

# FIRE PROTECTION WATER

## 1. I am planning to buy a parcel in Santa Clara County. What Fire Marshal Requirements do I need to know about to build my dream home?

- A. Visit our **Land Development** webpage, which explains the process and refers you to a matrix of Fire Marshal Standards for Residential, Residential Subdivision, Commercial and Agricultural Exempt development.

## 2. I'm planning to develop property in a rural part of the County for non-residential use. What problems might I run into?

- A. Lack of adequate fire protection waters supply is the most frequent problem in areas where no recognized water purveyor is available. On-site water storage in large quantities requiring one or more standard hydrants pressurized by a fire pump can be quite expensive. A typical installation will require 1,500 gpm (gallons per minute) at 20 psi (pounds per square inch) for 2 hours of operation, which equates to 180,000 gallons in storage, unless your project can qualify for our Isolated/Rural exception. This will be in addition to water needed for domestic, industrial or irrigation purposes. See Standard CFMO-W2 for details. You may also be required to provide fire sprinklers if your project proposes structures over 3,600 square feet, is located in the Wildland Urban Interface (WUI) or if sprinklers are required by the Building Code. To see which WUI zone your rural property is in see our **Wildland Urban Interface** webpage where you can view of the **Santa Clara County Draft WUIFA** map both in PDF and Google Earth map formats.

## 3. What do you mean by the term "fire-flow"?

- A. In accordance with the County Fire Code (CFC) "fire-flow" is the flow rate of water supply, measured at 20 pounds per square inch (psi) (138kPa) residual pressure, that is available for firefighting." This refers to available water supply from a fire hydrant.

## 4. What is the "Isolated/Rural" exception?

- A. Your non-residential project may qualify for our Isolated/Rural exception if it consists of a single structure or a group of 2 to 3 structures, that are located at least 50 feet from a property line or other structure or group of structures. Fire-flow is determined using Table B105.1 of the County Fire Code. Duration shall be for a minimum of 30 minutes rather than the duration listed in the table, reducing the quantity of fire protection water supply in storage. Check with our Land Development Deputy to see if your project qualifies at (408) 299-5763.

## 5. How does the Fire Marshal's Office determine the required fire-flow for my project?

- A. The fire-flow requirement is determined using the gross square footage and California Building Code construction type as indicated by Table B105.1 of the 2007 County Fire Code.

## 6. Why do I need to contact my water purveyor for fire-flow information?

- A. Pressurized hydrant systems in the unincorporated area of the County are privately owned by large Public Water Companies as well as smaller Water Mutuals. The company in charge of the system is best equipped to provide details regarding available system flow and pressure at a given location. In areas served by the Santa Clara County Fire Department, the County Fire Marshal's Office may be able to supply the information.

## 7. Why do I need to install two water tanks for my residential project?

- A. The **Primary tank** holds the water necessary for domestic, irrigation or industrial use, in addition to your fire sprinkler water supply. The **Secondary tank** supplies water to the Wharf Hydrant for firefighting purposes. The double tank system was devised to avoid possible contamination of the domestic water supply from the tank of the fire engine, as required by the County Plumbing Code. We require the combination of domestic and fire sprinkler supply in one tank to provide a degree of reliability for the fire sprinkler system as people are most likely to ensure that fresh water is available for other necessary uses at all times. See our **Standards** webpage, Standard CFMO-W1 and W5 for details.

## 8. My proposed structure is made of steel, which does not burn. Why do I need to provide fire protection water?

- A. Even though the structure itself may be "fire resistant", steel loses its strength at a fairly low temperature and is then subject to collapse, endangering contents, occupants and firefighters. Most fire involves burning contents, which in turn impact the integrity of the structure. Regardless of the combustibility of the building itself, a fire can

occur within any structure, therefore fire protection water is required for all structures. Even if the structure is built with the intent to house non-combustible contents, there is no way to regulate the combustibility of the contents once the building is occupied, especially when the building is sold to another party.

#### 9. Can I use one tank as the source for both my fire protection water (for the hydrant) and for domestic and fire sprinkler use?

- A. No, but extreme conditions can be evaluated on a case-by-case basis. Contact our office Land Development Deputy at (408) 299-5763 or e-mail him at [mac.bala@pln.sccgov.org](mailto:mac.bala@pln.sccgov.org), do discuss your conditions.

#### 10. Can I locate my fire protection water tank next to my house or property line?

- A. Tanks made of combustible material (e.g., polypropylene) may not be located within 20 feet of a structure. Tanks made of noncombustible material (e.g., steel) may be located within 5 feet of a structure. Check with **Santa Clara County Planning Department** regarding the tank's location in relation to the property line.

#### 11. Where should my wharf hydrant be located?

- A. We want the Wharf Hydrant to be a minimum of 55 feet from any structure so we can access it safely when the structure is on fire. We also need it to be within 150 feet of all exterior portions of the structure because the standard hoses carried by fire departments are 150 feet in length. This distance is measured along the path of travel around the structure, not "as the crow flies" because firefighters can't fly! See Standard CFMO-W4 for guidelines; however, because each property is different, the final placement must be approved by our Land Development Deputy. He is available from 8 a.m. to Noon and 1 p.m. to 4:30 p.m., Wednesdays & Fridays, (except Holidays) to answer your questions on a first-come, first serve basis.

#### 12. What if I don't have a water purveyor (e.g., San Jose Water, California Water, etc.) and my water comes from a well. Do I need to provide tanks?

- A. Yes, this is the most common situation where you would need to add two tanks. One **Primary tank**, which is for your domestic and sprinkler needs and one **Secondary tank** for the Wharf Hydrant water supply. For residential requirements see our Standards, available on our **Standards** webpage, CFMO-W1 and CFMO-W5; for non-residential requirements see CFMO-W2.

#### 13. Can I use my swimming pool or pond as my fire protection water supply?

- A. No. Above-ground tanks have proven to provide the most reliable source of water for fire protection needs.

History has shown us that swimming pools are not a reliable source of water due to seasonal draining, cracks, repairs, etc. Ponds contain mud, silt and wildlife, which can seriously damage fire department equipment during drafting operations. Also, it is difficult to provide an instant supply of water at the hydrant due to the elevation differences between the water level of the pool or pond and the hydrant outlet. In addition, access to such water supply can be very difficult as pools are required to be fenced and secured, and ponds are usually located far from *approved* access roads designed to support the weight of a fire engine.

#### 14. I belong to a water mutual, do I need to provide my own tanks for my property?

- A. Under certain conditions, yes:
- If your water company provides domestic water only (no hydrant system)
  - If your water purveyor cannot supply the required minimum fire-flow to the nearest hydrant(s).
  - If your water purveyor cannot provide the required quantity of water.
  - If your water purveyor cannot provide a hydrant within the required distance.

#### 15Q. What is the difference between a Standard Fire Hydrant versus a Wharf Hydrant?

- A. A **Standard Fire Hydrant** is typically used in urban areas, but may be found in rural areas with a private Water Mutual company. Standard Hydrants are supplied by a pressurized pipe network, and have two 2-1/2-inch outlets and one 4 or 4-1/2 inch "pumper" outlet. The minimum pipe diameter feeding a Standard Fire Hydrant is 6 inches.

A **Wharf Hydrant** is used for primarily residential applications in rural areas where the source of water is a well for an individual or shared well and its water is stored in aboveground tanks maintained by the property owner. The minimum pipe diameter for a Wharf Hydrant is 4 inches. A Wharf Hydrant has only one 2-1/2" outlet, and needs to provide only pressure pressure from elevation or head pressure (pressure provided by the weight of the water in the tank) sufficient for positive flow at the outlet. View pictures of both hydrants on our **Land Development** website.