



Water and Wastewater Line Leak Detection

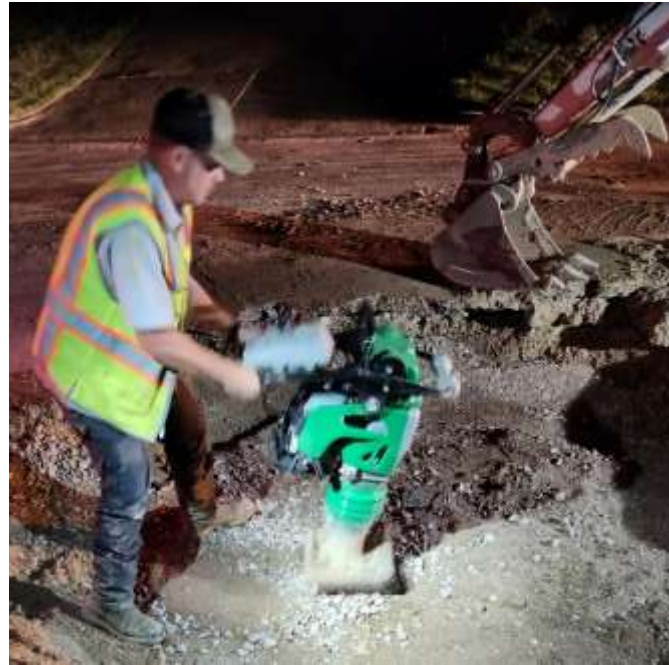
Agenda



- Background
- Project Overview
- Recommendation and Next Steps

Background

- Water and wastewater infrastructure include over 223 miles of water mains and over 226 miles of wastewater mains
- As these underground assets age they become more susceptible to developing leaks and main breaks
- In FY23-24, staff responded to 89 water leaks and 21 wastewater repairs



Project Overview



- Staff proposes engaging ASTERRA to perform satellite-based leak detection on our system to complement and enhance the focus of staff and leak repairs
- The technology is based on a proprietary algorithm that detects soil moisture resulting from treated water leaks, using L-band synthetic aperture radar (SAR) mounted on a satellite
- The technology similarly identifies specific areas of interest in the wastewater system for further ground-based investigation complementing video inspection and smoke testing by staff
- The \$73,500 project will
 - Scan both 223 mile-water main system and 226 mile-wastewater main system
 - Identify potential leak locations for field confirmation
 - Conduct field confirmation (40 hours included) and relay locations of confirmed water leaks to staff for resolution either by staff or through contract services
 - Provide pipe condition assessment to help prioritize future pipe rehabilitation projects

Procurement

- Section 252.022 of the Texas Local Government Code allows for exemptions to competitive bidding requirements
- Sole source procurements are one of the exemptions provided the item or service being procured is available from only one source because of
 - patents
 - copyrights
 - secret processes, or
 - national monopolies
- Based on their patented technology and legal review of the sole source documentation, the project is being recommended as a sole source procurement

Asterra



ASTERRA received the Innovation Award in 2021 from the American Water Works Association for their satellite-based solution for monitoring and detecting potential leaks in drinking and wastewater systems

- Provides infrastructure intelligence for proactive pipe repair and planning
- Averages 3.5 leaks per crew day compared to 1.3 with traditional acoustic methods and leaks as small as 0.2 gallons per minute
- Reduces non-revenue water loss, which amounts to 17 billion gallons annually worldwide
- Assists the wastewater sector by mitigating the risks of fines, consent decrees, legal consequences, and reputational damage

Examples of Texas Customers

Irving

Garland

Duncanville (pending)

Midland

Galveston

Johnson County Special Utility District

Mansfield (pending)

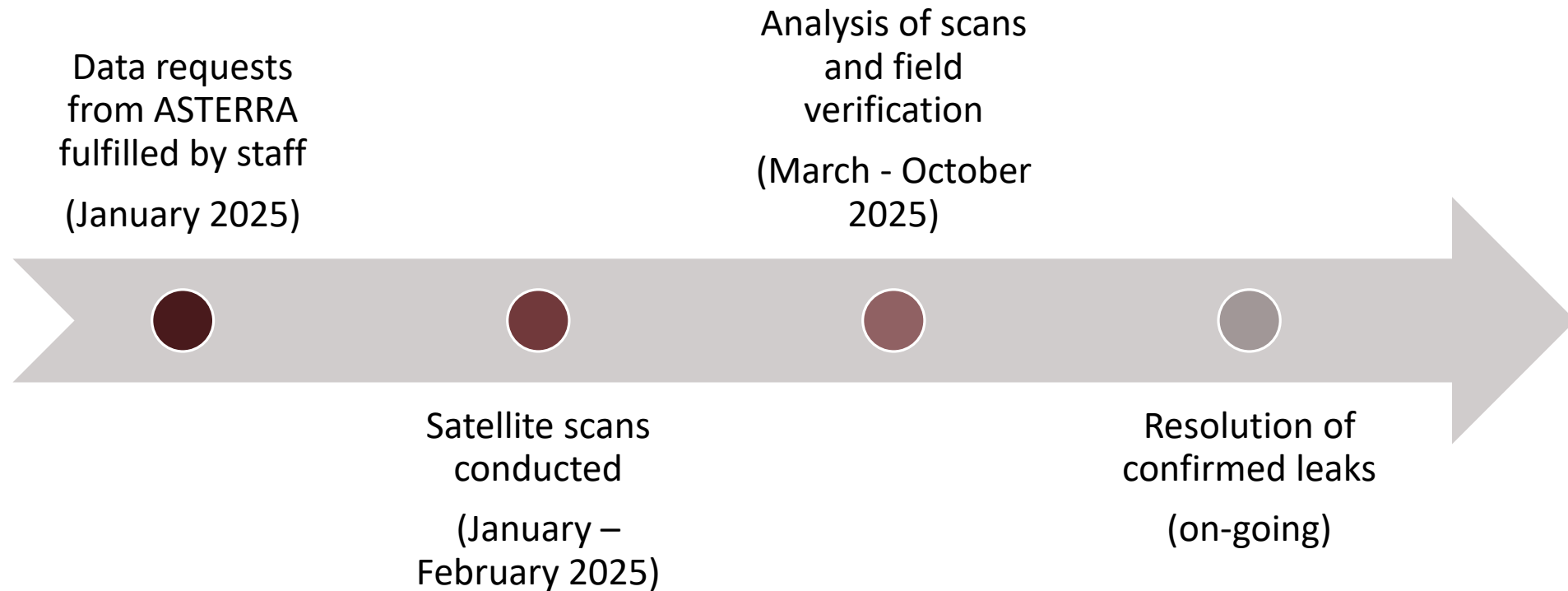
New Braunfels

Asterra's Promoted Benefits

- Non-invasive ASTERRA technology is effective irrespective of soil type, pipe material, and pipe diameter
- Covers large areas at once identifying potential leaks in areas that traditional acoustic leak detection programs may not typically survey
- Screening technology that can be used directly or indirectly for condition assessment, asset budget planning and prioritizing zones within the network with higher risk
- Provides a positive impact on the environment (reduces water loss, electricity used, and CO₂ produced)

Action Requested and Next Steps

Staff recommends approval of a 12-month sole source purchasing agreement with **ASTERRA USA** for water and wastewater leak detection in the amount of \$73,500



Questions / Discussion

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