

# WASTEWATER COLLECTION AND TREATMENT

## Service Description

The greater metropolitan area of Eugene and Springfield generates in excess of 14 billion gallons of sanitary and commercial wastewater annually. To manage this wastewater, the City of Eugene provides sewers for the collection and conveyance of wastewater from homes and businesses in Eugene, Santa Clara, and River Road to the regional treatment plant. The City of Springfield provides wastewater collection and conveyance from homes and businesses in Springfield, and has jurisdiction over the Glenwood area.

The cities of Eugene and Springfield joined together with Lane County in 1977 to build a regional treatment complex for all wastewater generated in the greater metropolitan area. The City of Eugene operates and maintains this regional complex under contract with the Metropolitan Wastewater Management Commission (MWMC). The complex includes the Eugene/Springfield Water Pollution Control Facility, Biosolids Management Facility, Seasonal Industrial Waste Site, and regional wastewater pumping stations and pressure lines and sewers.

Within the Eugene metropolitan area, the City of Eugene also regulates all wastewater discharges into the wastewater collection system through the regional Industrial Pretreatment Program. Regulatory activities include developing pollutant limits for industrial discharges, responding to permit violations, and conducting industrial site inspections.

The City provides an ongoing analysis of user fees to ensure appropriate allocation of customer costs and benefits.

## Historic Perspective

Mid-1950s	Combined stormwater and sanitary sewage system in Eugene.
1970s	Eugene separated the sanitary and storm sewer systems.
1977	Eugene joined with Springfield and Lane County to form the Metropolitan Wastewater Management Commission (MWMC) to design and construct a regional wastewater treatment complex.
1984	New regional wastewater treatment facility completed.
1992	Sanitary Sewer Master Plan adopted.
1993	Current Inflow and Infiltration (I/I) control program initiated.
1997	Master Plan for the Eugene/Springfield Water Pollution Control Facility
1998	Program to install sewers in the River Road/Santa Clara areas completed.
2000	Glenwood transitioned to City of Springfield.
2000	Wet Weather Flow Management Plan adopted.

2001	The Wastewater Division is registered under the ISO14001 Environmental Management System.
2004	MWMC Facilities Plan completed and changes to the intergovernmental agreement (IGA) finalized. The Wastewater Division participates in the Public Works Department's APWA accreditation.

## Citizen Involvement

Citizens have an opportunity to testify at every MWMC meeting regarding wastewater services. Public comments are also taken at the regional and local levels on wastewater rates and charges. In addition, special public involvement outreach efforts have been made on significant issues such as the revision of the pretreatment local limits, the development of the 2004 Facilities Plan, and changes to the intergovernmental agreement. The MWMC also has supported citizen advisory committees to assist in the formulation of policies and procedures for Systems Development Charges, the Biosolids program, and a Wet Weather Flow Management Plan.

## Customer Input

Customer participation is invited at several points in any sewer construction project. For most projects, public meetings are held before construction and mailings are done to specifically request input on connection locations.

A comment section is provided on the back of all utility bills. Comments are reviewed by Public Works Administration, "utility billing" staff and consistent themes are flagged for policy or management discussion. Public Works Maintenance has implemented an automated system for tracking and follow up on wastewater collection system service requests.

## Mission

The mission of the Wastewater System Services is to efficiently and effectively monitor, regulate, collect, and treat wastewater from the community to protect public health and the environment.

## Outcomes

- Protection of public health.
- Protection of the environment.
- Support for the residential, commercial, and industrial activities of the community.
- Compliance with regulatory requirements.
- Provide efficient, effective service to the rate payers and community.

## **Operating Principles**

- We are responsive to our customers' needs and accountable to the public for the services we provide.
- We provide effective wastewater services that protect the public's health and safety and the environment.
- We are proactive in meeting federal, state, and local regulations.
- We provide reliable and continuous service to customers with minimal disruptions.
- We believe that open and direct communication with citizens, customers, and each other enhances creativity and innovation in delivering effective and efficient wastewater services.
- We deliver quality services in a cost-effective and equitable manner.
- We value honesty and trust and respect each other in our daily working relationships in order to provide safe and effective services to our customers.

## **Current Operating Environment**

### External Trends

#### **Changing Regulatory Requirements**

The State of Oregon periodically reviews and revises the water quality standards which set the operating requirements for the regional wastewater treatment facility. Recent changes, particularly for water temperature, mercury, and wet weather flow management will have significant impacts on how the regional wastewater system is managed. In addition, the U.S. EPA is developing regulations for Sanitary Sewer Overflows (SSOs) and Capacity, Management, Operation, and Maintenance (CMOM) of the sanitary sewer system. The NPDES permit which regulates the discharge of treated wastewater to the Willamette River will be renewed in 2007, and the new permit will include conditions to address temperature, mercury, and wet weather flows.

#### **Increasing Utility and Transportation Costs**

Wastewater conveyance and treatment are high consumers of electrical power. Electric rates have increased substantially over the past five years, and are likely to continue to increase. Transportation costs (such as for hauling of biosolids and maintenance of the collections system) are significantly influenced by rising gasoline and diesel fuel prices. Effects of increases and continuing volatility in utility and transportation costs will present ongoing cost containment challenges. It should be noted that the Wastewater Division has established specific programs in its environmental management system to address these trends. Public Work's Maintenance Operations experienced increased costs related to fuel, materials, and supplies.

### Internal Conditions

#### **Complex Staffing Challenges**

Recruiting, retaining, and supporting staff is an ongoing challenge. A competitive market for a small skilled labor pool results in few qualified applicants for technical positions in wastewater services. Increasing labor costs (due in large part to rising generic health care costs) are driving the need to optimize staff management and efficiency and consider strategies to leverage the knowledge, skills, and abilities of the existing staff. Workforce demographics forecast a significant transition in the next five to ten years as a large part of the current staff retires. Program expansion, such as the addition of the Biocycle Farm and new operating units at the main treatment plant will drive the need for additional O&M labor resources.

#### **Aging Collection and Wastewater Treatment Systems**

The continuing aging and deterioration of the wastewater system has resulted in significantly increased asset management programs focusing on effectiveness and efficiency. Twenty-five percent of the collection system is approaching or exceeding the end of a standard 40-50-year life cycle. Significant inspection and condition assessment efforts are underway to identify segments of concern. Community sewers where more than one structure is connected to a private system is of increasing concern. These private systems are beginning to fail at an increasing rate, prompting investigation and analysis aimed at providing public systems in the right-of-way for discrete structure hookup and service. Annual funds and staffing to complete the needed level of collection system rehabilitation is a critical, ongoing program need. The rehabilitation and upgrade needs of the regional wastewater treatment facilities have been evaluated and addressed in the 2004 MWMC Facilities Plan.

#### **System Expansion**

Under the MWMC IGA, wastewater services are provided to the areas covered by the urban growth boundaries of Eugene and Springfield. Growth in this area has been assessed and the associated impacts on wastewater generation and treatment are identified in the 2004 MWMC Facilities Plan. The Lane Council of Governments is facilitating a long-range planning effort, called the 2050 Plan, to assess growth and wastewater needs in the broader upper Willamette valley. This planning effort has noted the potential for substantial growth in the area, and already inquiries about connection of outlying communities, such as Coburg and Junction City, to the regional wastewater system have been received by the MWMC.

#### **Control of Grease and Debris**

The number of restaurants and the growth in construction activity in the community has led to increases in the amount of grease and debris entering

the system. This causes operational problems and the potential for line plugging, resulting in increased preventive maintenance needs. To minimize these adverse effects, staff has taken a proactive approach to prevent the unwanted material from ever entering the system. This approach has especially imposed greater demands on the Wastewater Division's Industrial Source Control staff. A general requirement for the use of pollution management practices for food service operations has been established.

### **Implementation of CIP**

The 2004 MWMC Facilities Plan outlines a 20-year capital improvement program (CIP) that is estimated at \$144 million (in 2004 dollars). The processes of design, construction, start-up, and operation and maintenance of the facilities included in this CIP will place significant demands on Eugene wastewater services staff. It is anticipated that enhanced training, flexible staffing options, creative workload management, and additional staffing will all be critical elements in responding effectively to these demands.

### **Sustainability**

The Eugene City Council passed a resolution in 2003 (#4618) that encouraged progress towards the sustainability of city services. In 2004, City staff adopted an operating policy in support of the Council resolution, and in 2005 the Mayor established a Sustainable Development Initiative and Task Force to help achieve the "triple bottom line" of economic, environmental, and social sustainability for Eugene. Wastewater services are working in alignment with these objectives through implementation of the environmental management system, which evaluated environmental impacts and sets specific objectives for continual improvement in performance. The Wastewater Division has been recognized for its efforts by acceptance into the U.S. EPA's Performance Track program, which is restricted to permittees that excel in their environmental activities.

### **Excessive Wet Weather Flows**

Excessive peak wet weather flows due to infiltration and inflow (I/I) causes capacity problems for both the collection system and the wastewater treatment plant. I/I is water that enters the wastewater collection system through defects in the pipes and by direct connections of gutter down spouts, foundation drains, and street catch basins. I/I come from both the public and private segments of the wastewater collection system and cannot be effectively controlled without addressing both components. Both the City of Springfield and Eugene are currently funding and completing rehabilitation projects on the collection systems within the existing public right-of-way. Preliminary reports indicate that the rehabilitation work is effective, data collection and analysis to determine effectiveness is on going. Work continues on the private segment of the rehabilitation program. Work on the private portions of the system is complex. Policies need to be developed

which will address these complexities. The private segment rehabilitation is one of the tasks identified in the first phase of Wet Weather Flow Management Program (WWFMP), which was completed 2000. Work has begun on Phase II of the WWFMP.

## **Performance Measures**

### **Core Processes**

#### **Regulate Discharges**

- State audit of compliance with pretreatment requirements of the NPDES permit.
- Number of upsets of wastewater treatment plant that adversely impact the environment or public health or cause a permit violation.

#### **Collect and Transport Wastewater**

- Number of overflows from the collection system.
- Number of days peak flows exceed peak hydraulic capacity of the wastewater treatment plant.
- Percent of sanitary collection system repaired or rehabilitated annually.

#### **Treat Wastewater**

- Number of days in year effluent quality is equal to or better than NPDES permit requirements.
- Number of gallons of wastewater treated annually.

#### **Treat Biosolids**

- Number of dry tons of biosolids reused/number of dry tons produced
- Number of dry tons of biosolids meeting or exceeding Class A quality requirements/number of dry tons of biosolids meeting Class B quality requirements.

## **Total System**

### **Effectiveness**

- Number of wastewater overflows or discharges.

### **Efficiency**

- Operating cost per million gallons of wastewater treated.
- Operating cost per collection system mile.
- Operating cost per dry ton of biosolids recycled.

### **Financial**

- Wastewater service charges and funding strategies meet annual rehabilitation needs for the sanitary collection system.
- Rate comparison to other agencies.

### **Customer Satisfaction**

- Percent of residents who rate the treatment of sewage/wastewater a 4 or 5 on scale of 1 to 5 (where 5 is excellent).

**Strategy 1: Prevent overflows of the wastewater collection and treatment system.**

Objective: Maintain record of zero overflows as a result of precipitation which is less than the five-year storm event level.

Work Activities:

- Update the Wet Weather Flow Management Plan.
- Identify problem elements and flow characteristics of the collection system (e.g. measure flows and model hydraulics).
- Perform optimum level of system rehabilitation for I/I reduction and life-cycle replacement of system components.
- Develop policies, codes, and procedures to address deteriorated private sewers and their contribution to inflow and infiltration.
- Continue to implement better control efforts to reduce debris and grease entering the system.

**Strategy 2: Implement financial management goals and policies for local wastewater services.**

Objective: Develop and implement a strategy for fully funding a target two-month operating reserve within five years.

Work Activities:

- Identify major unfunded capital facility and equipment replacement needs, establish a facility and equipment capital replacement reserve and implement an appropriate funding strategy
- Annually update the Six-Year Fund Forecast to project long-term operating costs and capital program needs and to serve as a basis for establishing and recommending wastewater user rates and capital program funding levels.
- Establish a fund management policy for regular (annual to biannual) user rate increases to maintain service levels and fund long-term capital programs.

**Strategy 3: Effectively respond to changing regulatory requirements.**

Objective: Maintain compliance.

Work Activities:

- Successfully re-negotiate NPDES permits.
- Monitor to generate data necessary to evaluate the impact of regulatory changes in operating requirements.
- Complete temperature management plan.
- Maintain Environmental Management System, maintain ISO 14001 registration.
- Comply with any definitive requirements of the Endangered Species Act.

# Wastewater System Map

