

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

BACKGROUND

Statewide Planning Goal 11: Public Facilities and Services

"To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development."

Lake Oswego adopted a Public Facility Plan (PFP) in 1997 [PA 1-97] which identifies needed wastewater collection and treatment facilities per OAR 660, Division 11. The applicable parts of the PFP and its subsequent updates are incorporated by reference into the Comprehensive Plan.

Urban and rural development shall be guided and supported by types and levels of urban and rural public facilities and services appropriate for, but limited to the needs and requirements of the urban, urbanizable and rural areas to be served. A provision for key facilities shall be included in each plan. Each jurisdiction shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500 persons.

“Timely, orderly and efficient arrangement” — refers to a system or plan that coordinates the type, locations and delivery of public facilities and services in a manner that best supports the existing and proposed land uses.

“Urban Facilities and Services” refers to key facilities and to appropriate types and levels of at least the following: police protection, sanitary facilities, storm drainage facilities, planning, zoning and subdivision control, health services, recreation facilities and services, energy and communication services and community governmental services.

Lake Oswego abandoned its municipal waste water treatment plant in 1964 and connected the municipal sewer collection system to the City of Portland’s Tryon Creek Treatment Plant. This was necessary to meet the requirements of the Federal Water Quality Act of 1965 which required a minimum of secondary treatment before effluent could be discharged into the Willamette River. The Act and associated federal and state funding for treatment plants significantly reduced pollution of the Willamette River and other Oregon waterways.

The Tryon Creek Treatment Plant operates under a waste discharge permit from the Oregon Department of Environmental Quality. Treated effluent is discharged into the Willamette River. Sludge is trucked to the City of Portland Columbia Boulevard Wastewater Treatment Plant for further processing and ultimate disposal.

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

The Tryon Creek Treatment Plant underwent a major renovation in 1976 to increase treatment capacity and to provide more complete secondary treatment of wastewater pursuant to Oregon Department of Environmental Quality Requirements. The plant is now designed for an average dry weather flow (ADWF) of 8.3 million gallons per day (mgd). The ADWF in 1988 was 6.34 mgd which was about 76 percent of capacity. In wet weather situations the plant has the capacity to treat hourly peak flows of 35 mgd for short periods of time. Recorded peak flows to the facility ranged from 13.5 to 28.2 mgd in a six year period from 1982 to 1987. Because of population growth in the service area, treatment plant expansion is expected to be needed before 2000. It is estimated that plant capacity of about 14 mgd average dry weather flow will be needed by the year 2010.

The City has an intergovernmental agreement with the City of Portland to treat sewage at the Tryon Creek Plant. Currently, about 55% of total flow to the plant comes from the Lake Oswego sewer service area. Lake Oswego pays Portland a proportionate share for the cost and operation of the Tryon Creek Plant.

Lake Oswego also has an intergovernmental agreement with the Unified Sewerage Agency of Washington County (USA) to treat wastewater originating in the western portion of the City's Urban Service Boundary (USB) at USA's Durham treatment plant. Area served by USA includes portions of Mountain Park and Westlake. Portions of the unincorporated USB along I-5, Kruse Way and in the Lake Grove area are also served by USA.

By the year 2000, DEQ discharge requirements will likely become more stringent. Willamette River water quality may have a significant impact on the discharge requirements with which the Tryon Creek and Durham Treatment Plants must comply. If the Willamette River is determined to be "water quality limited," total maximum daily loads (TMDL) could be imposed by DEQ for limiting parameters such as ammonia, phosphorus or bio-chemical oxygen demand (BOD).

A multi-jurisdictional study was initiated in 1992 to evaluate long term efficiency and cost effectiveness of sewage treatment in the Kellogg, Oak Lodge, Tryon Creek and Tri-Cities (KOLTT) service areas. The Kellogg facility serves the City of Milwaukie, Clackamas Service District #1 and portions of Gladstone. The Oak Lodge Plant serves the unincorporated Oak Lodge Sanitary Sewer District and portions of Gladstone, and the Tri-Cities facility treats sewage from West Linn, Oregon City and Gladstone. Each treatment plant has different capacities, service demands, financing and governance structures. The study will be completed by 1995 and will address the following question: "Should the existing treatment plants be maintained and expanded or be replaced with a new facility configuration as a means to enhance cost effectiveness and service efficiency." If a new service configuration, such as consolidation of two or more treatment facilities is chosen, it is unlikely to be implemented before 2010.

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

The Federal Clean Water Act required the creation of a Regional Wastewater Management Plan for the Portland area. This is a Metro responsibility which was first adopted by the Metro Council in 1980. The Plan is reviewed on an annual basis as part of Metro's continuing "208" Water Quality Program. The Clean Water Act requires that the Regional Plan accurately identify regional water quality management problems and their solutions, both short and long term. The Regional Plan must also delineate water quality management service areas for collection, transmission and treatment of wastewater. Lake Oswego has been designated under the Regional Plan as having responsibility for sewage treatment, transmission and collection system operation for the area contained within the City's Urban Services Boundary except for small areas sewered by USA. Local jurisdictions are required to coordinate their plans with Metro and the Regional Plan to qualify for federal funds for water quality programs.

Lake Oswego's sewer collection system consists of more than 170 miles of sanitary sewer line and provides service to more than 5,000 acres of residential, commercial and industrial properties within the City limits. Another approximately 1,200 acres within the City's Urban Services Boundary and the City of Rivergrove may ultimately be served by the City's sewer collection and transmission system. This would require an estimated 54 miles of collection system extensions. Almost all of the developed property outside the City, except for those served by USA and Dunthorpe-Riverdale Sanitary Sewer Districts, are on septic tanks. In most cases, these are small lots with inadequate replacement area. Septic tank failures have occurred and this has made it necessary for property owners to either connect to a public sewer system or construct expensive sand filter systems.

Infiltration and Inflow (I/I)* of storm and ground water poses a significant problem by burdening the collection system with excess water. Currently, the volume of I/I of storm water into the collection system during a major storm is between five and six times the sanitary flow volume. The City could reduce significant costs of constructing new major lines by reducing I/I which would prolong the life of sewer system and decrease operating expenses. Furthermore, infiltration and inflow must be reduced for continued conformance with regulatory requirements. Also, Lake Oswego's sewage treatment agreement with the City of Portland stipulates that the City shall work toward reducing I/I to maximize the design capacity of the Tryon Creek Treatment Plant.

One means of ensuring adequate treatment capacity for future domestic sewage is to minimize the strength of industrial wastes discharged to the sewer system. Lake Oswego has adopted an ordinance which requires pretreatment of all industrial wastes which could affect the operation of sanitary sewer system. This program is required by DEQ and Lake Oswego's intergovernmental agreement with Portland for sewage treatment.

Lake Oswego's varying topography often makes it very expensive, difficult and sometimes impossible to provide conventional gravity sewer service. The City Council in 1992 approved the use of Septic Tank Effluent Pumping (STEP) pressure sewer systems in certain situations. The STEP system can be an effective alternative to conventional gravity systems when properly maintained and installed. This

Goal 11 Public Facilities and Services

Section 4. Wastewater Collection and Treatment

system consists of a buried tank for settling and digesting wastewater solids, together with a pumped system to convey liquid to the gravity system. The construction of any pressure system requires approval by DEQ and supervision by the City engineer. Piecemeal installation is strongly discouraged, except for isolated and special case circumstances, such as on an interim basis until anticipated permanent facilities become available.

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the 1993 update of this element of the Comprehensive Plan.

- The Tryon Creek Treatment Plant underwent major renovation in 1976 to meet DEQ discharge requirements and to increase capacity. Flows from Portland and Lake Oswego use about 76% of the plant's capacity.
- By the year 2000 discharge requirements may become more stringent requiring additional improvements to the Tryon Creek Treatment Plant.
- Economic and efficiency considerations may cause significant treatment plant reconfiguration in those areas served by the Kellogg, Oak Lodge, Tryon Creek and Tri-cities plants by the year 2000.
- Oregon law and administrative rules require sanitary sewage treatment and collection to be included as part of an overall public facility plan.
- Infiltration and inflow of storm and groundwater water poses a significant problem by exceeding the collection system capacity.
- Lake Oswego has adopted an ordinance requiring pretreatment of industrial wastes before discharge into the sanitary sewer system.
- Metro has been designated as responsible for the Section 208 Wastewater Management Plan.
- Lake Oswego has approved the use Septic Tank Effluent Pumping Systems (STEP) in certain situations when gravity sewers can not be provided.
- The 1968 Lake Oswego Sanitary Sewer Master Plan was updated in 1987.

Goal 11 Public Facilities and Services

Section 4. Wastewater Collection and Treatment

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

Lake Oswego shall provide an adequate and efficient wastewater collection and treatment system within the Urban Services Boundary which:

- a. Meets the present and future needs of Lake Oswego residents and businesses;
- b. Complies with federal, state and local clean water requirements; and,
- c. Is self supporting.

POLICIES

1. Require developers to:
 - a. Provide adequate sanitary sewers to all new development; and,
 - b. Pay an equitable portion of costs associated with extending service.
2. Require all new and existing development within the City to connect to the City's sanitary sewer system and pay a system development charge.
3. Prohibit the repair or replacement of septic tank systems within the City unless it is not feasible to connect to the City sewer system.
4. Control and reduce infiltration and inflow of storm and ground water to the sanitary sewer system.
5. Prioritize the extension of sanitary sewer service as follows:
 - a. Declared health hazard areas within the Urban Services Boundary;
 - b. Property within the City limits; and
 - c. Other incorporated cities under contractual arrangement where sufficient capacity exists to provide service.
6. Allow the use of Septic Tank Effluent Pumping (STEP) Systems in those areas and situations where conventional gravity sewer systems are not practical.

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

7. Require pretreatment of wastes which could harm the wastewater treatment system or use excessive treatment capacity.
8. Prohibit the construction of structures which would prevent access to public sewer lines and easements.
9. Ensure that sewer utility revenues are adequate to meet the operating and maintenance costs of the sewer collection and treatment system and to fund required capital projects.
10. Operate wastewater treatment and collection facilities to meet or exceed federal, state and local standards.
11. Coordinate the City's water quality programs and expansion of the City's wastewater collection and treatment facilities and programs with:
 - a. The 208 Regional Wastewater Management Plan;
 - b. State, federal and regional programs and statutory requirements; and,
 - c. The plans of other area jurisdictions and service districts.

RECOMMENDED ACTION MEASURES

- i. Work with the City of Portland and the Unified Sewerage Agency of Washington County (USA) to ensure that the Tryon Creek and Durham Wastewater Treatment Plants maintain adequate capacity to ultimately serve lands within the Lake Oswego Urban Services Boundary.
- ii. Cooperate with Metro and other jurisdictions to identify efficient, economic and environmentally sound long term regional wastewater collection and treatment options.
- iii. Ensure the costs of extending sanitary sewers accrue to those who benefit through such measures as:
 - a. Connection fees based on the number of residential units or commercial or industrial equivalents;
 - b. Methods to pay for needed line over-sizing; and,
 - c. Payment of a systems development charge.
- iv. Maintain intergovernmental agreements with the City of Portland and USA to treat Lake Oswego's sanitary sewage at the Durham and Tryon Creek Treatment Plants which:

Goal 11 Public Facilities and Services

Section 4. Wastewater Collection and Treatment

- a. Are financially equitable;
 - b. Ensure the availability of adequate capacity to handle flows from the City of Lake Oswego;
 - c. Ensure that treatment and discharge complies with all state and federal clean water rules; and,
 - d. Provide for close cooperation and coordination in matters which may affect the City of Lake Oswego.
- v. Encourage water conservation to reduce the amount of wastewater discharged into the City's sanitary sewer system.
 - vi. Maintain and improve the existing sanitary sewer collection and treatment system through preventive maintenance and ongoing evaluation.
 - vii. Encourage Clackamas County to advise property owners seeking new septic system or repair permits within the Urban Services Boundary that they may be required to connect to the City's system when they are annexed to the City even if there are no documented problems with the existing system.
 - viii. Encourage Clackamas County to stop issuing new septic tank permits where there has been a pattern of recorded system failures or documented aquifer pollution.
 - ix. Require new sanitary sewers to be constructed using methods and materials which prevent infiltration and inflow.
 - x. Request Clackamas County to inform the City of septic failures and requests for repair within the Urban Services Boundary.

Goal 11 Public Facilities and Services

Section 4. Wastewater Collection and Treatment

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