



Item Number: {{item.number}}

City Council / Board of Directors

Written Communications

Meeting of: January 21, 2025

Submitted By:

Doug Mathews, Director of Public Works and Water

Subject:

Contract Award for Leak Detection Analysis

Recommendation:

That the Honorable City Council/Board of Directors:

- (1) Deem that the services provided by Utilis, Inc., operating as Asterra, as proprietary in nature, thus meeting the requirements of a sole source vendor in accordance with VMC 2.28.100(b)(2); and
- (2) Award a Consultant/Professional Services Provider Agreement with Utilis, Inc., operating as Asterra, for Leak Detection Analysis in the amount not to exceed \$166,615.

Fiscal Impact:

This action will have a fiscal impact of \$166,615. This project was appropriated in the Fiscal Year 24/25 annual budget under the Water Fund (Fund 410) from the following account codes:

Account Code	Account Description	Amount
4100535-52300-74652	Field Services - Contract Services – Leak Detection Software	\$83,308
4100525-52300-74652	Water Conservation - Contract Services – Leak Detection Software	\$83,307
Total		\$166,615

Strategic Plan Goal:

This item aligns with Goal E: Invest in Infrastructure, in the City of Victorville Strategic Plan 2023-2026. This software will be utilized to analyze, investigate, and mitigate water loss, which will assist staff with determining maintenance priorities with the objective of reducing the overall loss of water through leaks in the water distribution system.

Background:

The Victorville Water District (District) maintains approximately 700 miles of potable water transmission and distribution pipes within an 80-square mile service area as an integral part of the drinking water system, delivering water to households and businesses 24 hours per day, and 365 days per year. A reliable network of piping is essential to deliver clean, safe drinking water to customers throughout the service area. However, much of the system's infrastructure is aging, increasing the likelihood of leaks and breaks that can be both disruptive and costly. A large percentage of the pipes in the system were installed over 35 years ago, dating back to 1989. As pipes age, their materials naturally degrade, making them more susceptible to leaks and failures. To address these challenges, leaks are mitigated through a combination of reactive repairs, proactive maintenance, and planned rehabilitation.

Compounding the issue, aging polyethylene (PE) service lines have been the primary source of system leaks for the past two decades. Installed mostly between the 1980s and early 2000s, these PE lines now make up over 50 percent of the total service lines in the system, with approximately 12,675 active PE service lines still in place. Currently, the highest percentage of work performed by the Field Services Division staff involves reactive mitigation of the water distribution system. Leaks tend to become more frequent and severe with rising temperatures, and during the summer months, it is not uncommon for 75 percent of the field crews to be focused on replacing service lines due to these leaks.

Water purveyors (entities that supply water to the public for drinking, irrigation, and other uses), must comply with strict water efficiency and conservation mandates from the California State Water Resources Control Board (State Water Board). The "Make Conservation a California Way of Life" initiative sets efficiency goals for water agencies across the state. In 2018, AB 1668 and SB 606 tasked the State Water Board with developing efficiency standards to promote sustainable water use. These regulations, adopted on July 3, 2024, took effect on January 1, 2025. Among the requirements is the annual calculation of a Water Use Objective, which includes residential, commercial, and industrial water use, as well as real water loss. Real water loss refers to water lost from the distribution system due to leaks, bursts, and theft before reaching customers. Agencies must meet specific leak detection and repair standards by 2028 and comply with volumetric water loss standards thereafter.

As part of its ongoing water loss management efforts, the District is required by law to submit an annual validated water loss audit through the American Water Works Association (AWWA). This audit provides a comprehensive assessment of water losses within the distribution system, including losses caused by leaks, bursts, and metering inaccuracies. By systematically estimating and analyzing these losses, the audit serves as a critical tool for identifying inefficiencies, prioritizing repair and replacement projects, and enhancing the overall integrity of the water system. Compliance with this requirement ensures that the District continues to align with state mandates and contributes to broader water conservation and sustainability goals.

Discussion:

In response to increasing state-mandated water conservation efforts and ongoing challenges posed by aging infrastructure, the District recognizes the need for innovative tools to address water loss. While proactive pipeline and targeted PE line replacements have been essential steps, these measures alone cannot fully resolve the issue. Enhanced leak detection is a critical component of the District's strategy to manage water loss, reduce operational inefficiencies, and meet state-mandated regulatory standards.

To complement existing efforts, the District identified Asterra, a satellite-based leak detection software developed by Utilis, Inc., as an innovative tool. Asterra has utilizes satellite radar technology and its proprietary algorithm to conduct biannual surveys of the District's 700-mile water distribution system, combined with 40 days of acoustic leak detection each year. This approach helps the District identify up to 125 Points of Interest (POIs) where leaks are likely, overlaying the data onto the District's Geographic Information System (GIS) for clear visualization of leak-prone areas. The technology allows staff to effectively focus resources on targeted investigations, enhancing the District's ability to address leaks in a timely and more cost-effective manner.

Water loss from pipelines and service lines constitutes non-revenue water, which not only impacts operational efficiency but also represents a financial burden. Asterra directly supports the District's efforts to reduce water loss by improving leak detection and repair timelines, ensuring compliance with state-mandated efficiency standards. By integrating this innovative technology into its operations, the District positions itself to meet regulatory requirements while enhancing water conservation efforts and resource sustainability.

Pursuant to VMC 2.28.100(b)(2), and with no other technology offering the same level of satellite-based leak detection service, staff seeks Council's approval to deem Asterra's software as a sole-source procurement due to its unique capabilities that align with the District's operational needs. Additionally, Utilis, Inc., the provider of Asterra, is the sole vendor offering this specialized satellite-based technology to assist in accurately identifying and prioritizing leak detection within a reasonable proximity to the District's service area.

Therefore, staff recommends that the Council/Board deem the services provided by Utilis, Inc., operating as Asterra, as proprietary in nature, thus meeting the requirements of a sole source vendor in accordance with VMC 2.28.100(b)(2). Additionally, staff recommends awarding a Consultant/Professional Services Provider Agreement with Utilis, Inc., operating as Asterra, for the satellite-based leak detection and analysis of the District's potable water system, in an amount not to exceed \$166,615.

Staff is available for any questions the Council/Board may have.

Attachments:

- A. Sole Source
- B. Consultant/Professional Services Provider Agreement