



Peacock Gap Recycled Water

Preliminary Design Report Update

Board Meeting

October 18, 2022



Overview

- Background
- Description of Alternatives
- Scope of Work
- Alternatives Evaluation
- Cost and Funding Opportunities
- Next Steps

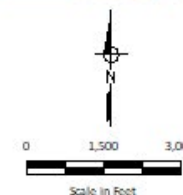
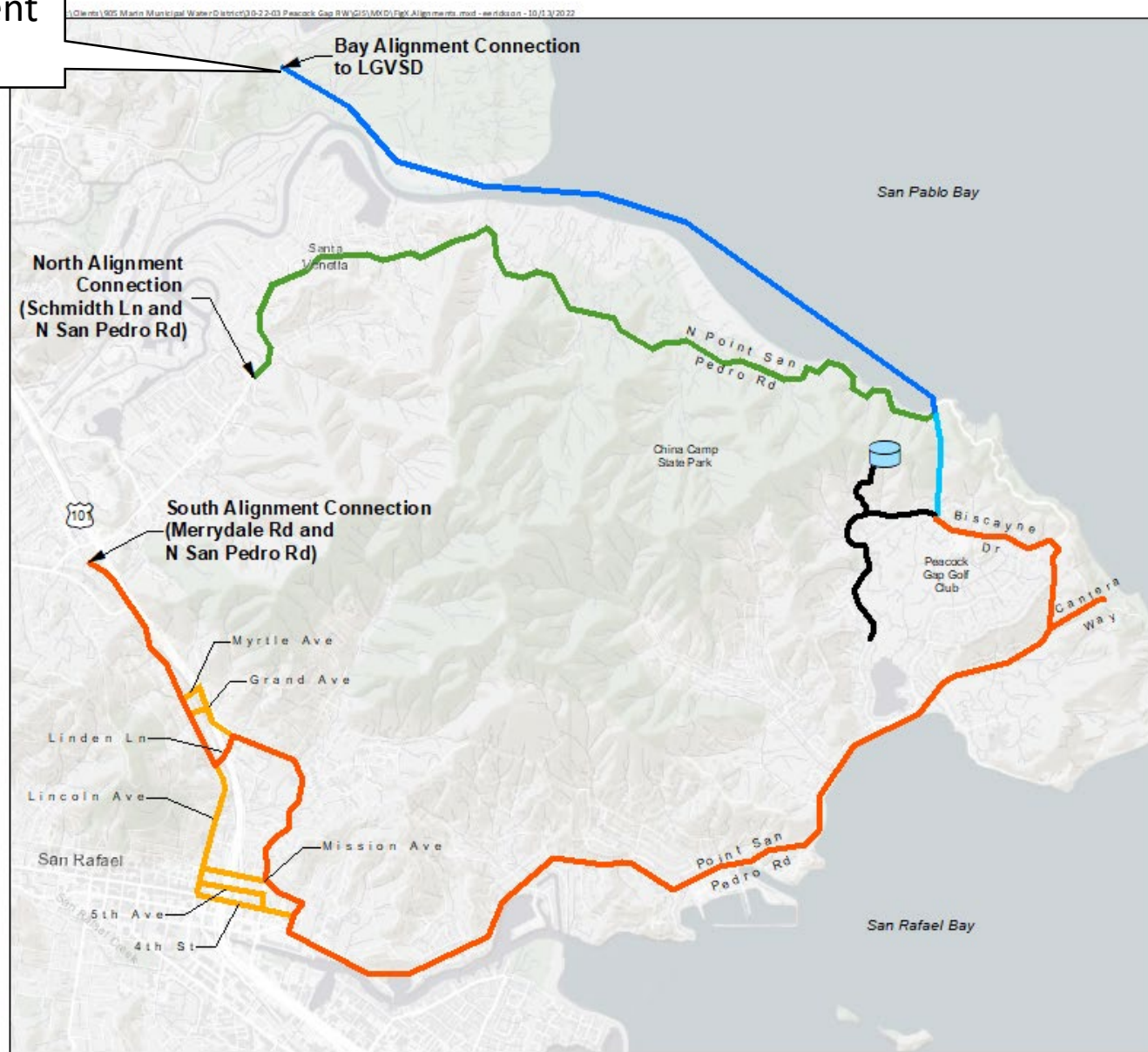


Background

- West Yost was hired in early 2022 to evaluate the 3 alternative pipeline alignments to the Peacock Gap area in San Rafael
- Project intended to serve the Peacock Gap area with recycled water
- Consultant Team:

Firm	Services
West Yost	Project Management, Design, QA/QC
McMillen Jacobs Associates	Geotechnical Engineering, Trenchless Design
Panorama Environmental, Inc.	Environmental Compliance
W-Trans	Traffic Engineering/Impacts
Cinquini & Passarino	Surveying (costing and feasibility)

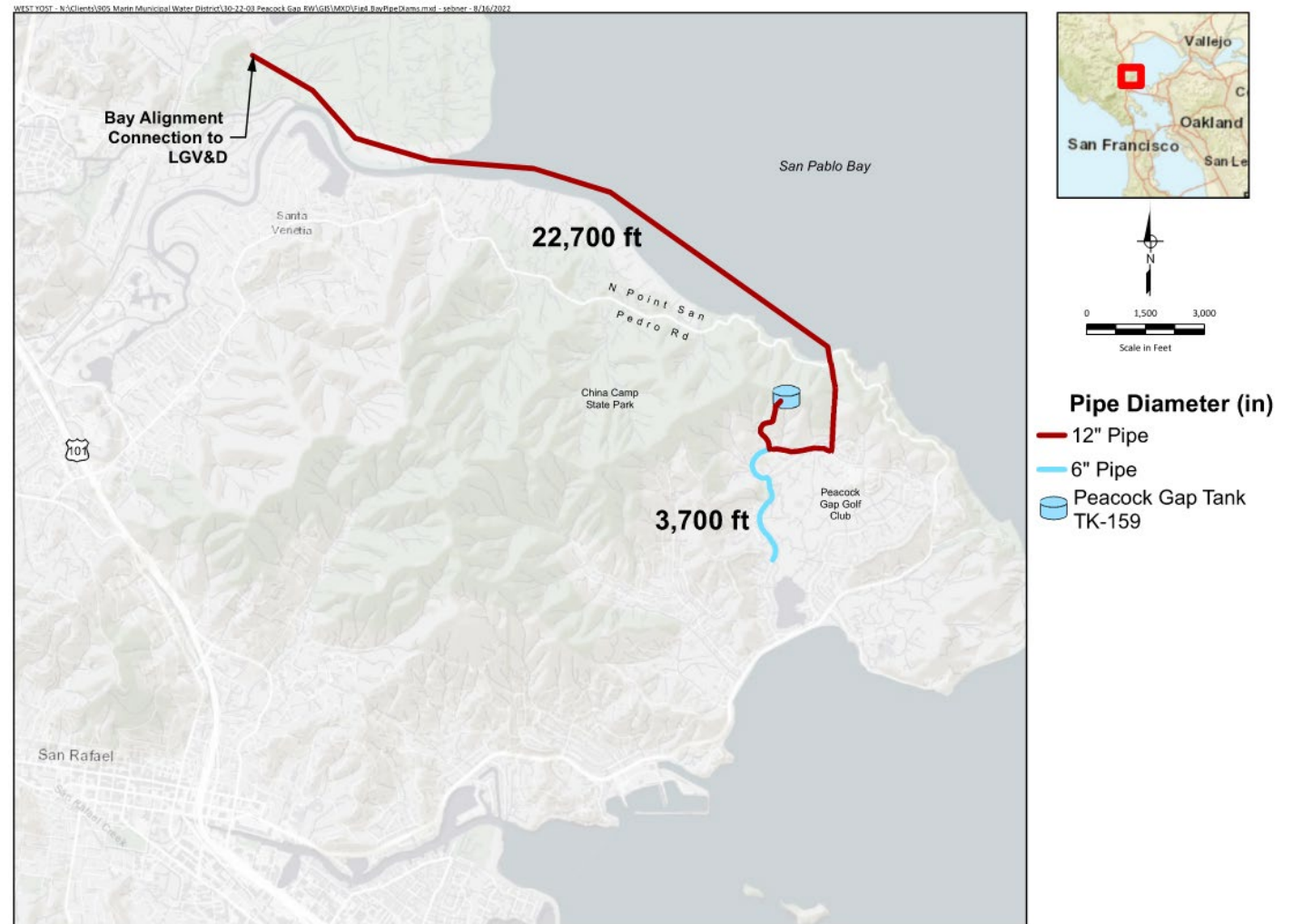
LGVSD Treatment Plant



- Peacock Gap Tank TK-159
- SouthAlignment
- Common to All Alignments
- South Alignment Alternatives
- NorthAlignment
- North/Bay Common Alignment
- BayAlignment

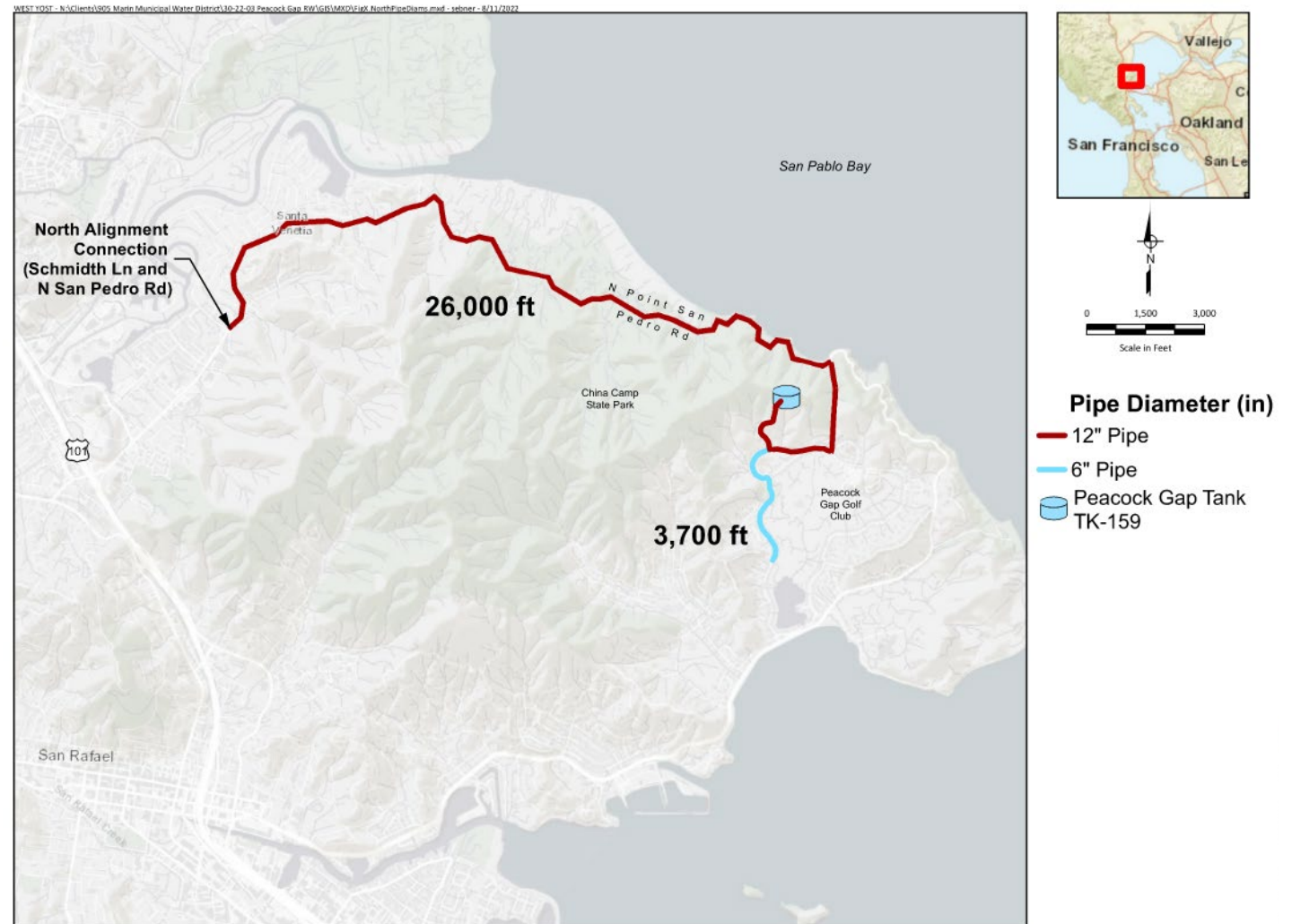
Bay Alignment

- Requires horizontal directional drilling in Bay Mud
- ~26,000 LF
- Requires easement through China Camp State Park
- Limited to 6 service connections



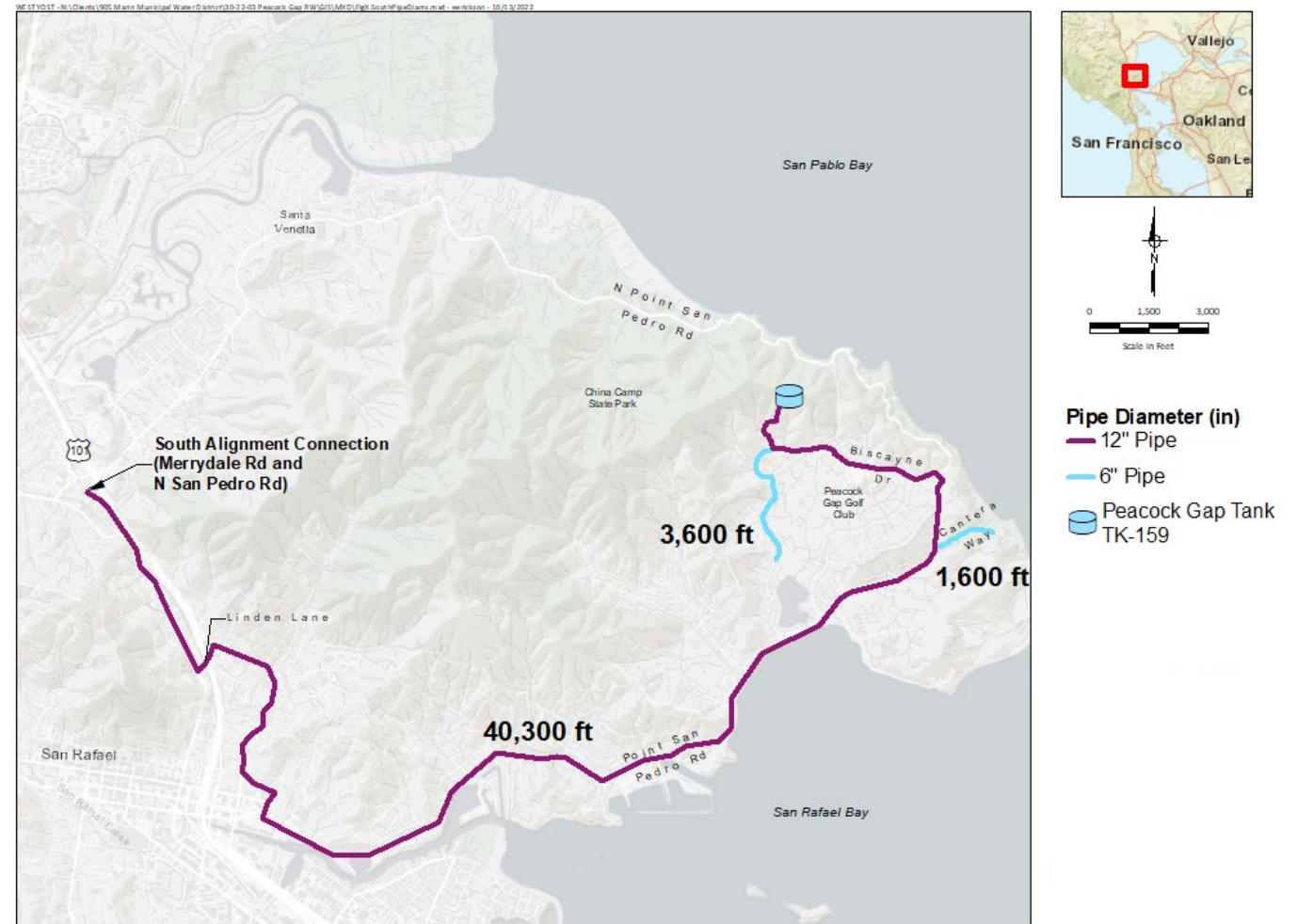
North Alignment

- In Marin County roadways
- ~30,000 LF
- Requires easement through China Camp State Park
- Limited to 10 service connections



South Alignment

- In City of San Rafael roadways
- ~46,000 LF
- Crosses SMART / US 101
 - trenchless crossings required
- 67 potential service connections



Scope of Work

- Performed Information Gathering and Desktop Studies
- Evaluated the Alternative Alignments
- Identified the Preferred Alternative Alignment
- Provided 30% Design Drawings



Information Gathering / Stakeholder Meetings

- Review of District documents
- Utility coordination and mapping
- Stakeholder coordination
- Geotechnical desktop study
- Cultural and biological desktop studies
- Site investigation
- Traffic Considerations

Stakeholders Engaged to Evaluate Alternatives	
City of San Rafael	State Lands Commission
Marin County	MCSTOPPP
SMART	BCDC
State Parks	Peacock Gap Golf Course
(Caltrans was contacted, but they did not respond)	

State Parks letter dated 6/24/22 stated that no easement would be allowed through China Camp State Park rendering the North and Bay Alignments infeasible

Alternatives Evaluation

- Potable water demand offset
- Future maintainability
- Design consideration / constructability
- Public impacts and stakeholder support
- Environmental considerations
- Overall project cost



Alternatives Evaluation Highlights

■ Bay Alignment

Pro	Con
Shortest alignment	Near zero potential for additional potable demand offset
	Army Corps of Engineers stated that all other alternatives need to be proven infeasible or having greater adverse effects before this alignment will be approved
	Length of horizontal directional drilling installation exceeds traditional equipment limits/capabilities; also lack of pipe staging area
	Pipe can't be sunk to the bay floor because bay is too shallow

Alternatives Evaluation Highlights

■ North Alignment

Pro	Con
Minimal existing utilities to design around	Low potential for additional potable demand offset compared to South Alignment
Least expensive alternative	Challenging CEQA/NEPA compliance efforts required
Predominantly in paved roadways	State Parks will not grant an easement across State Park's property
	Requires coordination with County on pending road project to improve North San Pedro Road (timing unknown)

Alternatives Evaluation Highlights

■ South Alignment

Pro	Con
Highest potential for potable demand offset	Most congested re: existing utilities
Most beneficial for future expansion into other areas of San Rafael	Most expensive
Support from Marin County, State Parks and City of San Rafael	Most disruptive to residents
Least challenging easements/right-of-way requirements	Extensive pavement restoration required
Least CEQA compliance efforts required	

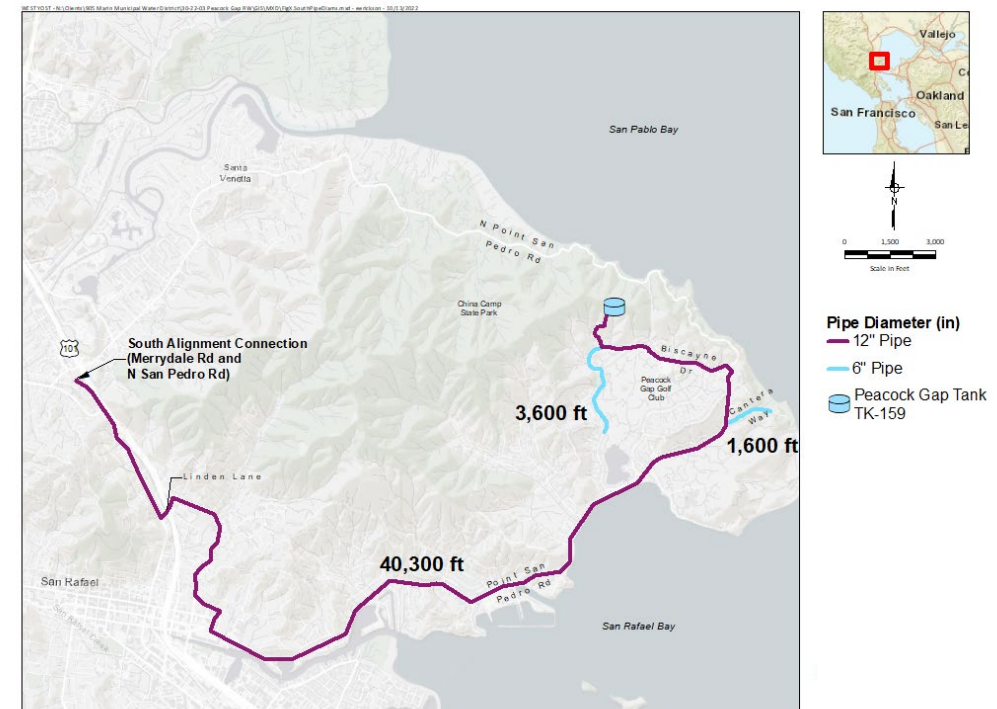
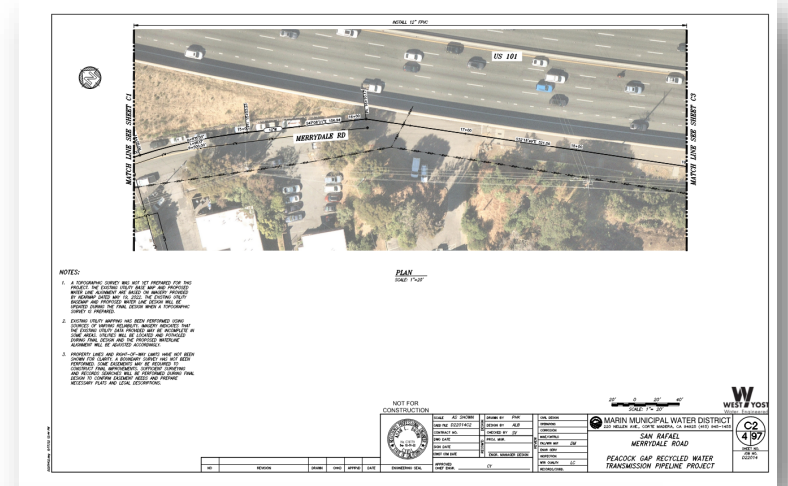
Costs

Alignment	Alignment Length, ft	Total Average Annual Demand, ac-ft	Total Project Cost, \$	Amortized \$/ac-ft
South	46,000	285	26.7M	\$5,200
North	30,000	176	16.6M	\$5,200
Bay	26,000	173	19.9M	\$6,400

- Project Costs includes proposed design, materials and construction costs (incl. contingencies)
- Alignment costs are amortized over 30 years at 3.75% interest rate
- Available grant funding opportunities would lower cost per acre foot

South Alignment Project

- South Alignment Project:
 - ~46,000 feet of mostly 12-in PVC
 - Proposed crossing US Hwy 101 at Linden Lane Tunnel
 - Peacock Gap Potable Water Tank conversion to Recycled Water
- Total Project Cost: ~\$26.7M
 - Includes design, easements, CEQA, construction, materials, contingencies, etc.
 - \$5,200/ac-ft without grant funding
- Project Duration: ~3-4 years
- Potential Connections: 67
- Potable Water Daily Demand Offset: 254,000 gallons (285 acre-feet annually)



Next Steps

- Findings from West Yost's Preliminary Design Report will be incorporated in the final Jacobs Strategic Water Supply Assessment Report
- Staff will continue to identify and pursue grant funding for recycled water projects