



Orange County Fire Authority Community Risk Reduction INFORMATIONAL BULLETIN 12-99

Subject: Remote Single Family Residence Water Supply

Applicability: This Bulletin may be utilized only when a project is located in a rural portion of the County (e.g. Silverado, Trabuco, Modjeska Canyons) where municipal water systems are not adequate for hydrant flow or sprinkler demand. Application of the Bulletin is at the discretion of the Orange County Fire Authority (OCFA). This Bulletin does not normally apply to commercial buildings or residential tract developments.

Criteria For Review: Applications will be reviewed on a case-by-case basis. The following items must be addressed:

- 1) The applicant provides adequate justification in the form of a request for Alternative Materials and Methods (AM&M).
- 2) An adequate emergency vehicle access roadway is required.
- 3) NFPA 1142 (Water Supplies for Suburban and Rural Fire Fighting) will be used to calculate the minimum water supply. All calculations will include an additional safety factor of 2 (for remoteness, hazardous vegetation, and difficult terrain).
- 4) Bottom of tank elevation must be at least 5 ft. above the hydrant 4 in. connection.
- 5) Landscape fuel modification plan will be addressed.
- 6) If the lot is located within a Fire Hazard Severity Zone, special building construction design features from the current California Wildland-Urban Interface Code are likely required.

The following example is offered to demonstrate an acceptable compliance strategy:

Example: An applicant is proposing construction of a two story, 2,000 sq.ft. residence that will be more than 1,000 ft. from the nearest public fire hydrant. The location is a typical canyon setting with narrow roads, steep grades, wildland interface, etc. The applicant uses NFPA 1142 to propose the installation of a 11,000 gallon water tank dedicated to fire protection that will serve both the fire sprinklers and a private fire hydrant near the home.

Home volume = 1,000 sq.ft. x 25 ft. = 25,000 cu.ft. (10 ft. ceilings and 10 ft. gabled roof)
Occupancy hazard classification number = 7
Construction classification number = 1.5

Water Supply = $(25,000/7) \times (1.5) \times (2) = 10,714$ gal.

Applicant's Justification for Acceptance: The proposed system will provide a minimum of 22 minutes of firefighting capacity when using 500 gpm. This should be sufficient time to allow firefighters to connect to the nearest public fire hydrant, within approximately 1,000 feet, and reach the residence while fighting the fire.