

Sole Source Purchase Order(s) for Products and  
Services with Pure Technologies U.S. Inc.  
for 10-Year Pipeline Inspection and Rehabilitation  
Program

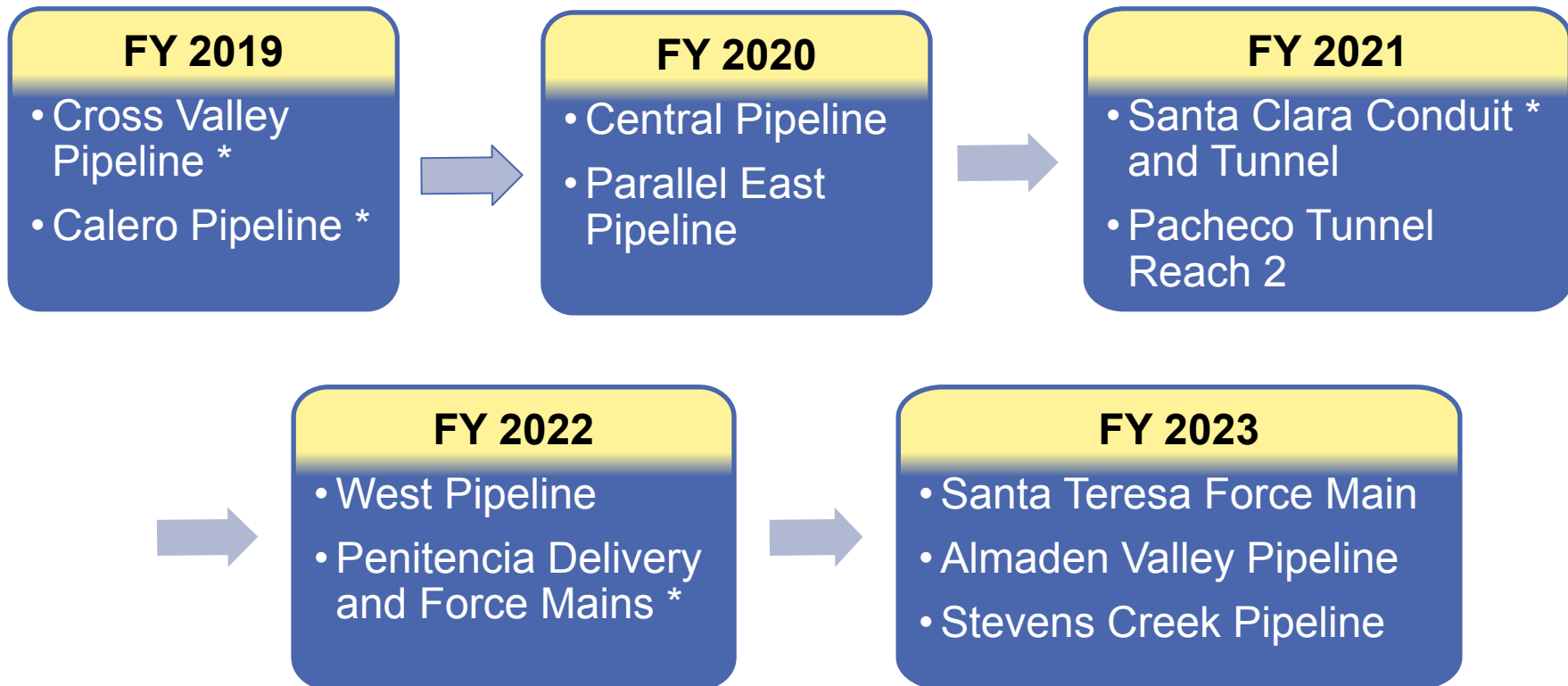
**January 8, 2019**



Attachment 3

# 10-Year Pipeline Inspection and Rehabilitation Program

## Schedule thru Fiscal Year (FY) 2023:



\* Proposed sole source Electromagnetic (EM) Inspection and Acoustic Fiber Optic (AFO) System(s) installation

# Efficient and Reliable Operations

## Board Ends Policy

E-2.2.1 Raw water transmission and distribution assets are managed to ensure efficiency and reliability.

### EM Inspection

- ✓ Detects location and number of breaks in PCCP reinforcement wire
- ✓ Collects data to assess structural integrity and remaining service life in PCCP, at time of inspection

### AFO System

- ✓ Real-time, acoustic monitoring 24-hours a day
- ✓ Collects data to compute rate of change in PCCP deterioration and inform further actions (e.g., pipeline shutdown)
- ✓ Supports efficient and reliable operations of raw water transmission mains.

*\* EM and AFO are proprietary systems, patent held by Pure Technologies U.S. Inc.*

## Accomplishments – January 2018

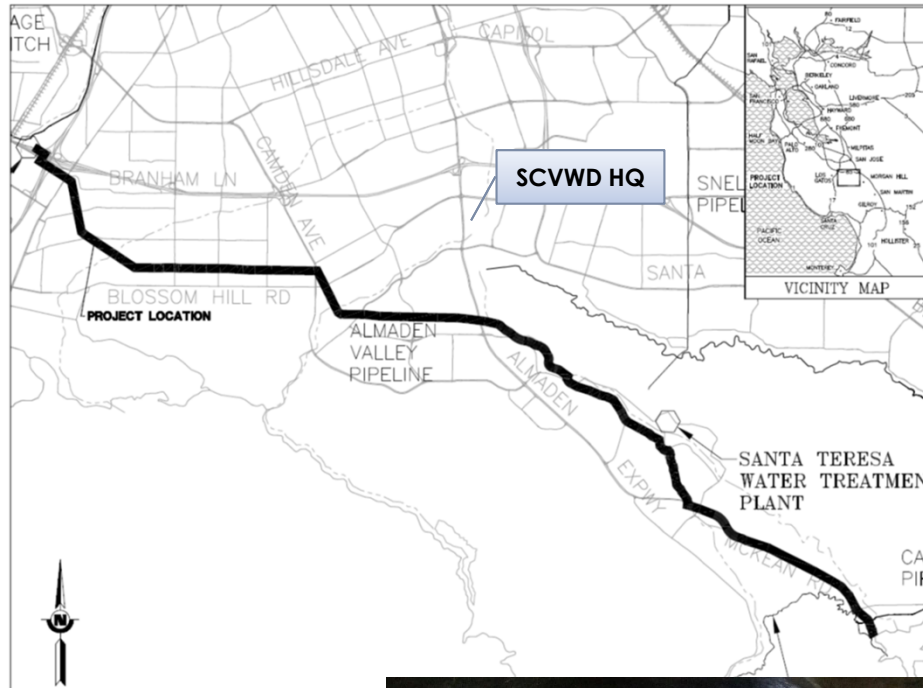
- 
- The map illustrates the project location for the Santa Clara Tunnel and Pacheco Conduit. Key features include:
- North Arrow:** Located in the top left corner.
  - Project Location:** Indicated by a dashed line and a label pointing to the Pacheco Conduit.
  - Conduits and Tunnels:**
    - Santa Clara Tunnel:** Shown as a dashed line with a solid center line, running from the bottom left towards the center.
    - Pacheco Conduit:** Shown as a dashed line with a solid center line, running from the center towards the top right.
    - Santa Clara Tunnel Outlet:** Located at the bottom left.
    - Santa Clara Conduit:** Located near the tunnel outlet.
    - Pacheco Conduit Retention Valve Vault:** Located at the top right.
  - Creeks and Waterways:**
    - Elephant Head Creek:** Flows from the top left towards the center.
    - Ball Creek:** Flows from the top right towards the center.
    - Wolf Creek:** Flows from the bottom right towards the center.
    - Wolf Canyon Creek:** Flows from the bottom right towards the center.
    - Wolf Creek:** Flows from the bottom right towards the center.
  - Other Features:**
    - Casa de Fruita:** Located near the center of the map.
    - Diffusion Structure:** Located near the center of the map.
    - Highway 101:** Shown as a solid line with a shield icon.
    - Highway 880:** Shown as a solid line with a shield icon.
  - Vicinity Map:** An inset map in the top right corner showing the project location within the San Francisco Bay Area, highlighting the project location near the intersection of Highway 101 and Highway 880.

AFO – Acoustic Fiber Optic  
EM – Electromagnetic  
PCCP – Prestressed Concrete Cylinder  
Pipe



Attachment 3  
Page 4 of 8

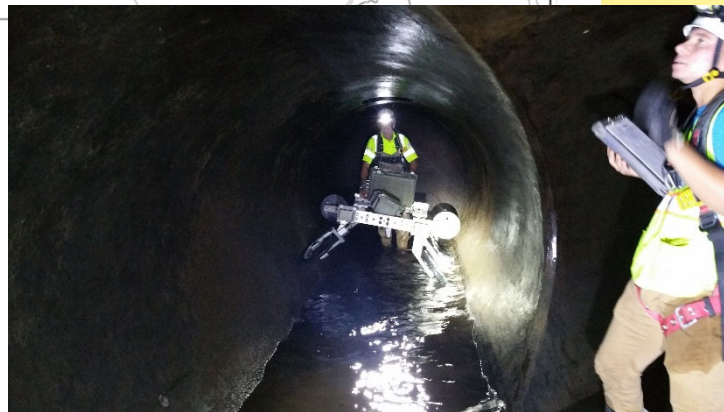
# Accomplishments - Almaden Valley Pipeline



## Accomplishments – March 2018

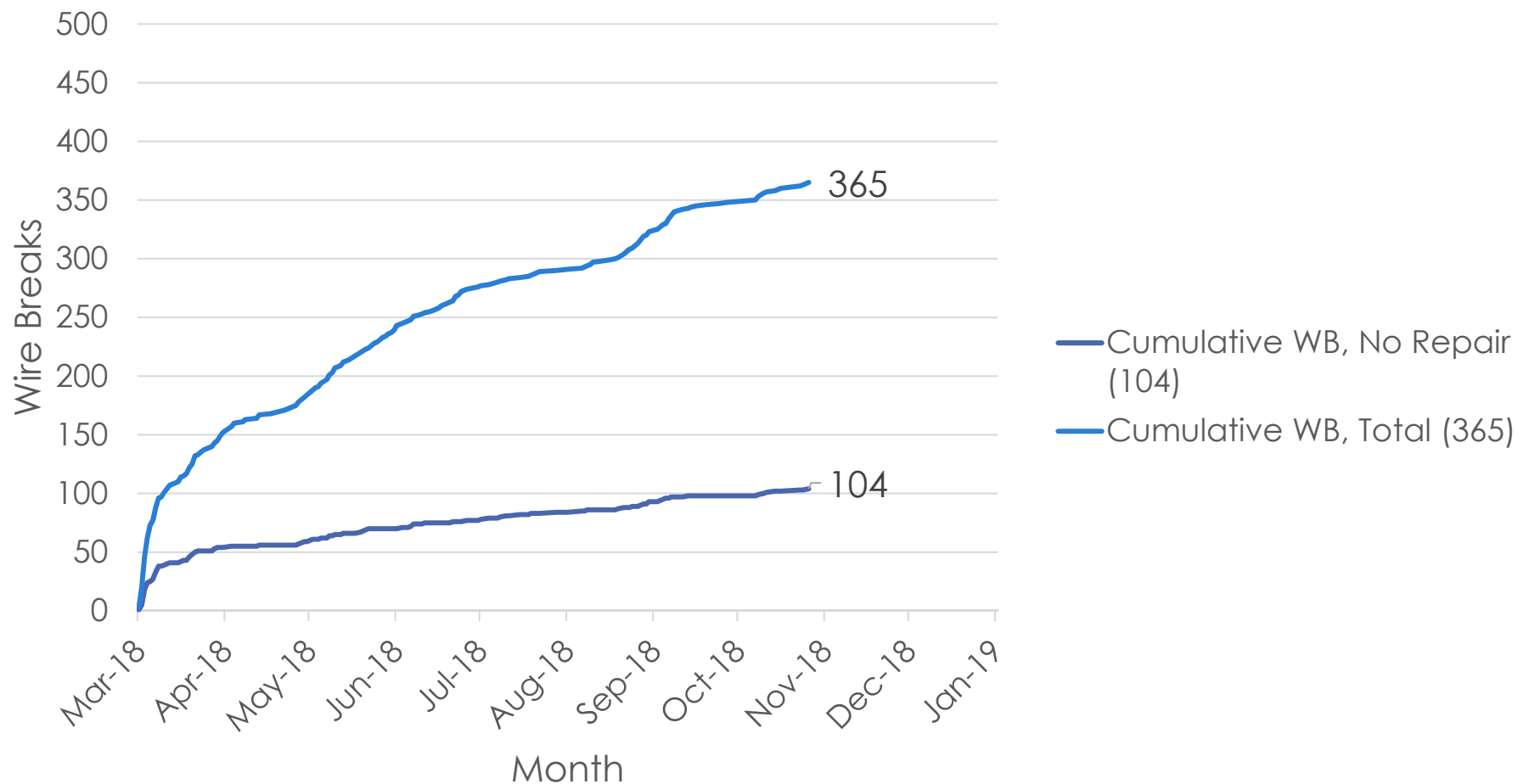
- ✓ Visual, Sounding, and EM Inspection: 11.6 miles of 72/78" diameter PCCP & WSP
- ✓ Repair/Replacement on 93 pipe appurtenances
- ✓ Installed AFO System
- ✓ Emergency pipe repair, 81 pipe segments (~ 0.4 miles)

## Visual, Sounding and EM Inspection



# AFO Provides for Real-Time Monitoring

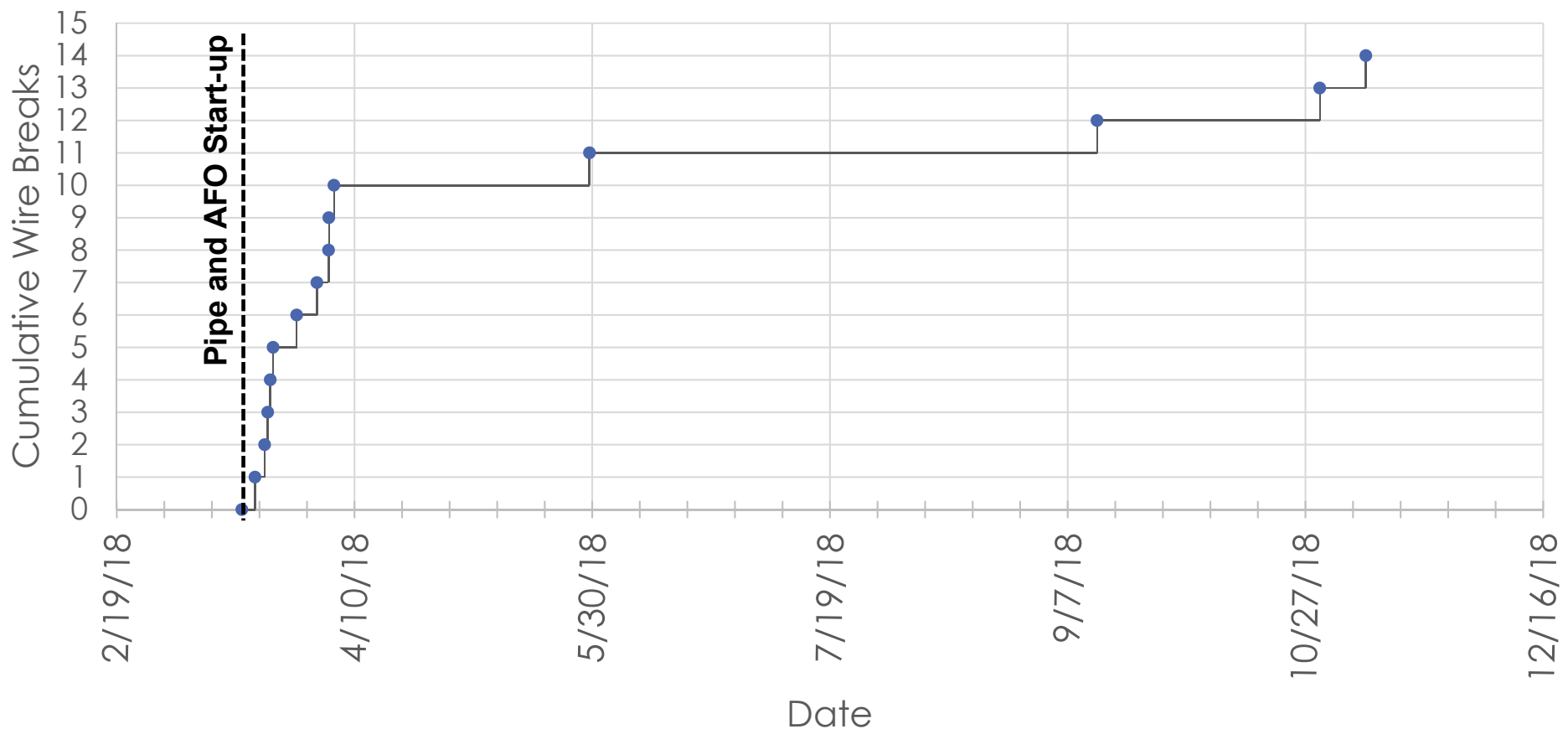
**AFO Cumulative Wire Break Summary**  
**Updated - 11/12/18**



# AFO Monitoring Sample

## **AFO System – Almaden Valley Pipeline (Pipe 525)**

- ✓ 2017 EM Inspection: No wire breaks detected
- ✓ November 2018: 14 cumulative wire breaks





# Recommendation

- Authorize the Chief Executive Officer (CEO) to negotiate, execute, and amend purchase order(s) as-needed with Pure Technologies U.S. Inc. (Pure) for the sole source purchase of Electromagnetic (EM) Inspections, Acoustic Fiber Optic Monitoring System(s) (AFO System) installation, and AFO System Services for the 10-Year Pipeline Inspection and Rehabilitation Program (Program), Project No. 95084002, for up to \$13,880,314.