Utilities Element

With proposed changes

UTILITIES ELEMENT

Introduction

The utilities element is included in the comprehensive plan to ensure that adequate utility services are planned for Steilacoom's future. Steilacoom has addressed utilities issues through the preparation of several facility plans since 1992. This element summarizes the information contained in those plans. In addition, it summarizes information about utilities not owned by Steilacoom. In the future, the Town may initiate changes in ownership and franchises to improve utility efficiency, effectiveness, and services or to decrease overall cost to recipients of services.

The utility infrastructure is well established throughout Steilacoom. With few exceptions, primary utility lines extend throughout the Town. There are scattered areas throughout Town where primary utility do not exist, mostly in the Old Town and Saltar's Point neighborhoods. New development usually requires extending secondary lines to feed individual connections, however, in some cases extending primary lines will be required. In old areas of Town, many facilities are aging and need renovation or improvement to meet modern service standards.

Existing facilities and proposed expansions and additions to facilities are described in detail in the Town's comprehensive plans for each of the following Town-owned utilities:

- Water system – 2010 Water System Plan, Gray & Osborn
- Sanitary sewer collection and pumping system – 2009 Comprehensive Sewer System Update, RH2
- Stormwater management – 2013 Stormwater Comprehensive Plan Update, Gray & Osborn
- Electric power distribution – 2007 Distribution System Review and Rate Impact Analysis, ZE Power Engineering

Services for some Town-owned utilities are supplemented by other service providers. Sewage treatment is provided by Pierce County. Electric power is supplied by Bonneville Power Administration and carried into Steilacoom on Tacoma City Light transmission lines. A small number of residents are served by Lakewood Water District, Tacoma ~~City Light~~ Power, or Puget Sound Energy, rather than by the Steilacoom utilities.

The following utilities are not owned by government entities:

- Solid waste collection, recycling, and disposal, provided by LeMay, Incorporated (associated facilities are not located within the Town)
- Natural gas service, provided by Puget Sound Energy
- Local telephone service, provided by CenturyLink
- Long distance and mobile telephone services, provided by numerous companies
- Cable television, provided by Comcast
- Electrical service, provided by Puget Sound Energy ~~or Tacoma City Light~~

Each utility is discussed in a separate section in this element.

Land Use Assumptions

As set forth in the Land Use Element, the Town assumes that there will be a gradual increase in new commercial and residential development throughout town, but no change to the land use pattern. No large scale additions to the utility infrastructure ~~is~~ are contemplated, other than those required for and within the Master Plan Development Area. Any upgrades or expansions due to the development of the Master Planned Development Area will be evaluated when a site development plan for the area is proposed. ~~Rather,~~ Most utility construction will involve repair of existing infrastructure and incremental additions for new service to infill development. Budgeting for future projects is based on this assumption.

Water System

Water service is provided to most of Steilacoom by a Town-owned water utility. Approximately 50 Steilacoom single-family residences, two apartment complexes and a gasoline station are served directly by Lakewood Water District, all other residences and businesses are served by the Town. The Town does not provide service outside of its corporate boundaries. The Town's retail service area is shown on Figure 6.1.

Formerly, the Town's wells provided the source for water. Since 1998, the Town has purchased water from the Lakewood Water District, freeing the Town from the costs of treating the water to drinking level standards. The Town's number 4 well located at the end of Ira Light Street remains as an emergency and back up source to the purchased supply. Well number 1, located near Cherrydale Park, could also be used in an emergency.

The Town has two active storage tanks on Roe Street, each with a capacity of 500,000 gallons. The Town has reserved an additional 2,000,000 gallons of storage capacity in the Lakewood Water District. As of 2013, there are over 177,000 lineal feet of water distribution main serving 2,271 metered connections.

Further details on the water utility are available in the 2010 Water Comprehensive Plan prepared by Gray & Osborne for the Town. The 2010 plan was not officially approved by the Department of Ecology until late 2014, due to concerns about the amount of water available to the Town from the Lakewood Water District. Once those concerns were resolved, the plan was approved.

The EPA estimates that Americans use between 80 and 100 gallons per day per person. The Town retains ownership of municipal water rights of approximately 672 acre-feet annually, enough to provide 6,000 people with 100 gallons per day. The Town's agreement to purchase water from the District is set to be renewed in 2017.

Between the agreement with Lakewood Water District and the Town's own water rights, the Town has sufficient water availability to support the Town through the next 20 years.

Major projects for the water system include replacement of older, smaller pipes throughout Town.

Sanitary Sewer System

Sewage collection service is provided within the Town's boundaries by a Town-owned utility. The Town also provides sewage collection service outside of the Town boundaries to the Arrowhead development adjoining Steilacoom Boulevard and Far West Drive. Sewage is conveyed for treatment to a Pierce County facility outside of Town. The Town's sewer service area is shown on Figure 6.2.

As of 2009, the Town served 2,800 sewer customers. Approximately 60 residences in Steilacoom have septic systems that were installed prior to the development of the sewage collection system.

The system also serves two elementary schools, Steilacoom High School, Western Washington State Hospital, the ~~industrial~~ Master Planned Development area, and several small retail and food service establishments in the downtown commercial district.

The system consists of approximately 34 miles of gravity sewer mains and 3 miles of force mains. A primary pump station located across from Sunnyside Beach Park sends the effluent to the Pierce County facility through an 18 inch force main. There are seven other lift stations throughout town.

The Town has a sanitary sewer agreement with Pierce County for treatment of sewage at the County's Chambers Creek Wastewater Regional Treatment Plant. That agreement grants the Town permanent capacity rights within the treatment plant. The County must accept and treat the wastewater the Town sends to the plant. The Town's 7.8 million gallon per day Sunnyside Lift Station sends the Town's effluent to the County facility.

The 2009 Comprehensive Sewer System Update, prepared by RH2 Engineering, assumed that the Town's sewer service area would approach a residential population of 9,900 at "saturation", or total build-out, based on population projections from the Town and County at that time. According to the Update, the Town's lift stations and trunk system have capacity to handle projected flows at "saturation development." The Town's population projections have been revised downward since 2009, meaning the system will have capacity for the 20 year planning period.

However, the system was installed in several increments beginning in 1921, and much of it was not constructed to modern standards. For example, sewer lines built prior to 1921 consisted mainly of clay pipe, while concrete material was used from 1921 to the

1970s. Polyvinyl chloride (PVC) pipe is now used. The Town's 2009 Comprehensive Sewer System Update identifies deficiencies concentrated in some of the old portions of the system and projects required to correct those deficiencies. Much of the system's deficiency is attributed to deteriorated clay and concrete pipes that allow ground or storm water to enter into the sewer system. Improvements to the sanitary sewer system, therefore largely involve the replacement of old sewer pipe.

New development is responsible for providing mains, lift stations and lateral connections as necessary to serve the new lots. For individual new homes on lots without an existing connection, the homebuilder is responsible for constructing a new lateral connection to the Town’s specifications.

Connection to the Town sewage system is mandatory if a main is located in a street within 300 feet of the proposed new building. New septic systems are only allowed if a main is not within 300 feet, and must be constructed to Tacoma-Pierce County Health Department standards. Failed septic systems must be replaced with a connection to the sewer system if a main is within 300 feet.

Further information about the sewer system is available in the Town's 2009 Comprehensive Sewer System Update.

Figure 6.1 Water System Boundaries

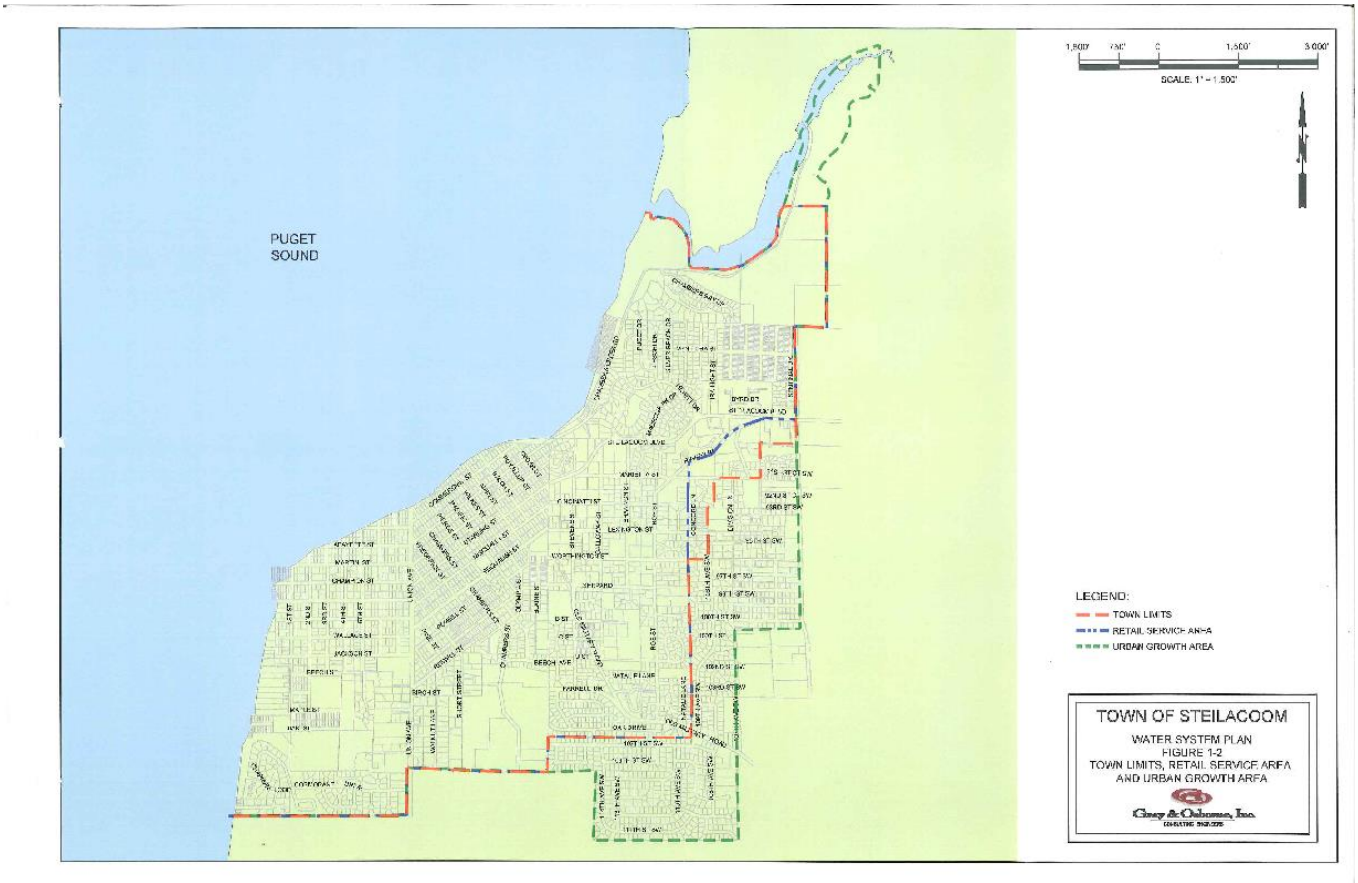
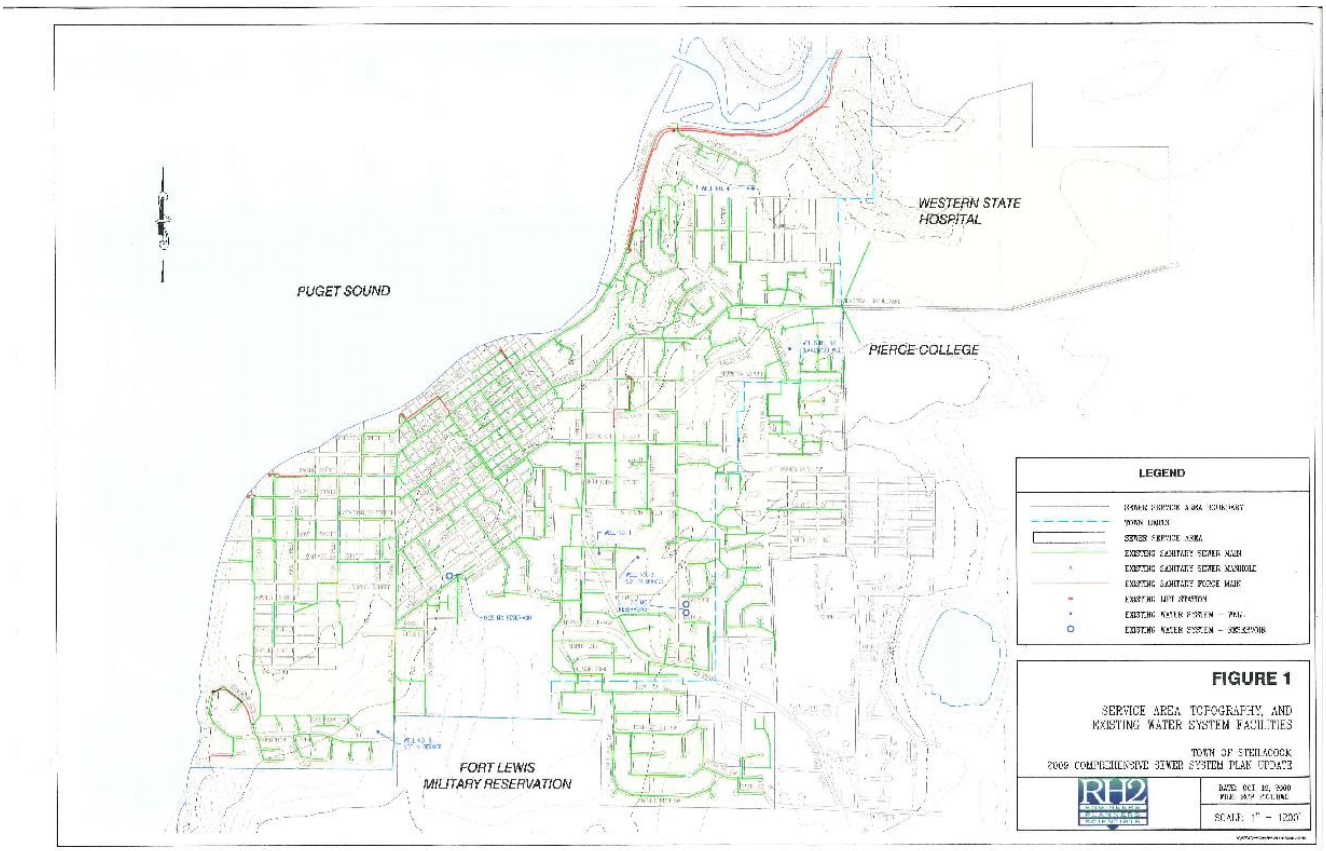


Figure 6.2 Sewer System Service Area



Stormwater Management System

The area serviced by the Town's stormwater management system includes the entire Town, and extends east and south beyond the Town boundaries. Nearly all surface water is discharged to the Puget Sound via five major drainage ways. A sixth drainage way located within the Shannon Street right-of-way is landlocked and does not discharge directly to Puget Sound.

The existing system consists of 128,000 linear feet of stormwater pipe, 27,300 linear feet of open ditch, 1,600 catch basins, two detention facilities, 13 water quality facilities, and five storm filter vaults. The Town has seven marine outfalls where the drainage enters Puget Sound:

- 5th Street Waterway
- Chambers Street Waterway
- Cedar Street Waterway
- Chambers Bay Outfall
- 2nd and Champion Streets Outfall
- Chapman Loop Outfall
- Cliff Street Waterway

The 2013 Stormwater Comprehensive Plan Update describes the modeling used to determine which portions of the system do not meet the Washington Department of Ecology's *Stormwater Management Manual for Western Washington.* Those areas are proposed for improvements.
The Stormwater Comprehensive Plan includes an analysis of nonpoint source pollution within Town and ways to control nonpoint source pollution, a facility operation and maintenance plan, including street sweeping standards, catch basin cleaning, ditch mowing, and use of biofiltration swales, capital improvement projects and financing for such projects.

The proposed capital improvement projects in the Plan were prioritized in the following order:
1. Town-identified problem areas, priority given to deteriorated systems
2. Existing facilities that experience flooding during the 2-year storm event based on hydraulic modeling.
3. Existing facilities that experience flooding during the 25-year storm event based on hydraulic modeling.
4. Existing facilities that do not have capacity in the 2-year storm event without surcharging based on hydraulic modeling.
5. Areas without stormwater conveyance systems.

Areas identified as problem areas are:

- Culverts along Union Avenue
- Chambers Street Waterway outfall
- Balch Waterway culverts
- Chambers and Frederick Streets
- Braecrest Circle to Nisqually Street
- Cedar Street right of way and Steilacoom Boulevard
- Marietta Street
- Roe Street
- Shepard Street
- Farrell Drive culverts
- Steilacoom Boulevard
- Marietta Place
- Maple Lane
- Saltar's Point Elementary
- Beech Avenue
- Lafayette Street
- Jackson Street culverts
- 2nd Street culverts at Montgomery and Gove Streets

Most projects will be done in conjunction with other utility work.

Further information about the stormwater management system is available in the 2013 Stormwater Comprehensive Plan Update prepared by Gray & Osborn for the Town.

Electric Power Distribution System

Electric power is distributed throughout most of Steilacoom by Town-owned facilities. The power distribution facilities serve the Town's residents, schools, and commercial users. In addition, power is distributed to well pumps in the water system and pump stations in the sewer system. The Town does not distribute power outside the Town boundaries. As of 2007, the Town had 2,874 electric customers. A small number of Steilacoom residences are served by Tacoma ~~City Light~~ Power or Puget Sound Energy rather than by the Steilacoom electric utility.

As of 2007, the system consists of 28.4 miles of underground cables, 1.5 miles of overhead wires, 450 transformers, 420 street lights, and 197 underground vaults. Power is purchased from the Bonneville Power Administration and delivered to a substation to the east of Town. From the substation, power is distributed through four primary feeder lines: Madrona, Cherrydale, Union Avenue and Lexington.

Further information about the electric system is available in the 2007 Distribution System Review and Rate Impact Analysis, compiled by ZE Power Engineering for the Town.

Natural Gas Distribution System

Natural gas is provided in Steilacoom by Puget Sound Energy facilities. The system is capable of supplying 600,000 cubic feet of gas per hour to the Town limits and distributing it across the Town using high and intermediate pressure lines. There are approximately 3,500 feet of high pressure supply lines and approximately 35 miles of intermediate pressure supply lines in the Steilacoom area.

High pressure lines supply gas at pressures ranging from 150 to 260 pounds per square inch (psi). Four district regulators within the Steilacoom area reduce pressure to 25 to 60 psi for distribution through intermediate lines. Depending on demand, commercial, ~~industrial~~,and institutional buildings may be supplied gas by high or intermediate pressure lines. Individual residences are served by intermediate pressure lines. The pressure is reduced to approximately .5 psi at each residence's meter.

Information provided by Puget Sound Energy indicated that no major facilities expansions or upgrades within Steilacoom are planned. However, as new development occurs Puget Sound Energy may install facilities serving the development upon agreement with the developer. Similarly, facilities may be installed upon agreement with owners of existing buildings.

Telecommunications System

Land line telecommunications service is provided in Steilacoom by CenturyLink. Existing telecommunications facilities are capable of servicing 100 percent of the Town after all buildable land is developed. Minor facility modifications may be required in some neighborhoods to incorporate advanced technologies that efficiently accommodate increased demand for services.

CenturyLink regards the exact nature of its infrastructure as proprietary information. The system is capable of serving the entire Town through its system, a mix of copper wire and fiber optic cable. CenturyLink did not provide the Town with plans for the Steilacoom area.

A submerged main cable enters Puget Sound at Saltar's Point Beach to carry telecommunications service to McNeil and Ketron Islands.

Long distance telephone service is provided by a number of companies, including CenturyLink. These companies use CenturyLink's lines to provide their service, and have no facilities within the Town.

Mobile telephone service, including cellular and PCS systems, relies on radio transmissions to carry telephone messages. Service is available in Town from a number of providers, some through facilities located outside Town limits.

There is one cellular telephone facility within the Town limits, located between the Public Safety Building and the Community Center. The tower is owned by Crown

Castle, and is located on land leased from the Town. The tower is capable of supporting four antenna arrays. T-Mobile, AT& T Wireless and Clear (a subsidiary of Sprint Wireless) have antennas on the tower and supporting equipment below.

Cable Television System

Cable television is provided in Steilacoom by Comcast. Existing cable television facilities are currently capable of servicing approximately 98 percent of the Town.

Information provided by Comcast indicated that no major facilities expansions or upgrades within Steilacoom are planned. However Comcast engineers work closely with utility companies, the county, and the Town to stay informed on proposed developments so that cable facilities can be part of the developers' plans. Consequently, joint trench projects can be anticipated in the future.

Conclusion

Utilities goals and policies call for cost-effective and efficient utility systems that deliver high quality services. Thus, renovation and improvement projects for Town-owned facilities must balance service quality gained with customer cost incurred. Similarly, future proposals for changes in ownership, franchises, rates, and operating methods, must be evaluated as part of the biennial budget process to ensure satisfactory quality and reasonable cost are maintained or improved.

Utility Goals and Policies

The goals and policies for the utility element recognize the need to rehabilitate existing improvements and provide for service demands created by new growth. In addition, they clearly express an interest in exploring appropriate rate structuring, conservation programs and other demand management strategies.

Utility Goal 1: Provide cost effective service

Provide and maintain public utility facilities and services to all persons living within existing utility service areas in a cost effective manner.

Policy U 1.1. Public utility maintenance and rehabilitation programs should be implemented to reduce maintenance costs and minimize rate increases.

Policy U 1.2. Establish a process by which the feasibility of retaining public ownership and maintenance responsibilities for utilities can be evaluated on a regular basis.

Policy U 1.3. Public utility rate structures should consider the impact of services fees on all economic segments of the community. If appropriate, this analysis may consider the need for a utility bill subsidy or donation programs to assist those households that are spending a disproportionate share of their income on utilities.

Policy U 1.4. Promote recycling, energy conservation, yard waste, and other demand management programs to reduce the need for rate increases and new facilities created by future growth.

Policy U 1.5. The Town shall maintain capital construction and reserve funds for each Town utility. The Town shall adequately fund all Town operated utilities.

Utility Goal 2: Provide for future growth

New utility improvements will be provided to adequately serve demands created by new growth.

Policy U 2.1. The proposed location of future utilities must be consistent and compatible with other plan elements.

Policy U 2.2. Provide utility services outside of the Town limits only when there is adequate capacity and the extension will not cause a long-term rate increase to existing utility customers.

Policy U 2.3. Work with Pierce County, neighboring jurisdictions, and other utility providers to ensure consistency between each jurisdiction's utility and to coordinate procedures for making specific land use decisions on multi-jurisdictional regional facilities to achieve consistency in timing and substantive requirement.

Policy U 2.4. Joint use of transportation rights-of-way shall be encouraged for new utilities whenever possible.

Policy U 2.5. New construction shall avoid the use of on-site septic systems. To reduce the extent of on-site sewage disposal, existing septic tanks should be eliminated when they are no longer functional or when sanitary sewer becomes available.

Policy U 2.6. The Town shall provide funding for utility facilities to maintain and enhance the Town Center.

Policy U 2.7 The Town should coordinate with private utilities, including telecommunication companies, natural gas and cable providers when Town-owned utility facilities are being installed or street construction projects are scheduled.

Policy U 2.8 The Town shall encourage the collocation of telecommunication facilities to reduce the unnecessary proliferation of individual, single-user towers. Collocation shall be required unless an applicant can demonstrate to the satisfaction of the Town that collocation on an existing tower is not feasible and not consistent with service quality and access for Town residents.

Policy U 2.9 The Town shall utilize performance standards for wireless communication facilities to minimize the visual impact of antennas and towers and to ensure quality service to Town residents.

Policy U 2.10 The Town shall utilize its existing SEPA authority to require a study of the impacts the development of the Master Planned Development area has on the existing Town utilities. Necessary upgrades should be funded by the development to the extent allowed by law.

Utility Goal 3: Respect the Environment
Utility operations shall be conducted in a manner that promotes conservation of resources and alternatives to fossil fuel sources.

Policy U 3.1 The Town shall encourage the use of alternative energy sources within the Town.

Policy U 3.2 The Town's regulations shall require protection of drinking water sources and aquifers.

Policy U 3.3 The Town shall cooperate with other jurisdictions and water purveyors to identify and develop drinking water sources for the Town's residents.