

## Chapter 1: Introduction

### 1.1 Purpose

The purpose of this chapter is to describe the contents of the *Treatment Report*, which is a part of the Milwaukee Metropolitan Sewerage District (MMSD) 2020 Facilities Plan (FP). This report describes the analysis of the treatment systems of MMSD, which include:

- ◆ The Jones Island Wastewater Treatment Plant (JIWWTP)
- ◆ The South Shore Wastewater Treatment Plant (SSWWTP)
- ◆ The Inline Storage System Pump Station (ISS Pump Station)
- ◆ The associated biosolids processing facilities located at JIWWTP and SSWWTP, as well as the 13-mile long interplant solids (IPS) pipeline, which conveys biosolids between the two wastewater treatment plants

### 1.2 Description and Responsibilities of Milwaukee Metropolitan Sewerage District

As a state-chartered government agency, MMSD's mission is to protect public health, property, and the environment by providing wastewater conveyance, treatment, and flood management services. For a detailed description of the MMSD and its responsibilities, see Chapter 1 of the *Facilities Plan Report*.

### 1.3 History of Facilities Planning

Section 201 of the federal Clean Water Act (CWA) states that all wastewater treatment facilities shall have a plan to determine the control and treatment requirements needed to meet federal water quality goals. In order to address MMSD planning area treatment needs and to provide responsible pollution abatement, MMSD has the goal of facilities planning at 10-year intervals, with a 20-year planning horizon.

Section 1.3 of the *Facilities Plan Report* outlines facilities planning efforts conducted by MMSD from 1977 to 1998.

### 1.4 Purpose and Need – 2020 Facilities Plan

The MMSD's 2020 FP addresses needed and ongoing water pollution abatement for MMSD's planning and sewer service area through the year 2020. Section 1.4 of the *Facilities Plan Report* details the purpose and need for the entire facilities planning effort. The MMSD's 2020 FP is a long-range comprehensive planning document that identifies improvements to all relevant systems so that these systems can accommodate regional growth and protect water resources.

The purpose of the 2020 FP is to identify the facilities, programs, operational improvements and policies (FPOPs) necessary to achieve the water resource goals inspired by the public, as well as those required under Wisconsin Department of Natural Resources (WDNR) regulations and state law and the U.S. Environmental Protection Agency (USEPA) regulations established and enforced under the federal CWA.



The purpose and need for this *Treatment Report* is to develop a plan for wastewater treatment needs for MMSD through 2020. This also entails an assessment of biosolids reuse and disposal options over the same time period.

### **1.5 Watershed Approach to Facilities Planning**

The entire facilities planning effort has been conducted using an innovative “watershed approach” to facilities planning. See Section 1.5 of the *Facilities Plan Report* for a detailed discussion of this approach.

### **1.6 Planning Objective**

The purpose and mission of MMSD’s 2020 FP is to identify the FPOPs that are necessary to achieve the water resource goals inspired by the public and to comply with regulatory requirements. The FPOPs are not limited to MMSD; consistent with the watershed approach, the FPOPs apply to stakeholders throughout the six greater Milwaukee watersheds. The 2020 FP’s mission is consistent with MMSD’s organizational mission stated in Section 1.2 of the *Facilities Plan Report*. The following are short descriptions of the FPOPs.

- ◆ **Facilities** are the structural assets that are part of MMSD’s conveyance, treatment and storage systems used to manage water resources. Some examples include treatment plants, sewers and detention basins. Examples of recommended actions related to facilities are improvements to infrastructure such as additional treatment plant capacity or storage tunnel volume.
- ◆ **Programs** are systems of services, opportunities and projects or actions taken to implement a policy. Programs are implemented to facilitate the achievement of the overarching mission of MMSD. A broad example of a recommended action related to programs is the development of a public involvement and education program. Another example is the program used to implement the hazardous waste policy called the Household Hazardous Waste Collection Program. Programs may be regulatory tools such as Runoff Management (NR 151) and Storm Water Discharge Permits (NR 216) that are employed to achieve a policy or legislative act.
- ◆ **Operational Improvements** are methods or ways to improve the efficiency or effectiveness of procedures or system functions.
- ◆ **Policies** are established courses of action (legislation, ordinances and other regulatory actions) to be followed by a government body or institution. An example of a current MMSD policy is to minimize the entrance of stormwater to sanitary sewers. This policy seeks to prevent stormwater from taking up much-needed capacity in the system. Policies can be further developed into legislation, an example of which is the Clean Water Act.

This *Treatment Report* identifies only the FPOPs related directly to treatment planning efforts.

### **1.7 Relationship to the Regional Water Quality Management Plan Update**

The entire 2020 FP effort has been completed as a part of a unique regional effort encompassing both the MMSD 2020 facilities planning effort and the Southeastern Wisconsin Regional Planning Commission (SEWRPC) Regional Water Quality Management Plan Update (RWQMPU). The details of this combined planning effort can be found in Section 1.7 of the *Facilities Plan Report*.

### **1.8 Public Involvement**

The public involvement effort for the treatment systems was completed within the framework of the overall public information effort conducted for the 2020 FP. The public involvement aspects of the facilities planning effort can be found in Section 1.8 of the *Facilities Plan Report*.

### **1.9 Planning Principles**

The overall planning principles for the entire facilities planning effort are detailed in Section 1.9 of the *Facilities Plan Report*. The planning principles for the *Treatment Report* followed those employed for the entire facilities planning effort.

### **1.10 Description of Planning Process**

The MMSD 2020 FP and SEWRPC RWQMPU are two separate yet coordinated planning efforts. Both entities developed the organization of the plans and defined the applicable analytical methods. The principal functional planning process steps within the RWQMPU and the 2020 FP planning efforts are as follows:

- 1) Study organization
- 2) Inventory, existing and future conditions
- 3) Formulation of objectives and standards
- 4) Analysis and forecast, problem definition
- 5) Preparation, test, and evaluation of alternative plans
- 6) Plan selection
- 7) Plan implementation

Report preparation, data sharing and public involvement are additional steps that are integrated into the plans.

### **1.11 Treatment Report Organization**

The *Treatment Report* portion of the MMSD 2020 FP contains twelve chapters and series of appendices. Below is a brief description of the twelve chapters contained in this report:



- ◆ **Chapter 1** (this chapter) introduces the report’s purpose and describes its relationship to the 2020 FP and RWQMPU. This chapter also describes the organization of the report.
- ◆ **Chapter 2** describes the existing MMSD service area boundary and the treatment facilities owned by MMSD. Chapter 2 also notes that planning for communities outside of the MMSD service area, including the city of South Milwaukee, are included in the SEWRPC RWQMPU.
- ◆ **Chapter 3** describes the analytical methods, data sources, and other information used to develop this report.
- ◆ **Chapter 4** analyzes the existing condition of the treatment facilities. This chapter describes existing wastewater treatment plant flows and loads as well as historical treatment system performance. The assessment of existing biosolids systems is also included.
- ◆ **Chapter 5** details the impact of the planned growth through 2020 on the treatment facilities. This chapter describes future wastewater treatment plant flows and loads along with projected impacts on the treatment and biosolids systems.
- ◆ **Chapter 6** outlines the current federal, state and local regulations, standards, and permits that are applicable to MMSD with regard to its treatment system and biosolids system.
- ◆ **Chapter 7** refers the reader to Chapter 7 of the *Facilities Plan Report*, which details the 2020 FP’s goals and objectives and provides a historical context for these goals and objectives. The *Facilities Plan Report* chapter also details the 2020 FP’s public participation activities.
- ◆ **Chapter 8** defines the common facilities that are recommended for inclusion in the Recommended Plan, regardless of which of the Treatment Recommended Plan alternatives is selected.
- ◆ **Chapter 9** details the alternative development process. It describes the treatment systems that were evaluated as a part of the overall MMSD system analysis discussed in Chapter 9 of the *Facilities Plan Report*. This chapter also includes the biosolids alternatives analysis. The Recommended Plan for treatment systems is detailed in this chapter.
- ◆ **Chapter 10** outlines the Recommended Plan for the treatment systems, including both of the wastewater treatment plants and biosolids management. It includes a total present worth analysis.

The *Treatment Report* has been prepared in conjunction with the *Conveyance Report* and the *State of the Art Report* as corollary reports to the *Facilities Plan Report*.