

# Section 8

## Recommended Plan

### 8.1 Introduction

This section includes the recommended plan for wastewater collection, disposal, and treatment for the Town. The recommended plan for disposal of wastewater is based on the sewer needs assessment and alternatives evaluation described in Section 2, and the collection system evaluation presented in Section 4. The recommended plan for treatment of the wastewater is based on the WPCF evaluation described in Section 5, the receiving water evaluation presented in Section 6, and the alternatives evaluation presented in Section 7.

The recommended plan is phased over time, based on the relatively urgent need to upgrade the Town's wastewater treatment facilities, especially the Mystic WPCF, and the long-term need to implement solutions to the sewer needs areas.

High-priority recommendations include:

- construction of improvements to the Town's wastewater treatment facilities to enable the Town to meet the Town's projected needs for the 20-year life of the Wastewater Facilities Plan,
- provide sufficient treatment capacity, and
- to eventually meet Stonington's effluent total nitrogen wasteload allocation (in accordance with the *General Permit for Nitrogen Discharges*).

Lower-priority recommendations include:

- construction of sewers into those sewer needs areas identified in Section 2, and
- implementing the collection system improvements recommended in Section 4.

The nine sewer needs areas recommended for planned implementation within the 20-year plan period would not be addressed all at once; rather, it is anticipated that the sewer construction program would be spread out over the next 20 years to minimize impacts on the Town. The implementation plan envisions that areas identified as "critical" priority would be addressed first, followed by "high" priority areas. Throughout the 20-year period, each area will be addressed at WPCA's discretion.

**Figure 8-1** presents a project schedule for these recommendations, and shows how the construction recommended in the plan would be phased.

**See Figure 8-1**

## 8.2 Recommended Plan for Wastewater Treatment

As described in Section 7, it is recommended that Stonington meet its wastewater treatment needs by implementing upgrades at each of its three existing treatment facilities. Each facility will be upgraded to treat all of the influent wastewater from its collection system (i.e., the existing diversion from the Mystic WPCF to the Borough WPCF will be discontinued) and to achieve a high degree of nitrogen removal, enabling WPCA to comply with the *General Permit for Nitrogen Discharges* without requiring the purchase of credits.

As shown in **Figure 8-1**, upgrade of the Mystic WPCF is the highest-priority component of the recommended plan. The Mystic WPCF is the oldest of the three WPCFs, and is in the highest need. Once the Mystic WPCF is upgraded, and the existing diversion to the Borough WPCF is discontinued, the impacts of the Borough WPCF can be fully ascertained before upgrading the Borough WPCF. Due to the current flows and loads to the Borough and Pawcatuck WPCFs, the timing of upgrades to those facilities can be phased to optimize funding opportunities and minimize cost impacts, and to otherwise implement the upgrades at the most feasible time.

The estimated probable present-day project cost for implementing this project is \$25.8 million including engineering and contingencies. The estimated annual O&M cost of the completed facilities is \$1.77 million. These costs are based on implementing the following treatment processes:

- Influent comminutor and pumping (area provided with odor control)
- Septage receiving (at Pawcatuck WPCF)
- Primary clarification (process provided with odor control)
- Biological process for secondary treatment and nitrogen removal. The technology selected in this report is a conventional single-sludge biological system utilizing anoxic and aerobic zones within the reactors.
- Sodium hypochlorite addition for disinfection.
- Sludge storage and thickening (areas provided with odor control)

During the design phase of the project, process alternatives, including newer technologies such as IFAS and MBR systems for biological treatment, and UV systems for disinfection, should be re-evaluated, in detail, to determine the best, most cost-effective processes to implement.

## 8.3 Recommended Plan for Collection System

As described in Section 4, there are several minor recommended upgrades to the existing collection system with an estimated value of \$340,000 including engineering

and contingencies. These improvements are minimal and can be addressed as needed over the 20-year planning period. In addition, infiltration and inflow management should also be employed throughout the 20-year planning period.

## 8.4 Recommended Plan for Wastewater Disposal

As described in Section 2, alternatives were evaluated to provide solutions to the 18 sewer needs areas identified in this Wastewater Facilities Plan. The WPCA recommends the plan include provisions to provide solutions to nine of these sewer needs areas (only the “critical” and “high” priority areas) within the 20-year planning period. **Table 8-1** presents a summary of these areas, their relative priority, the associated recommended solutions, and costs.

The schedule in Figure 8-1 indicates that the sewer needs areas would be addressed in a phased manner, with the “critical” areas addressed first, followed by the “high” priority areas. All of the sewer needs area projects are shown as delayed until after the treatment plant projects are complete. These projects are then phased throughout the remainder of the planning period. This phasing would minimize cost impacts on the Town’s citizens, and inconvenience due to road construction. It should be noted that there is no specific implementation sequence established for any of these projects. WPCA has the responsibility to continuously review the Town’s sewer needs, and respond to the highest-priority needs and the public health demands and as budgetary constraints allow. It is possible, even probable, that the timing of the recommended improvements may change from that shown on **Figure 8-1**.

In addition, Section 10 evaluates two implementation options and their financial impact on the Town. Implementation option 1 includes the impact of connecting only the areas designed as “critical,” and implementation plan 2 also includes the “high” priority areas.

## 8.5 Recommendations: Onsite Wastewater Management

Appendix B describes the recommended Onsite Wastewater Management Program (OWMP) to assist homeowners with onsite systems.

**See Table 8-1**