

## Information Needed for Reduction in Storage Sizing Requirement

*Public Drinking Water Systems (PWSs) are required to have sufficient "equalization storage" capacity to meet the average day demands for indoor and outdoor use, and fire suppression storage volume if the water system is equipped with hydrants for fire suppression or is required by the fire authority to provide fire flow. The default "equalization storage" volumes are outlined in R309-510-8 and Tables 510-4 and 5. The Director may allow a reduced storage requirement per R309-510-5 if the water system presents sufficient and acceptable water use data justifying the reduced storage requirement. The reduction request is reviewed on a case-by-case basis due to the wide variety of factors and differences in water systems. It is recommended that, prior to collecting or compiling water use data for the reduction request, you meet with the Division of Drinking Water engineering staff to understand the information needed for a reduction request and/or to establish a data collection protocol.*

*The lists below outline of typical issues to address when requesting for reduced storage 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., storage sizing, indoor water use, fire flow, etc.).
- Proposed reduced amount versus the default requirement.

### Fire Suppression Storage

- A statement from the Local Fire Authority indicating fire suppression requirement if the water system is equipped with hydrants for fire suppression or is required by the fire authority to provide fire flow.

### Nature of Water System and Water Use

- Type of water system (e.g., transient, community, or non-transient non-community).
- Size and complexity of water system.
- Types and purposes of water use (e.g., industrial, residential, restaurant, camp ground, mixed use, etc.). If Equivalent Residential Connections (ERCs) are used, rationale and methodology in determining number of ERCs for present connections and estimated future connections.
- Water system configuration and operation strategy in providing redundancies (spare parts, service area served by multiple tanks or sources, etc.).
- Operation strategy in dealing with water outage and minimizing risk to public health.
- Capacity of water sources and reliability (e.g., emergency source, wholesale connection, etc.).
- Reliability and consistency of water source (e.g., range of seasonal fluctuation of spring flows, gravity feed source, pumped source that is covered by two independent substations or built-in generator or a transfer switch, etc.).

### 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 the service connections that are served by a secondary irrigation system or do not have irrigation demand (i.e., outdoor water use demand excluded from the drinking water system).
- How indoor and outdoor water uses are separated and measured.

- Future plan of conversion from an irrigation system to drinking water or vice versa.
- Urban verses rural (more irrigation use) land use.

#### **Water Use Data**

- Actual average day water use data.
- Types of water use data (i.e., metered at the service connections, metered at the sources or pump stations, etc.).
- Sufficient data to establish a statistically significant 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, etc.).
- Peak Instantaneous Demand when request is for no storage.

#### **Water Loss**

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

#### **Safety Factor**

- Safety factors applied in the analysis and rationale.
- Examples
  - Excessive available source with backup power or means of conveyance.
  - Emergency connection to another water system or another emergency source.
  - Reduced storage sizing requirement being 10% above the actual average day indoor water use data.