

## Information Needed for Reduction in Source Sizing

Public Drinking Water Systems (PWSs) 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 irrigation water use if a drinking water system also supplies irrigation water. The Director may allow a reduced source sizing requirement per Utah Administrative Code R309-510-5 if the water system presents sufficient and acceptable water specific data justifying the reduced source requirement (instead of the default source requirements in R309-510-7). The reduction request and the 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.

Prior to collecting or compiling the data supporting a reduction request, the PWS representative should **consult with the Division of Drinking Water engineering staff to identify 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. The review will include, but is not limited to, the issues identified below.

### Intent of the Reduction Request

- Specifics of sizing reduction being sought (e.g., reduction in source sizing; reduction in 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 (e.g. number of sources, number of connections, area served, facilities, ability to move water from multiple locations)
- 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 (e.g., 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, period of record, etc.).

### Equivalent Residential Connections

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

### Future Growth and Usage Projections

- Extent of the service area or the water system that is built out.

- History relevant to growth and water system capacity.
- Future development and annexation potential within the service area of the water system.
- How future growth is determined and managed (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 Irrigation Water Use**

- Extent of service connections that are served by a secondary irrigation system versus the ones that do not have irrigation water use demand (i.e., the information needed to estimate the irrigation water use demand imposed on the drinking water system).
- How the indoor and irrigation water use data is separated and measured.
- Future plan for conversion from an irrigation system to drinking water or vice versa (if applicable).
- Urban versus rural (more irrigation use) land use.

### **Water Use Data**

- Actual water use data indicative of **peak day** demand. (e.g., daily data from residential meters, daily metered/measured data from sources and storage sources, etc.)
- Actual data indicative of **indoor water** use during peak day demand (if use data includes indoor and irrigation use); how is it separated and accounted for.
- 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 or the majority of 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 amount being 12% above the actual peak day indoor water use data.