



Engineering, Operations, & Technology Committee

# Foothill Feeder Fiber Optic Pipe Monitoring

Item 7-1

February 12, 2024

## Item 7-1 Foothill Feeder Fiber Optic Pipe Monitoring

### Subject

Authorize an increase of \$4.34 million to an agreement with Pure Technologies U.S. Inc. for a new not-to-exceed total amount of \$4.41 million to furnish and monitor an acoustic fiber optic PCCP monitoring system along the Foothill Feeder

### Purpose

Furnish a state-of-the-art PCCP monitoring system and monitor for ten years to avoid the need for lengthy shutdowns in the future

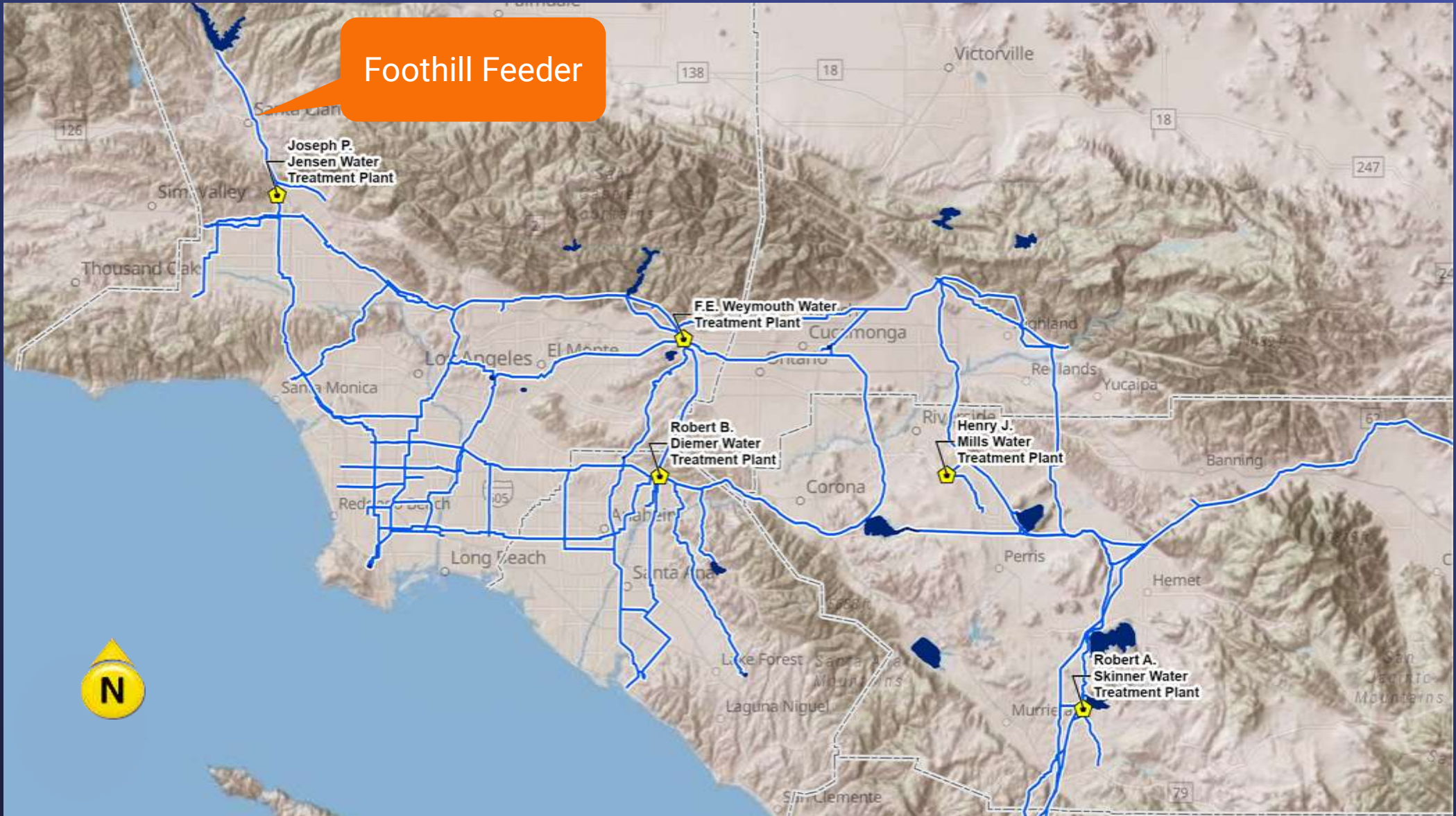
### Recommendation and Fiscal Impact

Authorize increase to an existing agreement with Pure Technologies U.S. Inc.

Fiscal Impact of \$5.89 M

### Budgeted

# Distribution System



PCCP  
Risk  
Management  
Strategy

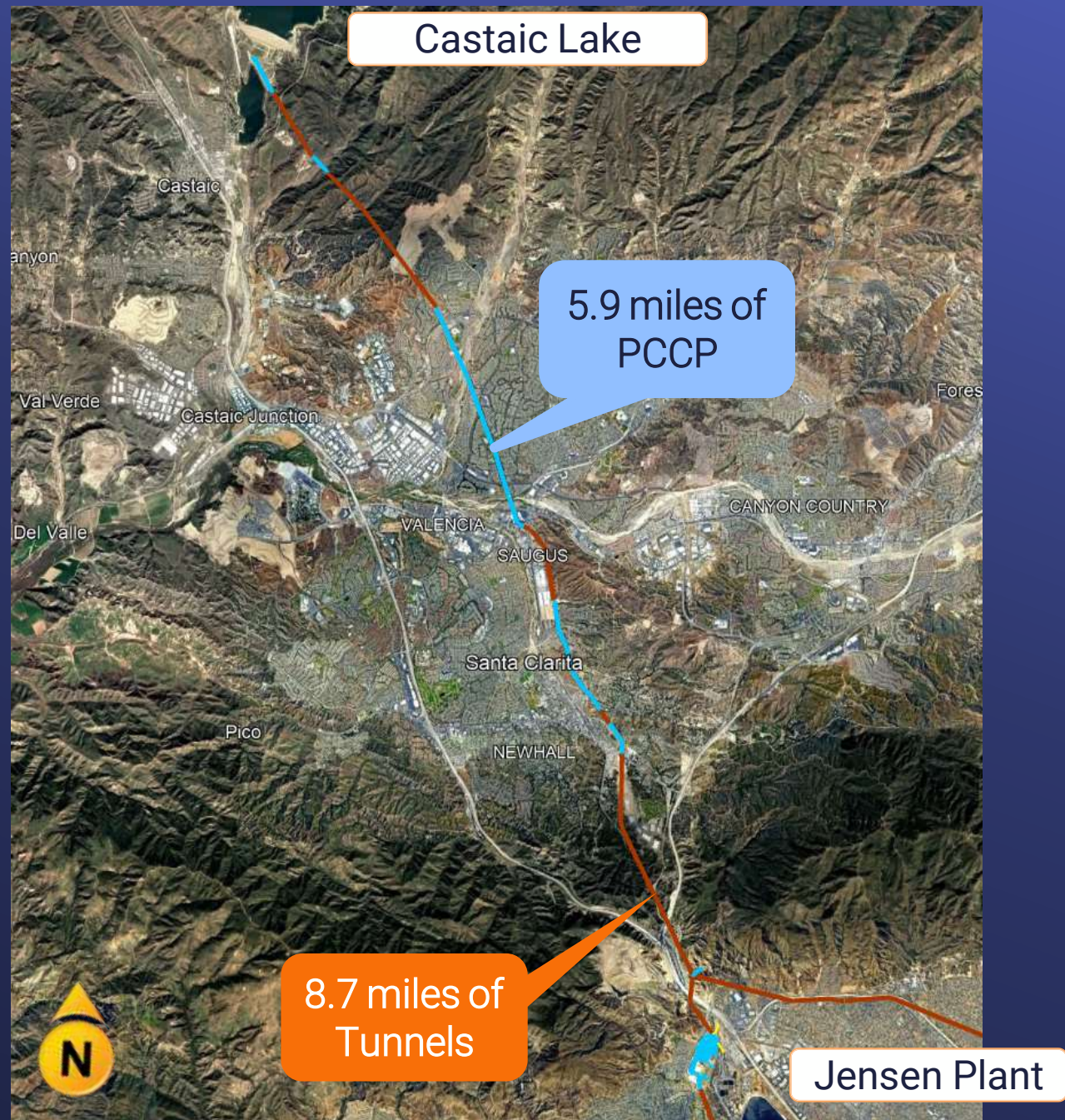
## PCCP Management Strategy

- Conduct regular inspections, monitoring & assessments
- Monitor stray currents & install drain stations where necessary
- Perform individual urgent segment repairs as needed
- Plan & execute long-term rehabilitation

# Foothill Feeder

Conveys untreated State Water Project water from Castaic Lake to the Jensen Plant

- Completed: 1968
- Length: 14.6 miles
  - Tunnels: 8.7 miles
  - PCCP: 5.9 miles
- Diameter: 201-inch
- Inspected 3 times since 2005
- Most recent inspection – Feb 2019



## Foothill Feeder Dewatering



Unarmored Threespine  
Stickleback

## Unique Issues for Foothill Feeder

- Environmental Restrictions
  - Dewatering requires discharge into Santa Clara River & tributaries
  - May impact fully-protected unarmored threespine stickleback
- Metropolitan has sponsored legislation, obtained permits, & performed compensatory mitigation
- Permit requirements result in a prolonged shutdown

Foothill  
Feeder  
PCCP  
Monitoring  
System

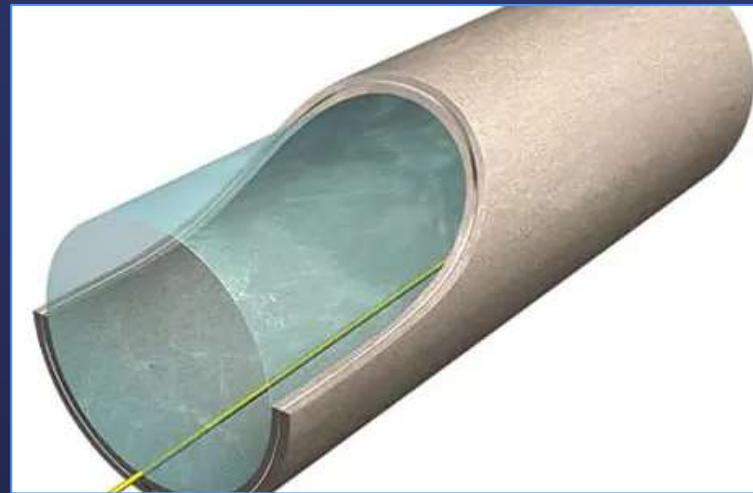
## Alternatives Considered

- Considered Alternative – continue periodic staffed electromagnetic inspections
  - Requires full pipeline shutdown & dewatering
  - One planned shutdown every five years
  - Extended shutdowns due to operational & environmental permitting constraints
- Considered Alternative – use PipeDiver®
  - Not available for 201-inch diameter pipe
- Selected Alternative – procure an AFO monitoring system
  - Provides continuous monitoring

**Foothill  
Feeder  
PCCP  
Monitoring  
System**

## Fiber Optic Pipe Monitoring

- Consists of a data acquisition unit & fiber optic cable
- Detect, record, & locate PCCP wire breaks
- Cable internal to pipeline
- Provides continuous monitoring



Fiber Optic Cable Inside Pipeline



Foothill  
Feeder  
PCCP  
Monitoring  
System

## Agreement Amendment – Pure Technologies

- Pure Technologies is the only supplier of commercially available AFO monitoring systems
- Scope of Work
  - Furnish acoustic fiber optic monitoring system
  - Remotely monitor the system for 10 years
- Amendment amount: \$4.34 million (this action)
- New NTE amount: \$4,410,000

**Foothill  
Feeder  
PCCP  
Monitoring  
System**

## Metropolitan - Scope of Work

- Design
  - Modifications to accessway piping
  - AFO duct banks & connections to the data acquisition unit for monitoring
- Force Activities
  - Fabrication & installation of flanges at eight accessways
  - Construction of 300-ft long duct bank
  - Install power & connection to data acquisition unit
- Perform project management, environmental monitoring & field support

# Allocation of Funds

## Foothill Feeder AFO Monitoring System

### Metropolitan Labor

Final Design	\$ 321,000
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Owner Costs (Proj. Mgmt., Contract Admin., Envir. Support)	243,000
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Force Construction	787,000
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### Professional/Technical Services

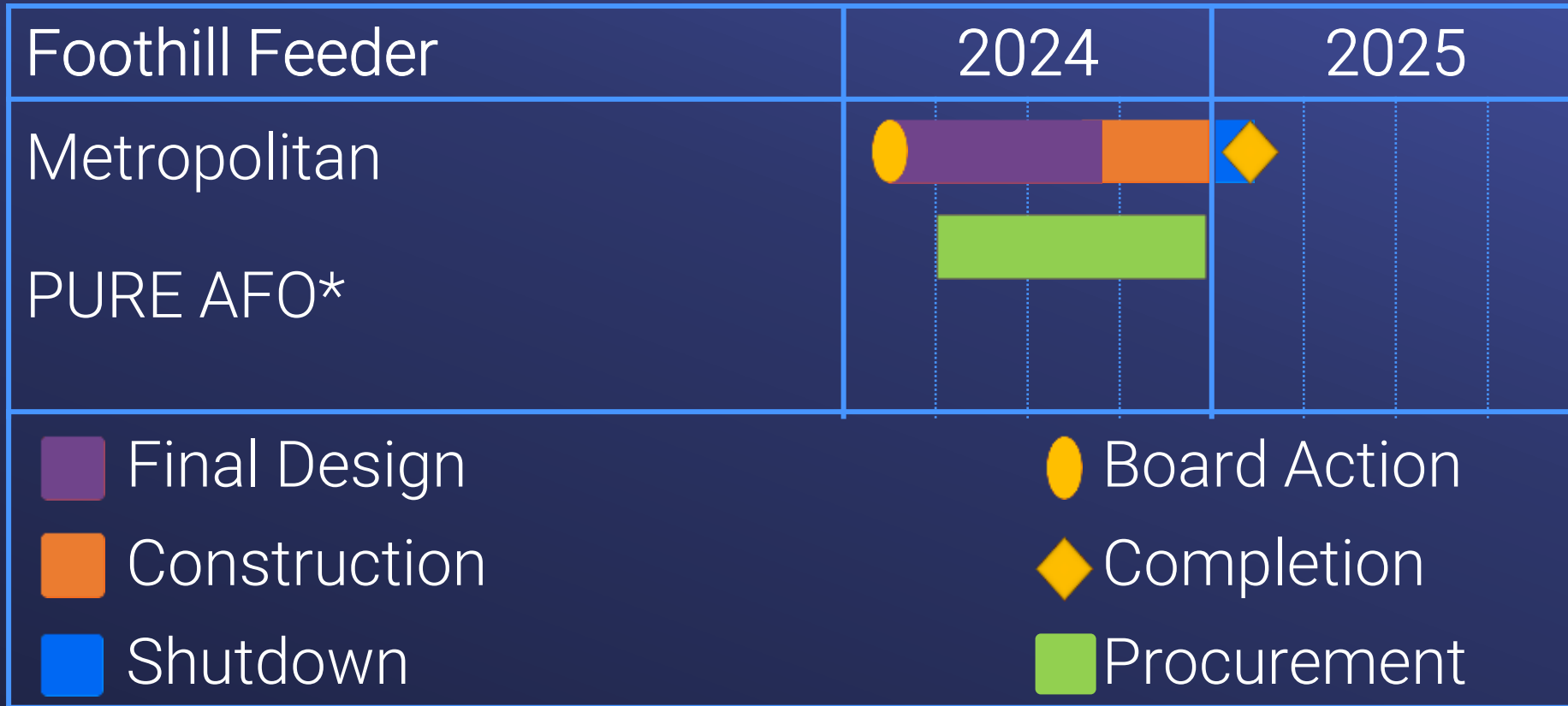
Pure Technologies U.S. Inc.	4,340,000
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Remaining Budget	199,000
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<b>Total</b>	<b>\$ 5,890,000</b>
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# Project Schedule



\*Ongoing monitoring services will continue to 2035

# Board Options

- Option #1

Authorize an increase of \$4,340,000 to an existing agreement with Pure Technologies U.S. Inc. for a new amount not to exceed \$4,410,000 to furnish and monitor an AFO system for the Foothill Feeder.

- Option #2

Do not authorize the agreement at this time.

# Staff Recommendation

- Option #1

