

WATER SUPPLY FACILITIES

Water supply facilities north and south of the bay to near the boundary between Sections 17 and 20 (generally referred to as the South Beach area) are provided by the City of Newport. The area lying south of the boundary between Sections 17 and 20, including the municipal airport and the proposed Thiel Creek development area, are provided water by the Seal Rock Water District.

Existing Water Supply Facility Components:

The Newport Comprehensive Plan and portions of Chapters 3 and 4 of the "Water System Master Plan Update 1988 for the City of Newport, Oregon" (hereinafter referenced as the "Water System Master Plan"), provide an inventory of the components of the existing water supply system. Map W1 in the CH2M HILL update identifies the location of all existing primary water supply system components within the city and the urban growth boundary. Generally, the water supply system is in good condition. A brief summary of major components of the Newport water supply system and a general assessment of the system's components follows.

Supply: The City of Newport water service area, not including the Seal Rock Water District, consists of approximately 3,000 acres, which contains about 8,500 people. The service area is divided into three major pressure zones, or service levels, based primarily on existing terrain and existing and expected hydraulic profiles (Map W1). Big Creek provides the water supply for the city and has a water flow adequate to meet the city's need to about 1990-1992. The city has the earliest priority dates on water rights in Big Creek amounting to 6.45 million gallons per day from natural flow. Two raw water storage reservoirs with a combined storage right for 1,170 acre-feet of raw water are used to meet summer water demands. A portion of the lower reservoir has silted in, resulting in a limited loss of capacity. The city maintains an unutilized 6-cubic-feet-per-second water permit on the Siletz River.

Treatment: All of the water for the City of Newport is produced from the Newport Water Treatment Plant located on Big Creek. The recently improved plant has a 5.75 million gallon per day capacity.

Transmission, Pumping, and Storage of Treated Water: Treated water is pumped from the water treatment plant through a 16-inch pipeline. This pipeline branches near the plant into two pipelines, a 16-inch and a 12-inch. The 16-inch pipeline carries water to the southeast and to the second level reservoirs. Flow from this pipeline is also delivered to the first level distribution system. The 12-inch second level pipeline

delivers flow west to Big Creek County Road and west along 20th Street. Branching north from this primary 12-inch line, a 10 and 12-inch transmission pipeline supplies water from the treatment plant to the Agate Beach area. The South Beach area is served by a 12-inch bay undercrossing receiving water from the aforementioned 16-inch primary transmission line.

Five pump stations, not including second level pumps at the treatment plant, serve the city. The Nautilus Pump Station is subject to vandalism and will require extensive repairs to upgrade it to current standards. The four remaining pump stations meet the current demand and are in good condition.

The first level service area is served by two concrete reservoirs with a combined volume of 1.1 million gallons. These reservoirs have slow leaks and are in need of repair or replacement. The second level service area is served by two 2 million gallon steel reservoirs. A 40,000 gallon concrete reservoir at the Nautilus Pump Station serves the Agate Beach area but is in poor condition.

Recommended Water Supply Improvement Projects:

The Water System Master Plan analyzed the adequacy of the existing system by using a mathematical model. The model and the results of the analysis are included on pages 4-6 through 4-9 of the Water System Master Plan. The verified water system model was used to test various flow conditions such as maximum hour demand, reservoir refill, and fire flows during maximum-day demand periods. The existing water transmission and distribution system was tested. Additional computer test runs were used to determine the future parameters for the design of pipelines, pump stations, and reservoirs for the projected growth conditions. The results of the tests and conclusions about the adequacy of the current system provided the basis for the recommended Phase I improvements. The recommendations contained in the Water System Master Plan are summarized in the following subsection.

Table 1 (page 143) lists recommended water supply system improvement projects identified in the Water System Master Plan. The type of improvement and the increase in capacity (if applicable) is indicated in each project's title. The location of the recommended improvement and the service level with which each project is associated is indicated on Map W1. The projects listed in Table 1 are recommended to upgrade the existing system to meet the city's projected water flow requirements, including increased raw water availability, emergency storage, fire flows, peak flow demands, and equalization through the year 2010. The improvements requiring the most immediate attention are the Priority A projects proposed to be constructed during the first 5-year planning period.

Table 1
CH2M HILL, INC.
Recommended Water System Improvements

Anticipated
Year of Funding
Costs^a Construction^b Source(s)

| PHASE I, PRIORITY A--1988-1995 COMPONENTS | | | |
|---|---------------------|------|-----|
| 1. Silt removal, culvert and road work at Big Creek Reservoir No. 1 | \$120,000 | 1991 | GOB |
| 2. Siletz River raw water intake | 460,000 | 1992 | GOB |
| 3. Siletz River 16-inch water pipeline, 28,000 lf | 1,765,000 | 1992 | GOB |
| 4. WTP expansion to 7.75 mgd | 2,000,000 | 1992 | GOB |
| 5. South Beach 1.0 mg reservoir | 380,000 | 1995 | GOB |
| 6. Thiel Creek 1.0 mgd reservoir | 380,000 | 1995 | GOB |
| 7. Agate Beach 1.0 mg reservoir | 380,000 | 1993 | GOB |
| 8. Yaquina Heights 1.0 mgd reservoir | 380,000 | 1993 | GOB |
| 9. Altitude valves at existing 4 mg reservoirs | 50,000 | 1992 | GOB |
| 10. Repair or replace existing City Shops reservoirs | 380,000 | 1992 | GOB |
| 11. Modify control to N.E. 7th Street 3rd level pump station | 20,000 | 1993 | GOB |
| 12. N.E. Nautilus Street 3rd level pump station, 350 gpm | 110,000 | 1994 | GOB |
| 13. PRV- 1-6"; 1-8" | 65,000 | 1993 | GOB |
| 14. Arterial and transmission pipelines | 2,161,000 | 1995 | GOB |
| PHASE I TOTAL ESTIMATE COSTS | \$8,651,000 | | |
| PHASE II, PRIORITY B--1996-2000 COMPONENTS | | | |
| 1. WTP expansion to 9.75 mgd | \$200,000 | | GOB |
| 2. King Ridge, 1.0 mg reservoir | 380,000 | | GOB |
| 3. South Beach 2nd level pump station, 570 gpm | 175,000 | | GOB |
| 4. PRV- 1-4"; 4-8" | 102,000 | | GOB |
| 5. Arterial and transmission pipelines | 4,027,000 | | GOB |
| PHASE II TOTAL ESTIMATED COSTS | \$ 4,884,000 | | |
| PHASE III, PRIORITY C--2001-2010 COMPONENTS | | | |
| 1. Upper Agate Beach 1.0 mg reservoir | \$380,000 | | GOB |
| 2. Yaquina Heights 4th level pump station, 350 gpm | 110,000 | | GOB |
| 3. Thiel Creek 3rd level pump station, 300 gpm | 100,000 | | GOB |
| 4. PRV- 1-6"; 2-8" | 92,000 | | GOB |
| 5. New 12-inch bay undercrossing pipeline | 550,000 | | GOB |
| 6. Arterial and transmission pipelines | 1,240,000 | | GOB |
| PHASE III TOTAL ESTIMATED COSTS | \$2,472,000 | | |

Source: "Water System Master Plan Update 1988 for the City of Newport, Oregon," CH2M HILL.

Note: Reference Map W1.

a A1 August 1987 costs (ENR 4430); b The anticipated year of construction may vary depending upon the rate and direction of growth and availability of funding; mgd = million gallons per day; mg = million gallons; gpm = gallons per minute; GOB = general obligation bonds.

Supply: Two major projects during the first 5-year planning period are designed to increase raw water supply. These projects include the following:

- Developing the Siletz River raw water supply by constructing intake and pipeline facilities
- Increasing raw water storage by removing silt in the Big Creek Reservoir No. 1

Treatment: Water treatment is planned to be increased to 7.75 million gallons per day by expanding the water treatment plant. This expansion will accommodate the water received from the Siletz River raw water source.

Transmission, Pumping, and Storage: Major recommended pipeline and pumping developments are designed to maintain adequate residential, commercial, industrial, and emergency water volumes and pressure during peak demands. These developments include the following:

- > A 16-inch raw water pipeline from the Siletz River to the water treatment plant.
- > A third level pump station on Nautilus Street that, in combination with a new storage reservoir, will supply water to the Agate Beach area.
- > New arterial and/or transmission pipelines to improve or establish delivery to the Thiel Creek area, Agate Beach area, and the east central city and west central urban growth boundary area.

Water storage requirements were derived by considering the needs for equalizing pressure, fire reserve, and emergency storage. Priority A projects designed to significantly increase water storage include four 1-million gallon reservoirs. These reservoirs will serve the Agate Beach second and third service levels, the third service level area north of Highway 20 and near the urban growth boundary, the proposed Thiel Creek development area south of the airport, and the first level service area of the northern South Beach area.

During the second planning period (1995-2000), the water treatment plant capacity will be increased to 9.75 million gallons per day, and storage capacity will be increased by adding one 1-million gallon reservoir and a second level pump station, and improving arterial and transmission pipelines. The third planning period (2001-2010) will be marked by the addition of two pump stations serving the upper service levels, a 1-million gallon reservoir, and a new bay undercrossing pipeline.

It is recommended that the city provide water service to the Thiel Creek development area when facilities can be constructed. Until then, water will be provided to the development from the Seal Rock Water District. Anticipated city water system improvements to the area would include construction of a new transmission system from the existing city water system in the South Beach area south to the development. To realize

this development south, the existing city system will require modifications, including the construction of two new pressure reducing valves on the south side of the bay and new connecting pipelines to the second service level on the north side of the bay.

Funding:

The cost estimates in Table 1 are based upon current costs for constructing only the major arterial and transmission pipelines, pump stations, and storage reservoirs shown on Map W1. The costs of distribution pipelines, water service connection pipelines to structures, and any special metering devices to serve all potential users have not been included. The Water System Master Plan (pp. 5-5 through 5-6) identifies material type and construction technique assumptions used in producing the cost estimates.

Water development projects in Newport generally have been financed through General Obligation Bonds issued by the city. It is expected that projected water development projects will continue to be financed through general obligation bonds issued by the city. General obligation bonds are primarily supported by the city's taxing power and credit. The bonds reduce the city's available debt level because local governments are limited in the amount of debt which can be secured overall.