

Information Needed for Reduction in Source Sizing Requirement

Public Drinking Water Systems are required to have sufficient source capacity to meet both (1) the anticipated water demand on the day of highest water consumption ("Peak Day Demand") and (2) the quantity needed for the entire year ("Average Yearly Demand"). Both demand types apply to indoor water use, and outdoor water use if a water system also supplies irrigation water. The Director may allow a reduced source sizing requirement per R309-510-5 if the water system presents sufficient and acceptable water use data justifying the reduced source requirement (instead of the default source requirements in R309-510-7). The reduction request and the water use data supporting the request are reviewed on a case-by-case basis due to a wide variety of factors to consider and differences in water systems. It is recommended that, prior to collecting or compiling the water use data for a reduction request, you meet with the Division of Drinking Water engineering staff to understand the information needed for a reduction request and to establish a data collection protocol.

The list below outlines typical issues to address when requesting a reduction in the source sizing requirement. The review will include, but is not limited to, the issues identified below.

Intent of the Request

- Specifics of reduction request (e.g., source sizing, peak day or yearly average demand, indoor water use, etc.)
- Proposed reduced amount versus the default requirement

Water System Type, Size, Complexity, and Water Use Demand

- Type of water system (e.g., community, non-community, etc.).
- Size and complexity of water system.
- Types and purposes of water use (e.g., industrial, residential, restaurant, camp ground, mixed use, etc.).
- Water system configuration and operation strategy in providing redundancies (backup power, spare parts, number of sources, service area served by multiple tanks or sources, etc.).
- Redundancy of water sources (e.g., emergency source, wholesale connection, etc.).
- Reliability and consistency of water sources (e.g., range of seasonal fluctuation of spring flows, reliability and availability of additional water sources, etc.).

Equivalent Residential Connections

- If Equivalent Residential Connections (ERCs) are used, rationale and methodology in determining number of ERCs for present connections and estimated future connections.
- Accounting of commercial, industrial, and other significant water uses if applicable.

Future Growth and Usage Projections

- Extent that the system is built out and the history relevant to growth & water system capacity.
- Future development and annexation potential within the service area of the water system.
- How future growth is determined and controlled (e.g., zoning ordinances, established process in reviewing and approving new developments, master plans, etc.).
- Current demand versus capacity needed to meet obligated and future demands.

Indoor versus Outdoor Water Use

- Extent of service connections that are served by a secondary irrigation system or do not have outdoor water use demand (i.e., outdoor water use demand is excluded from the drinking water system).

- How the indoor and outdoor water use data is separated and measured.
- Future plan for conversion from an irrigation system to drinking water or vice versa.
- Urban versus rural (more irrigation use) land use.

Water Use Data

- Actual water use data indicative of peak day water use.
- Actual data indicative of indoor water use during peak day demand.
- Types of water use data (i.e., metered at the service connections, metered at the sources or pump stations, etc.).
- Tank levels and associated water outflows during the study period if using water use data metered at the sources and pump stations.
- Sufficient data to establish a statistically significant demand value (e.g., sufficient data points to represent or account for all water uses, sufficient data points indicative of historical trend such as a minimum of 3 years, removing the outliers of non-usage service connections from the number of ERCs used for calculation when the water use data were metered at the service connections, etc.).

Water Loss

- Assessment of water loss through the distribution system if the water use data is metered at the service connections.
- Accounting of water loss in peak day estimates.

Safety Factor

- Safety factors applied in the analysis and rationale.
- Examples
 - Redundant or excessive available storage capacity.
 - Emergency connection to another water system.
 - Reduced source sizing requirement being 12% above the actual peak day indoor water use data.