

Section 8

Design and Construction Standards

The objective of this section is to describe and document the City's standards for design and construction of wastewater collection facilities, including the following City procedures and standards:

- Project review procedures
- Policies and requirements for outside parties
- Design standards
- Construction standards
- Construction certification and follow-up procedures

Design and construction standards are based on Ecology design guidance and other documents generally accepted by engineering professionals as containing fundamental criteria for design and construction of wastewater and reclaimed water utility projects. The primary publication that affects wastewater system design standards and sizing is the *Criteria for Sewage Works Design* (Ecology, 2008).

8.1 Project Review Procedures

The City has developed standards and requirements pertaining to wastewater collection and reclaimed water distribution projects. These standards are utilized in the City's project review process. During the review process, the City's development review engineer and/or the Public Works Director will review the plans of the proposed project to verify that the project plans and specifications are consistent with the City's construction and development standards as well as this GSP. In the past, the City has used outside consulting engineers to review plans and specifications. The City's development and construction standards for its wastewater system are included in Appendix 1B. City Design Guidelines are included in Appendix 8A.

The development and construction standards include the process by which a new service is provided. At the time of application by the prospective customer, the City first determines if there is a duty to serve and whether there is sufficient system capacity. The City evaluates its duty to serve based upon City policy and Development Guidelines (see Section 1.7.1). System capacity is evaluated in terms of anticipated flows with respect to line sizing and consistency with utility planning documents such as system/basin mapping and current system looping. The current project review process is shown in Figure 8-1.

8.2 Policies and Requirements for Outside Parties

The City has established policies and requirements for development/extension of the wastewater system by outside parties, such as developers. Outside parties making alterations to the system are required to comply with the policies and requirements included in this GSP and the following documents:

- City of Yelm Development Guidelines
- City of Yelm and Thurston County Joint Growth Management Plan
- City of Yelm Municipal Code: Chapter 13, Water and Sewer

The above policies include various requirements of system performance and development standards including, but not limited to, rights-of-way, looping requirements, and level-of-service standards according to the GMA.

8.3 Design Standards

The design of wastewater collection and reclaimed water distribution system utilities must conform to City standards and the latest version of the *Criteria for Sewage Works Design*, and must be consistent with the City's standard detail drawings. Design standards include those for STEP tank size and type, pump selection, and pipeline sizing and material. Any extension of the wastewater collection system must provide necessary valves, cleanout ports, and air release assemblies as described in the *Criteria for Sewage Works Design* and City standards.

Changes and growth within the system have resulted in minor changes and/or modifications to the existing standard detail drawings shown in Appendix 8A. The City will make necessary changes to the standard detail drawings and replace them as applicable.

8.4 Construction Standards

The City's development standards (Appendix 8A) specifically address the accepted materials and construction methods regarding the wastewater system. This includes equipment and material for the following components:

- Piping
- Anchoring system
- Fittings
- Thrust blocks
- Hydrants
- Blow-offs
- STEP tanks
- Air and vacuum release valves
- Pipeline and tank testing
- Pig ports
- Taps

8.5 Construction Certification and Follow-Up Procedures

The City ensures that wastewater collection projects are constructed in accordance with the wastewater utility's construction standards by inspecting the construction and observing testing. As shown in Figure 8-1, prior to installing a STEP tank on a new wastewater line or service, the extension must pass pressure tests, as-built records must be submitted, and the Public Works Department must complete a final inspection. All wastewater system projects require easements to allow City access for future system operation and maintenance.

The maps of the existing system included in this document have been updated to reflect recent changes and have been reviewed with the wastewater system operators. In the future these maps will be updated as major City and developer projects are completed.

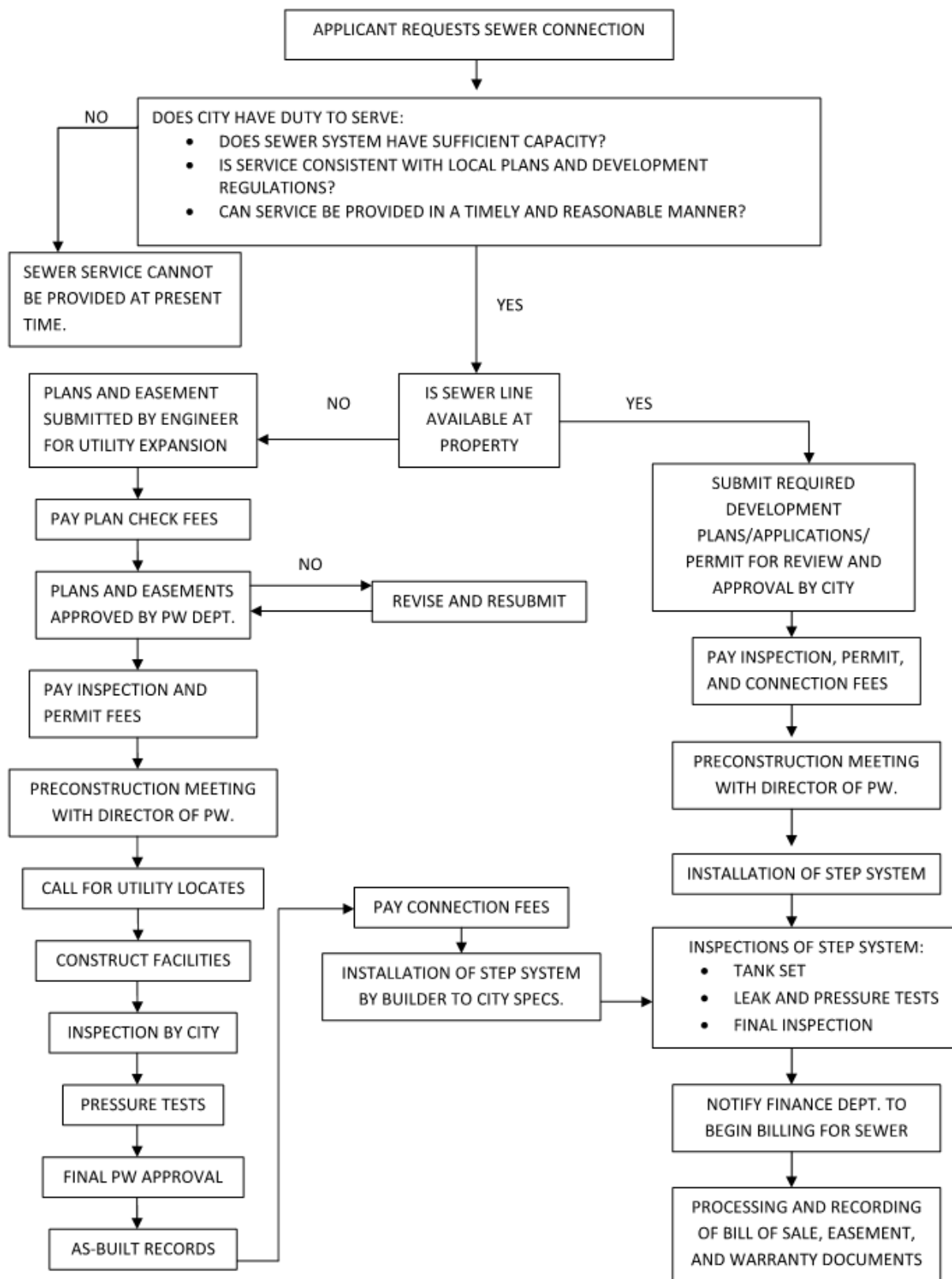


Figure 8-1. Process to obtain wastewater service