

Mason County Interim Fire Flow Standards for Group A Public Water Systems

These interim standards shall be applied to all new or expanding Group A Community Water Systems (as defined in WAC 246-290) only and will apply until final standards are adopted as part of a Coordinated Water System Plan for Mason County.

DEFINITIONS:

Service Area Boundary:

A service area boundary of a public water system holds within it 1) its existing service area [RCW 70.116.030 (6) and WAC 246-293-110 (11)] and 2) its future service area [WAC 246-293-110 (12)]. Generally, a public water system's service area encompasses those areas that are currently being provided service, as well as those areas where the public water system is planning on providing service in the future.

Purpose:

Delineation of service areas helps to prevent overlapping or redundant services, which can be costly to the utility and its customers. Clear identification of areas of responsibilities allows for consistent and logical planning. The assumption is made that a utility has the ability to provide service in a timely and reasonable manner within its service area boundaries and is provided the right of first refusal. Service area boundaries are delineated during the development or revision of an ACWSP. Service areas that are larger than the system's existing service area allow for future system expansion.

Group A Water Systems:

Group A water systems are defined as a public water system providing service such that it meets the definition of a public water system provided in the 1996 amendments to the Federal Safe Drinking Water Act (Public Law 104-182, Section 101, Subsection b).

Group A Water Systems are further defined as:

- (a) Community water system means any Group A water system providing service to fifteen or more service connections used by year-round residents for one hundred eighty or more days within a calendar year, regardless of the number of people, or regularly serving at least twenty-five (25) year-round (i.e. more than one hundred eighty days per year) residents.

(Examples of a Community water system might include a municipality, subdivision, mobile home park, apartment complex, college with dormitories, nursing home, or prison.)

New Residential Development:

New residential development includes improvements to vacant land, such as all activities associated with the subdivision of property (including short and large lot subdivisions), construction of new residential dwelling units (single or multi-family), mobile/manufactured home park or similar residential uses.

Existing Residential Development:

Existing residential development includes property that is currently developed, supplied by a water system and a service area has been delineated to accommodate the maximum number of lots/residences to be served by the system design.

Expansion:

An expansion means additions, extensions, changes or alterations to an existing source, transmission, storage or distribution facilities that will allow the system to increase in size its existing service area and/or number of approved service connections. Exceptions:

- A system that connects new approved individual retail or direct service connections onto an existing distribution system within an existing service area; or
- A distribution system extension in an existing service area identified in a current and approved water system plan or project report.

Nested storage:

Nested Storage means one component of storage is contained within the component of another.

Standby Storage:

Standby Storage means the volume of stored water available for use during a loss of source capacity, power, or similar short-term emergency.

The standby storage component or the fire suppression storage component, whichever volume is smaller, can be excluded from a water system's total storage requirement providing that such practice is not prohibited by: (1) a locally developed and adopted Coordinated Water System Plan; (2) local ordinance; or (3) the local fire protection authority or County Fire Marshal (See WAC 246-290-235(4)).

NEW RESIDENTIAL DEVELOPMENT

- **New Residential Development without alternative measures to reduce flow requirements.**

New residential developments with their own sources of public water supply shall have a minimum of 120,000 gallons of water storage dedicated for fire suppression available at all times. This volume of storage shall be in addition to any volumes required by DOH for approval of a public water system. This standard comes from the International Fire Code (IFC) requirement of 1000 gallons per minute flow for 120 minutes.

- **New Residential Development with alternative measures to reduce flow requirements.**

Reductions in fire suppression storage or fire flow requirements may be allowed if the development has instituted certain measures that make it possible for reduced demands for fire suppression purposes. Such measures as density of development, types of construction, increased building set-backs could allow for reductions in the fire storage or needed fire flows. The Mason County Fire Marshall shall review any proposals for reductions in fire suppression capacity on a case-by-case basis prior to an approval for fire storage or flow reductions.

- **Fire hydrant spacing requirements**

The hydrant spacing for all residential developments shall be in accordance with the IFC requirement of one hydrant for every 500 feet, or less.

- **Minimum distribution system pressures during active fire suppression activities**

The State Department of Health requires that a minimum pressure of 20 PSI shall be maintained throughout the water distribution system under the hydraulic condition of concurrent maximum day flow plus fire flow. This minimum pressure shall apply at the point where the designed volume of equalizing storage and fire suppression storage has been depleted. See “chapter 246-290-230 (6) WAC – Distribution Systems” for this requirement (in the state drinking water system rules).

- **Transmission Lines**

Transmission lines shall meet the current minimum pressure requirements of WAC 246-290.

- **Minimum pipe size**

The IFC requires a minimum 8-inch diameter pipe for non-looped lines, and 6-inch diameter pipes for looped lines, for new or replacement distribution mains.

- **New residential development with variances for residential in-house fire sprinkler systems**

Developments with ordinances, by-laws, or other governing controls requiring all residences to be constructed with internal fire sprinkler systems may have their fire suppression storage reduced to a minimum of 60,000 gallons, in accordance with allowance proved by the IFC. Additional reductions are allowed for “*FIREWISE*” designs and/or use of alternate fire resistant construction materials. Conservation of water may also provide for additional reductions for fire suppression storage or the fire flow requirements. The Mason County Fire Marshall should be contacted on a case-by-case basis to see what levels of reduced fire storage may be associated with such elements as availability of emergency water sources, alternate emergency egress capacity, combustibile materials management, and use of alternate construction materials.



EXISTING RESIDENTIAL DEVELOPMENT

The requirements of the IFC, as given above, also apply to facility improvements or upgrades to Group A Community Water Systems within existing residential developments, except as follows:

- System distribution main expansions or replacements shall be designed to meet the current minimum standards as outlined in WAC 246-290.
- Fire suppression storage shall be based on a minimum of 500 gallons per minute (gpm) flow for 30 minutes duration, which equates to 15,000 gallons for fire protection, and is also consistent with stipulations in the State Water System Coordination Act. The minimum dedicated fire suppression storage volume at any time shall not be less than 15,000 gallons. This minimum

would be in addition to other storage volumes required for public water systems under the state drinking water rules and design requirements.

- If water is provided from other sources for fire control purposes, the gallon requirements for fire storage requirement may be reduced by 25 %.
- Draft fire hydrants may be permitted only with approval by the Mason County Fire Marshal.
- An additional 25% reduction in fire suppression storage may be granted for use of "*FIREWISE*" design throughout the development, and/or if alternate fire resistant construction materials have been used for residential housing construction.
- Nested storage may be allowed; However, the Mason County Fire Marshal shall review all proposals for nested storage to ensure that **under no conditions shall the volume of fire storage be reduced below a minimum of 15,000 gallons/500 gpm for 30 minutes (unencumbered).**
- Expansion of an existing Group A Community Water System beyond the existing established service area shall be reviewed by the Mason County Fire Marshal and applicable area Fire District to determine impacts and availability of water in the system to adequately serve additional connections.