

# Introduction

## 1.1 Introduction

Originally constructed in 1964, the Tryon Creek Wastewater Treatment Plant (TCWTP) has provided reliable wastewater treatment for both the City of Portland and Lake Oswego. The plant is currently designed to treat 8.3 million gallons per day (mgd) of dry weather flow, while managing peak wet weather flows as high as 37.5 mgd. The plant treats up to 20 mgd through the secondary process, blending secondary and primary effluent for higher flows. The plant is successfully meeting the current treatment needs of both communities, and it continues to produce a high quality secondary effluent at an extremely low cost per gallon.

With the two constrained service areas in Portland and Lake Oswego, the TCWTP will never need to be much larger than its current capacity. But, regulatory criteria and surrounding development will drive changes at the plant as illustrated in Figure 1-1. This facilities plan defines these future requirements, providing an opportunity to rethink the overall treatment process at TCWTP.

This facilities plan addresses future regulatory requirements and the transition of the industrial neighborhood to a commercial/residential area. It was developed with a 30-year planning horizon in 10-year increments to provide a long-term road map for improvements. This 30-year plan takes into account future growth in flows and loads, regulatory changes, advancements in technology, and the anticipated changes in the neighborhood surrounding the plant. With this plan, a framework is established to make cost-effective, near-term capital improvement program (CIP) decisions, minimize stranded investment, and build a facility that ultimately has the flexibility to meet the long-term regulatory and capacity requirements.



FIGURE 1-1  
**Regulatory Criteria and Surrounding Development Conditions that Influence TCWTP Planning**  
NMFS = National Marine Fisheries Service; NOAA = National Oceanic and Atmospheric Administration.

## 1.2 Facilities Planning Approach

Planning criteria and evaluation criteria were developed for the TCWTP facilities plan on the basis of City of Portland Bureau of Environmental Services (BES) Strategic Levels of Service (LOS) and the Vision and Guiding Principles established with input from TCWTP stakeholders including BES staff, Lake Oswego staff, and the Citizen Advisory Committee (CAC). The overall facilities planning approach that incorporates these criteria is summarized in Figure 1-2.



FIGURE 1-2  
Whole-Plant Alternative Development Process

BES established the Strategic LOS to guide decision making, rank capital projects by priority, and to align decision making with the overall BES Strategic Plan. The Vision and Guiding Principles were developed with input from the CAC to ensure the facilities planning process reflected community goals and values regarding improvements to the TCWTP. To identify the minimum requirements for development of treatment plant alternatives, the Strategic LOS and Vision and Guiding Principles were translated into more specific Tactical LOS. The resulting alternatives were evaluated against criteria reflective of the Vision and Guiding Principles.

Copies of the BES Strategic LOS, Vision and Guiding Principles, and the Tactical LOS are provided in Appendix A.

Recommended improvements were evaluated using the *2010 CIP Criteria Scoring Considerations* (BES, 2010) (copy provided in Appendix A).

## 1.3 Background and Coordination

This facilities plan builds on and incorporates previous work from the following:

- Enhancement Master Plan for the Tryon Creek Wastewater Treatment Plant, Final Enhancement Plan (Enhancement Plan) (CH2M HILL et al., 2007)

- City of Lake Oswego Wastewater Collection System Master Plan (Carollo Engineers, 2013)
- Tryon Creek Wastewater Treatment Plant Facilities Plan (CH2M HILL, 1999)

This facilities plan was coordinated with the Foothills Framework Plan (Williams/Dame & White, 2011) process and developed to meet existing and potentially new policies and land use regulations in Lake Oswego.

## 1.4 Intended Readers

This facilities plan was written for:

- Oregon Department of Environmental Quality (DEQ) regulatory staff for review, as a source of information for permitting, and to meet potential funding requirements.
- Managers and staff of the City of Lake Oswego and City of Portland Bureau of Environmental Services to document the overall plan, continue providing reliable service, meet regulatory requirements, protect the public, protect the environment, support the long-term goals of the community, and provide a defensible reference document for cost-beneficial CIP decision making.
- Members of the public to provide a better understanding of the services and responsibilities of BES, ongoing operations and maintenance activities, facility condition, and recommended concepts to meet current and future needs and requirements.
- Subsequent engineering design teams for successful implementation of projects in the capital plan.

## 1.5 Organization of this Document

To facilitate review, this facilities plan is generally organized as described in the DEQ *Guidelines for the Preparation of Facilities Plans and Environmental Reviews for Community Wastewater Projects* (December 2005) with some exceptions to address the specific needs of the TCWTP facilities planning process.

DEQ has since updated the guidelines (2013), but the development of this facilities plan was well underway before issuance of the new guidelines.