

Water Shortage Response Plan

Public Works – Water Resources
Program

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Overview

Water system planning, as required by WAC 246-290-040, provides the framework for making key water supply management decisions. An integral part of this comprehensive plan is the city's course of action in the event of possible water shortages. A water shortage can be described as any situation in which the water supply is insufficient to meet the demand. A shortage may occur for a number of reasons, but it is most commonly a result of drought conditions. Other factors that can cause a water shortage include contamination, inadequate planning, shallow wells, inadequate pumping, water waste, and losses due to emergency conditions such as an earthquake. This plan discusses shortages associated primarily with drought conditions. Droughts are temporary, but can recur more frequently than other causes. During July through September 1994, Tumwater was hit hard by record-breaking temperatures, resulting in a high demand for water, almost three times the demand for an average summer day. Under warm weather conditions, the water consumption is may be up to three times higher than the average day.

Water Year 2000 - 2001

As rainfall levels for the 2000-2001 water-year reach the lowest point since 1948, this plan establishes outreach and water shortage response practices for the utility and customers, both for 2001 and future years. It is important that the utility help consumers understand the need to make wise use of the resource and to make their demand decisions accordingly. Also, it is important to ensure that the utility is prepared for drought or any shortage that may occur and the customer is receiving the highest quality service possible.

Several indicators show Tumwater is very likely to experience a water shortage in 2001. The rainfall total for the months October 2000 through March 2001 is just over 20 inches. Under normal conditions, the City receives the majority of its normal annual average of 50" of precipitation during this period. It is estimated that Tumwater's aquifers recharge at an average rate of 33" per year, almost entirely from local precipitation. Since the City's source of water is groundwater, and that source is almost entirely precipitation dependent, rainfall is the most visible indicator of drought conditions; other factors should also be examined to understand the full impact.

Snowpack and stream flows can also be used as indicators to determine low water conditions. The snowpack for the water year 2000 – 2001 is between 50% - 60% normal conditions. The usual maximum is reached in late March or early April (Figure 1). Although snowpack is not a factor in recharge of local aquifers, it is an indicator of a general lack of precipitation for the area and suggests the overall condition of northwest streams and rivers in the upcoming summer months.

