

# City of Hesperia

## STAFF REPORT



**DATE:** November 5, 2024  
**TO:** Mayor and City Council Members  
Chair and Board Members, Hesperia Water District  
**FROM:** Rachel Molina, City Manager  
**BY:** Cassandra Sanchez, Director of Public Works / City Engineer  
Jeremy McDonald, Water Operations Manager  
**SUBJECT:** American Rescue Plan Act (ARPA) Grant Contract Services – Leak Analysis

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### RECOMMENDED ACTION

It is recommended that the City Council and Board of Directors of the Hesperia Water District authorize the City Manager to enter into an agreement with ASTERRA for the satellite scan of the City's water distribution system to identify non-apparent leaks, in the not-to-exceed amount of \$350,000, which includes a contingency of \$30,000.

### BACKGROUND

The City's water distribution system consists of over six hundred (600) miles of pipeline, fourteen thousand (14,000) valves, and twenty-nine thousand (29,000) service lines. Water distribution systems are susceptible to leaks due to several reasons, including degradation due to age.

There are two types of leaks that occur within a distribution system, apparent and non-apparent. Apparent leaks are those that become visible by appearing at the surface, resulting in the ponding, or flowing of water within the City's right-of-way. Non-apparent leaks are those that do no surface due to minimal leakage rates or soil conditions allowing for the percolation of water.

Staff recommends a leak analysis survey be performed on the City's water distribution system to identify non-apparent leaks. The analysis includes a satellite scan of the City's service area which will identify locations where Points of Interest (POI) are identified. The POI are then overlaid onto a map displaying streets, pipes, hydrants, and valves. A subcontracted acoustic leak detection technician is then assigned to the City for up to seventy (70) days. The technician will use the information from the satellite scan and acoustic leak detection equipment to pinpoint exact locations of where the leaks are located.

The satellite imaging is expected to detect up to 30% of leaks within the City's service area and leakage rates as minimal as 0.2 gallons per minute. Performing the leak analysis will help reduce real losses. The reduction of real losses will contribute to savings associated with reduced energy consumption and disinfection costs and reduce the amount of makeup water associated with being a part of an adjudicated basin. Furthermore, the leak analysis will improve the City's validity score associated with Senate Bill 555 by reducing real losses, which an annual water loss audit required by the State Water Resources Control Board.

## **ISSUES/ANALYSIS**

Staff has determined that ASTERRA is the sole source provider of satellite imaging that uses synthetic aperture radar to detect soil moisture resulting from treated water. Additionally, ASTERRA's algorithm and process are patented under US 9285475 Mar, 15 2016 SYSTEM AND METHOD OF UNDERGROUND WATER DETECTION.

Staff recommends entering into the agreement with ASTERRA who has been determined to be the only provider of this service in the amount of \$350,000.

The City has identified available American Rescue Plan Act (ARPA) Grant funds that are an eligible funding source for the program.

## **CITY GOAL**

Public Safety: Ensure public safety resources adequately protect our community.

Financial Health: Maintain a balanced budget and adequate reserves.

## **FISCAL IMPACT**

ARPA Grant funding in the amount of \$350,000 has been identified for the proposed purchase of the services recommended. If approved, an amendment to the FY 2024-25 Budget will be presented at the Mid- Year Budget Review to appropriate the necessary funds.

## **ALTERNATIVE(S)**

1. Provide alternative direction to staff.

## **ATTACHMENT(S)**

None