

# FIRE HYDRANT SPACING AND FLOW RATES

## Development Standard #2

This standard shall apply to Fire Hydrant requirements for development inside of a water purveyor's district. All development inside of a water purveyor's district boundaries is required to have their fire water infrastructure provided by that purveyor. A private stored water system is not allowed when a development is served by a water purveyor unless approved by the Fire Chief or designee.

**Exception:** If the water purveyor notifies the Fire Department in writing that it cannot provide service to the proposed development, the Fire Department may allow a stored water system.

### I. FLOW RATES

- A. Individual hydrant flow rates for buildings having a fire area which does not exceed 3,600 sq ft shall be determined according to Table I (below) of this standard. Flow rates for all other structures shall be determined according to fire flow requirements found in Appendix B, and Table B105.1 of the California Fire Code.
- B. All flows are measured at 20 psi residual pressure.

TABLE I.

Area Type / Acres	Hydrant Spacing	Minimum Hydrant Flow Rate
Commercial	300 ft	1,250 gpm
Urban & Rural Developed Neighborhood	500 ft	750 gpm
Rural 5 to 10 Acres	600 ft	500 gpm
Rural Over 10 Acres	800 ft	500 gpm

**Exception:** Tier I Commercial Wineries less than 5000 net square feet in size, that are not located in a Water Purveyor's district, shall be required to meet Development Standard #3 for stored water.

## II. SPACING POLICY (CFC, Appendix C)

- A. Spacing for one- and two-family dwellings shall be according to Table I (above) of this standard. Spacing for other than one- and two-family dwellings shall be provided in accordance with Appendix C of the California Fire Code for the protection of buildings, or portions of buildings, hereafter constructed.
- B. Spacing is based on the distance between hydrants along an approved access road. Specific locations to be determined by the Fire Department prior to project approval.
- C. Irrespective of distances provided in the referenced tables, additional hydrants may be required at intersections and near driveways serving buildings at risk.
- D. Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1 of the California Fire Code.
- E. Fire hydrants shall be required on both sides of the roadway whenever:
  - 1. Roadway easement widths are greater than 60 ft.
  - 2. A center median strip exists.
  - 3. The roadway has four or more traffic lanes.
  - 4. In the opinion of the Fire Chief or designee, the use of fire hydrants on the opposite side of the roadway may prove operationally difficult, or may create unsafe working conditions.
- F. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.

## III. HYDRANT REQUIREMENTS

- A. When required, a fire hydrant shall be installed no closer than 50 ft and no further than 150 ft traveled path distance to the dwelling. Specific location to be determined by the Fire Department.
- B. Water mains for fire hydrants shall be installed in accordance with National Fire Protection Association (NFPA) Standard #24 and shall be a minimum of 6 inches in diameter.
- C. All fire hydrants shall be equipped with a shut-off (street) valve.
- D. Curb faces shall be painted red to 7.5 ft on both sides of the hydrant. (California Vehicle Code Section 22514).

- E. Maintenance of private hydrants is the responsibility of the property owner. Fire Department shall have unrestricted access to on-site fire hydrants for inspection and testing purposes.

#### **IV. GENERAL REQUIREMENTS**

##### **A. Fire Hydrant Discharge Outlet Configuration**

1. One- and Two-Family Dwellings (Residential Standard)
  - a. One 4 in. discharge outlet and one 2-1/2 in. discharge outlet.
2. Other than One- and Two-Family Dwellings (Commercial Standard)
  - a. Minimum one 4 in. discharge outlet and two 2-1/2 in. outlets.

- B. All outlets shall have national standard threads and metal caps to protect threads (NFPA 24, section 7.1.2).
- C. The center of the lowest outlet shall be a minimum of 18 in. above grade and a maximum of 24 in. above grade.
- D. The fire hydrant shall have pentagonal operating nuts.
- E. Plans and specifications for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction (CFC 501.3).
- F. Fire hydrants shall be installed and made serviceable prior to and during the time of construction (CFC 501.4).
- G. Hydrant locations shall be identified by the installation of approved blue reflective markers located in the roadway 90 degrees to the hydrant. Markers shall be installed per Public Works Standards.
- H. A 3-foot clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved. Posts, fences, vehicles, growth, trash, storage and other materials or things shall not be placed or kept near fire hydrants. (CFC 508.5.5).