conveyed to the treatment plants is managed to reduce flooding and backups, but does result in CSOs. This collection system brings wastewater to the second part of MSD's operations: the wastewater treatment system. These facilities treat wastewater and release effluent back into the region's creeks and rivers. The waste removed in treatment is referred to as sludge, which is incinerated at two MSD facilities.

The system delivers important community and public benefits by collecting and treating raw sewage. As we embark on Project Groundwork, the system will increase these benefits by reducing sewer overflows and helping to improve the economic vitality of our communities.



Figure 3: MSD's Operational System



The Challenge Before Us

We stand at a historic crossroads for the future of Hamilton County and Cincinnati, where challenge meets opportunity. As a region, we face a downturn in economic activity, high unemployment, degradation of creeks and rivers, and loss of vegetative cover. As a utility, MSD feels the impacts of these and other challenges, including:

- The 180-year old sewer network, needing significant redesign and investment to update it
- Limited sewer capacity to handle heavy flows during rainy weather
- Loss of revenue
- Nearly 30 percent of the workforce is eligible for retirement by 2015, coupled with a restructuring of the local government workforce
- More stringent terms and conditions for financing

Most importantly, by federal mandate, MSD must reduce CSOs by 85 percent (of about 14 billion gallons of CSO annually) and eliminate SSOs entirely. These requirements are documented in a formal Consent Decree agreed to by MSD and regulators.

Figure 4: Consent Decree Timeline



Phase 1 must be completed in 10 years, by December 2018, and must result in 2 billion gallons of overflow reduction, based on a typical year of rainfall. MSD has until December 2012 to submit its preferred alternative Phase 1 Plan, and we estimate that Phase 1 spending will amount to \$1.145 billion. Details of the Consent Decree and Project Groundwork are available at the dedicated wet weather program Web site at *www.projectgroundwork.org.*





and the environment through water reclamation and watershed management.

Vision

Our diverse and inspired workforce is recognized regionally for exceptional service and commitment to our community and is a global leader in water reclamation, environmental services and organizational excellence.

Values

We commit to serve as professionals with honesty, integrity, accountability, and respect.