

2022-2023 Fresno County Civil Grand Jury Report No. 4  
OPERATIONAL STATUS OF FRESNO CITY FIRE HYDRANTS  
June 20, 2023

**SUMMARY**

The Fresno County Civil Grand Jury received a written complaint that referenced an article in the Wall Street Journal of September 2022. The article addresses, in part, the maintenance, service, and functionality of fire hydrants. Locally, a report filed by Fox News on January 30, 2020 questioned the condition and maintenance of the fire hydrants in the City of Fresno. The Fox News report referenced two fires where there were problems with fire hydrants. In one case, a hydrant was inoperable but the fire department was able to access other hydrants in the area. The nonfunctioning hydrant had previously passed inspection. The second referenced incident involved a damaged fire hydrant. The Grand Jury investigated the organizational procedures ensuring the efficient operation of this public safety system.

**GLOSSARY**

DPU: Department of Public Utilities

DPU-W Department of Public Utilities - Water

FCFD: Fresno City Fire Department

ISO: Insurance Services Office

**BACKGROUND**

The purpose of this investigation was to determine (1) if the City of Fresno's water system is sufficient to meet the necessary water needs when responding to fires and (2) is

the fire hydrant system being maintained to service the public safety requirements.

The policy for fire hydrant spacing and water flow requirements is established in the Fresno City Fire Department (FCFD) Fire Prevention Manual Development Requirements Section 403.003, revised February 13, 2019. In single-family residential areas and multi-family residential areas of up to four units per building, a hydrant is required every 600 feet and in a commercial area every 450 feet. FCFD engines carry a minimum of 800 feet of hoses, in addition to carrying 500-750 gallons of water. In the event of a large fire, the Department of Public Utilities (DPU-W) can increase the water pressure to that area, providing sufficient water flow to meet the needs for controlling and suppressing a fire.

The service, maintenance, and if necessary replacement of fire hydrants is performed by the DPU-W, a unit of the Department of Public Utilities (DPU). The DPU-W is also responsible for the purchasing of replacement parts and spare valves. The FCFD is responsible for the inspection of city fire hydrants. Fire stations are compensated \$98 per year for each annual inspection. These funds are used to offset the extra costs generated in making the required inspections. When an inspection discovers a problem with a hydrant, the information is forwarded to the DPU-W for repairs. The report will discuss the process for the inspection, maintenance, and continued operation of fire hydrants throughout the city.

## **METHODOLOGY**

To develop the information necessary to address the complaint, the Fresno Grand Jury interviewed employees from the FCFD, DPU, and the DPU-W. Additional references used

were the Fire Prevention Manual Development Requirements (Feb. 2019) and Insurance Services Office (<http://www.verisk.com/iso-home/about-iso/about-iso.html>).

## **DISCUSSION**

The Fresno City Fire Department (FCFD) oversees approximately 14,320 public and 3,226 private fire hydrants. Private hydrants in special districts within the City of Fresno have their own contracted water systems. The FCFD does not inspect and is not responsible for private hydrants located in special districts. Therefore, data on private hydrants in special districts is not included in this report.

The FCFD is required to inspect every fire hydrant in its jurisdiction once a year. This annual inspection and maintenance consists of flushing the system, lubing the caps, and exercising the valve. When a fire hydrant is found to be in need of repair, notice is sent to the DPU-W. When a hydrant is determined to be inoperable the cap is painted black. This alerts FCFD to avoid that hydrant. When repairs are completed the DPU-W notifies FCFD and the cap is repainted according to the valve flow capacity. The FCFD uses a subscribed program developed by Tiburon Public Safety Software, that provides a real-time map showing the location of each hydrant and its operational status. The FCFD is replacing the Tiburon system with a new software platform called First Due, which will improve efficiencies.

The Insurance Services Office (ISO) is a provider of statistical, actuarial, underwriting, and claims information. ISO was formed as an advisory and rating organization for the property/casualty insurance industry to provide statistical and actuarial services, to

develop insurance programs, and to assist insurance companies in meeting state regulatory requirements. The ISO evaluations used by insurance companies in setting insurance rates are based upon many factors. An important criteria is the availability and sufficiency of the city water that services the fire hydrant system. The City of Fresno has a 100% rating from the ISO for the robust water system supplying the necessary water flows to support the complex system of fire hydrants.

During the interview process it was discovered that there are over 20 different types and models of fire hydrants in service throughout the city. It was brought to our attention that the City of Fresno purchases new hydrants, for replacement purposes, based primarily upon the lowest bidder. As a result of this process there is an assortment of hydrants making up the city system. Each model of hydrant requires specific tools to operate. The requirement of special wrenches to operate different valves creates the need for each truck to carry specific tools to perform annual inspections and effectively use hydrants in an emergency. This diversity of hydrants also adds to the challenge of managing inventory of replacement parts. DPU-W is responsible for maintaining supplies to service the different types of hydrants throughout the city. This situation continues to be a problem for the city. The need for distinct tools to operate different hydrants makes the system less efficient.

The annual inspection of the hydrants is required and necessary to insure operational hydrants at all times. Annual inspections are performed throughout the year. Hydrant inspections are in addition to answering routine and emergency service calls. Some stations handle more calls than others and are often overworked to effectively complete

these inspections.

When a hydrant is discovered to be in need of repairs the information is forwarded to the DPU-W dispatch center. DPU-W is responsible for procuring parts, repairing and/or replacing hydrants. This department reports through the Asset Management System twice a month the status of hydrants needing repairs or replacement. Repairs could take days or weeks to complete depending on the make of the hydrant, inventory of parts, and work schedules. Once repairs are completed, it is the responsibility of FCFD to make sure that the hydrants are inspected and operating.

### **Findings:**

- F1. The decision for purchasing new hydrants is based primarily on the lowest bidder and FCFD is not included in the hydrant selection and purchase process.
- F2. Communication between FCFD and DPU-W regarding the maintenance and repair of fire hydrants is through inefficient communication systems and emails.
- F3. Each FCFD fire station has different levels of priority calls and demands for services resulting in some stations having substantially less time for inspecting hydrants.
- F4. The Tiburon Software program is being replaced by a new software platform called First Due which will include additional monitoring and notification options.
- F5. The water supply and existing hydrant delivery system has earned Fresno City the highest rating from the ISO insuring agency.

### **RECOMMENDATIONS**

- R1. The FCFD Chief should share the scheduled upgraded program with the DPU-W to streamline communications between all parties so the requisition of necessary repairs and reporting on completions of repairs could be more effectively tracked. This should be completed by March 2024. (F2) (F4)
- R2. The DPU-W Manager should include input from the FCFD on the selection and purchase of new hydrants. This should be implemented by September 2023. (F1) (F2) (F5).
- R3. The FCFD Chief should initiate scheduled quarterly meetings with DPU-W Manager, and the City of Fresno Purchasing Department to improve communications between departments. To be completed by December 2023. (F2) (F4)
- R4. The FCFD should review their internal system to ensure fire hydrant inspections between stations are completed efficiently and on time. This should be completed by December 2023. (F3)

**Request for Responses:**

Pursuant to California Penal Code Section 933.05, the 2022-2023 Fresno County Civil Grand Jury requests responses to each of the specific findings and recommendations. It is required that responses from elected County officers or agency heads are due within 60 days of the receipt of this report and 90 days from the governing body of a public agency.

The Grand Jury acknowledges that recommendations dealing with infrastructure, such as

the replacing and standardizing city fire hydrants, will be an ongoing process. The intent of the recommendations are to have the responsible departments recognize the long-term benefits and incorporate standardization into future actions. The scheduled software upgrades and new technology will provide communication platforms that improve department interactions and should be implemented as they become available. The other recommendations are offered to support the people involved with the operation, maintenance, and use of this complex water delivery and hydrant system for the public protection of the City of Fresno.

**Invited Respondents:**

FCFD - Fire Chief (F1, F2, F3, F4,) (R1, R2, R3, R4)

DPU-W - Manager (F1, F2, F4, F5) (R1, R2, R3)

**Disclaimer**

Reports issued by the Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Grand Jury.