During a wildfire, urban water systems do their best to put all available resources to work supporting firefighting efforts, with employees putting themselves at physical risk to maintain or repair systems. These costly, time-intensive efforts go beyond written expectations and regulations and often go uncompensated and under-recognized.

ADDITIONAL RESOURCES

- UCLA Luskin Center for Innovation report: "Wildfire and Water Supply in California: Advancing a Research and Policy Agenda" (Pierce, Roquemore, and Kearns, 2021)
- *Water* journal article: "Water Supply and Firefighting: Early Lessons from the 2023 Maui Fires" (Sowby and Porter, 2024)

SECTION 3

ALL ABOUT FIRE HYDRANTS

How do fire hydrants work? Q

A

Takeaway: Fire hydrants allow firefighters to draw water from the water system's underground infrastructure; they do not have their own water supply.

Fire hydrants draw on the water supply from the rest of the urban water system infrastructure underground. They do not contain their own water and very rarely draw on separate supplies of water. Public fire hydrants are located at the end of the physical line of the urban water system, usually just before underground water pipes connect the public system to pipes on private property. During a fire, firefighters bring fire hoses to the site of the fire, manually unscrew the fire hydrant outlet, and then connect a hose to the hydrant. The hose can then spray water onto the fires.

Why do we have fire hydrants? Q

A

Takeaway: Fire hydrants provide much more water per second than any other part of the urban water system, allowing a fire to be put out more quickly.

Fire hydrants are specifically designed and maintained to provide fire flow for urban fires, but not for wildfires. Fire flow means the water supply comes out at a much higher pressure (more water at a higher speed) than you get from a tap at home. In other words, they provide a lot more water more quickly than any other part of the urban water system, enabling firefighters to put out fires more quickly.

Are fire hydrants available everywhere? Can my neighborhood get more fire hydrants to be better prepared? Q

A

Takeaway: Fire hydrants are typically only available within the territory of an urban water system. Private hydrants can be installed by permit but must use a private water supply.

No. Urban water systems place fire hydrants throughout their service territory in the public right-of-way, typically on sidewalks, to support firefighting efforts. You will see them on nearly every block in a typical residential or commercial neighborhood. They are usually located at regular intervals throughout the system, but the location also varies depending on how many buildings or people there are in the area, the pressure of the system, the importance of certain buildings or facilities, as well as the requests of firefighters.

There generally are no fire hydrants placed outside areas that urban water systems serve. As an individual, you can obtain a government permit to construct and provide your own water supply to a fire hydrant on private property. If you are not served by an urban water system, you are responsible for providing your own water supply, power, and infrastructure — including fire hydrants — to help fight fires.

Why did some fire hydrants run out of water when we needed them most? | Q

A

Takeaway: When fire hydrants have low water pressure, it is likely because many people are using water at the same time to protect property, damaged pipes are leaking water, and/or electric power service is interrupted.

Fire hydrants rarely "run out of water." The water used from hydrants during urban fires is the same as your drinking water supply. Building codes can be used to ensure that fire hydrants supply water when and where it is needed. For example, LA codes specify hydrant type, spacing, pressure, and connections. LA County codes are similar. However, during wildfires, fire hydrants do often start to flow at less-than-ideal rates. This happens when parts of the urban water system supporting them either have much higher demands on parts of the local water supply system than normal, have to draw on more distant water supplies, fail to maintain sufficient pressure to provide supply for desired fire flow, or a combination of these factors.

A lot of the strain on fire hydrants during wildfires is due to residents in the area leaving on hoses or sprinklers (automatic roof sprinklers are increasingly required for insurance purposes) or even operating their own fire hydrants to try to protect their property. While this is understandable, the high simultaneous use of water places extreme strain on urban water systems, particularly in areas where water must be pumped uphill — as is the case in mountain or canyon areas.

An additional strain can come from pipes damaged by the fire, which can leak water heavily, reducing flow and pressure for other parts of the system. Electric power service to maintain pressure is also often compromised during wildfires, and urban water systems are forced to rely on backup generators (or, less commonly, batteries) for limited power in key parts of the system.

ADDITIONAL RESOURCES

- KDRV News: FireWatch: When the wells ran dry on the day of the Alameda Fire (Shelton, 2021)
- National Fire Protection Association (NFPA): Fire Hydrants and Water Flow
- U.S. Fire Administration: Water Supply Systems and Evaluation Methods (See Chapter 3)