

# Water Infrastructure Availability

## North Bethany Planning, Concept Plan Phase

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CH2M HILL has been tasked to review the existing water and sewer master plans and consult with the utility providers to identify the facilities and their availability for the North Bethany Area Concept Plan project. This technical memorandum summarizes the initial review of the water master plan and our first meeting with Tualatin Valley Water District (TVWD) staff. An additional meeting with TVWD will be made to discuss flow demands and system capacity once the development concept plans are developed.

### Background

The North Bethany planning area is approximately 800 acres in size and is located in Washington County. It lies directly north and contiguous to the Tualatin Valley Water District (TVWD) service boundary, north of Springville Road and generally centered on Kaiser Road.

### Water System Master Planning

The district is currently in the initial stages of a water system master plan update. The planning has not yet progressed to the point of considering the North Bethany Area. When it does, the master plan will address the needs for providing adequate water supply at required minimum pressures, transmission piping, and system storage. It must be able to satisfy the maximum water demands that will be placed on the system by the completed development. The expectation is that the development will occur over time and that the water system can be developed over time also to provide the required service as needed. The TVWD is willing to annex the planning area into the district and is willing to commit to serving the area. The following information will, however, provide a reasonable overview of the possibilities of service to the new planning area.

### General Service Area Pressure Levels

The North Bethany area topographic elevations lie within two pressure service levels of TVWD – two-thirds of the planning area lies in the 575-foot zone and about one-third lies in the 435-foot zone. Both of these zones abut the TVWD northern boundary and one of the

Joint Water Commission (JWC) connections is close, minimizing the transmission piping issues to serve the planning area. The 435-foot zone is essentially gravity service and the 575 is a pumped service, with pressure control provided with storage facilities in both zones.

## Water Supply

The TVWD is currently purchasing wholesale water from the Portland Water Bureau (PWB) through a ten-year agreement signed this year. It uses capacity it owns in the Joint Water Commission (JWC) - water supply facilities and a varying amount of additional water it can lease from the JWC partners, 10 mgd and 6 mgd (varies), respectively. They also have water rights on the Willamette River at Wilsonville along with capacity in the Willamette River diversion and treatment facilities. The Willamette River supply is not currently used because infrastructure to convey it into the district is not in place. TVWD anticipates that the Willamette River water will replace the PWB contract water by the end of the ten-year water purchase agreement – year 2016. In addition to these significant supplies, the district is also currently developing an aquifer storage and recovery system.

TVWD believes adequate water supply is in place to initiate the North Bethany development. As development occurs source capability will grow to meet the demands of the TVWD system users.

## Transmission and Pumping

The water supply comes from various parts of the system and the transmission grid is strong and capable of moving water around the system. Specific to the North Bethany planning area, TVWD has significant transmission capability from the Cornelius Pass connection to the JWC 66-inch transmission main. It feeds into the 435-foot service zone splitting into a 48-inch and a 20-inch main (this one feeds north toward the North Bethany planning area). The PWB supply is brought into the system and feeds the 435-foot zone by gravity. Transmission lines are in place to feed the Springville Road Reservoir near the planning area.

The Springville Road Reservoir is within a half mile of the planning area border and could be the point from which to provide a transmission main and pump station to the southeast corner of the planning area and into the upper reaches of the 575-foot zone.

Another entry point into the planning area is at Kaiser and Springville Roads where a transmission can be brought and a pump station as needed can be built that will pump into the 575-foot zone.

Other connections can be made on the west end of the planning area via the 20-inch off the JWC Cornelius connection, directly into the 435 zone without pumping. If the urbanizable area is extended to the west through future Urban Growth Boundary expansions, this 435 service approach can serve it, too.

## System Storage

The 435 zone has 25 million gallons (MG) of storage with an additional 10 MG planned for construction at the Springville Road site within the next 2 years, bringing the total at that site to 20 MG. Water from this 435 level will be the logical place to provide most of the storage needs for the North Bethany area, although it will all have to be pumped. Pumping from this location will provide a good turnover for the Springville Reservoir site and help to maintain good water quality even in the winter low water use months. It will need to be determined if the new planning effort will impact the need for additional storage capacity.

The 575 zone has four tanks totaling 4 MG. These tanks are further from the planning area than the Springville site.