



Item C-1

Approval of WRF Project Conveyance Pipeline Alignment and Pump Station Strategy

Morro Bay, CA
February 13, 2019

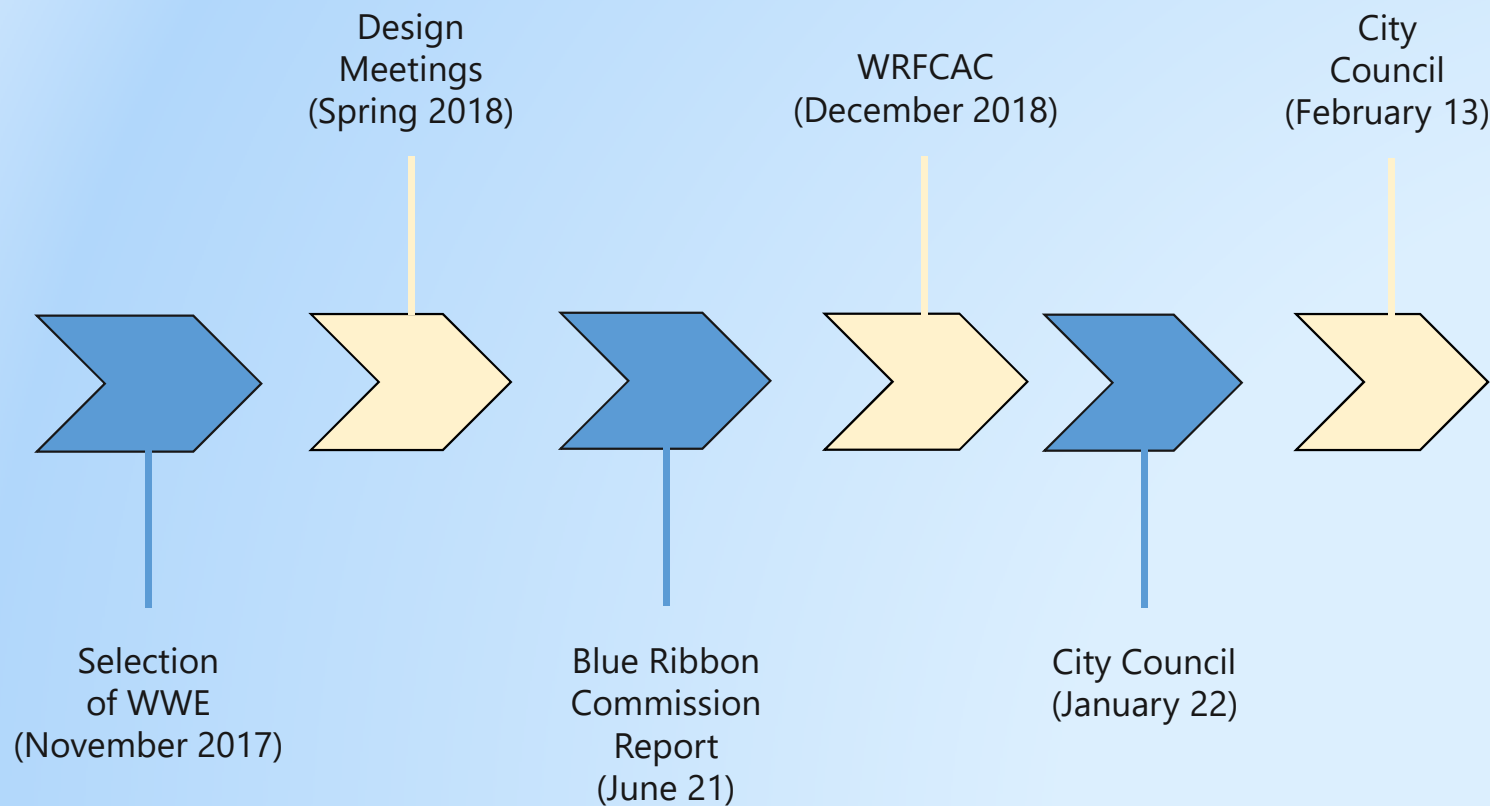
Recommendations

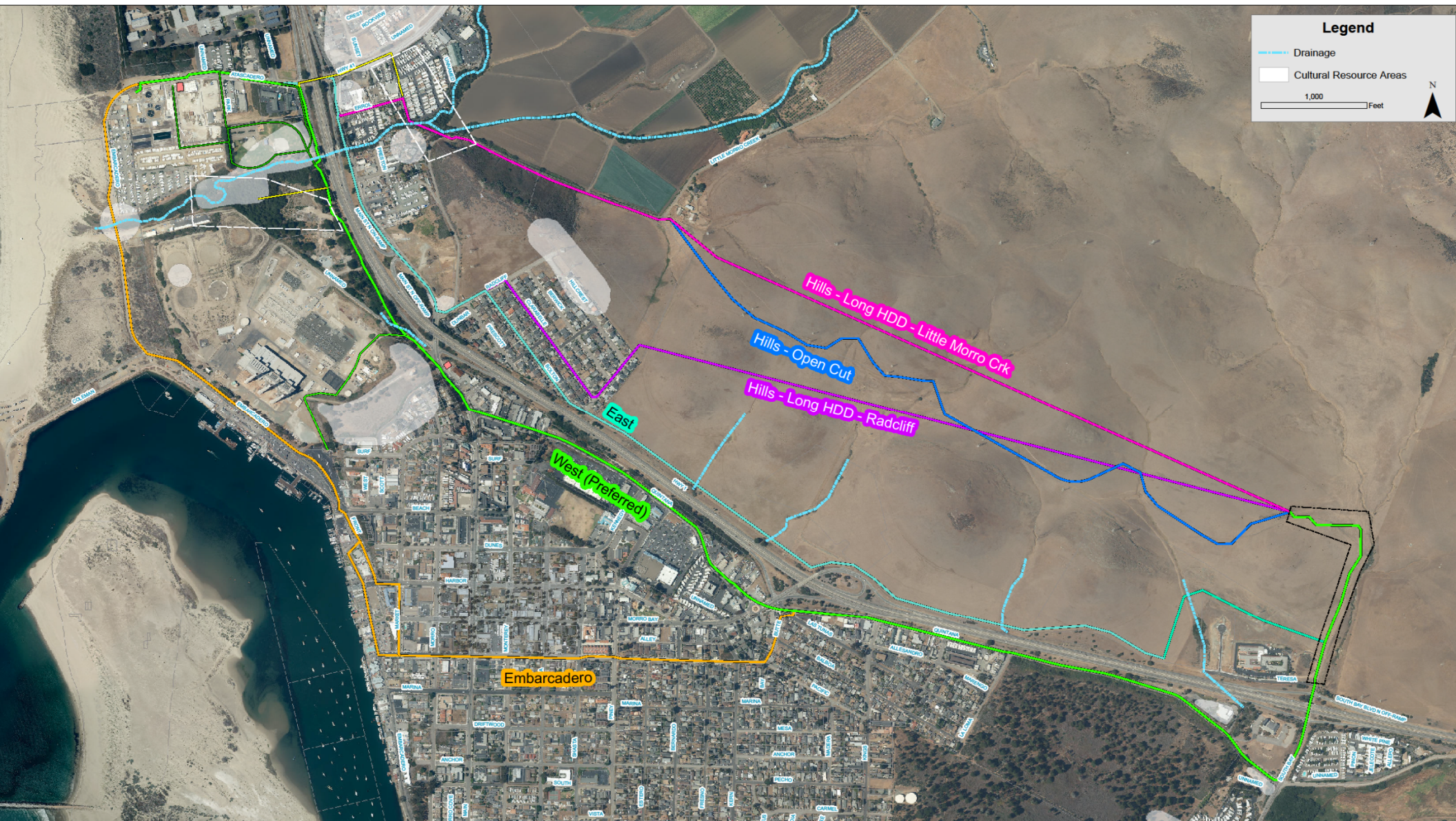
- **Take Action:** Approve staff's recommendation to proceed with the West conveyance pipeline alignment and the use of the dual pump station option for the Water Reclamation Facility (WRF) project



Conveyance Facilities Project

Conceptual design activities





Legend

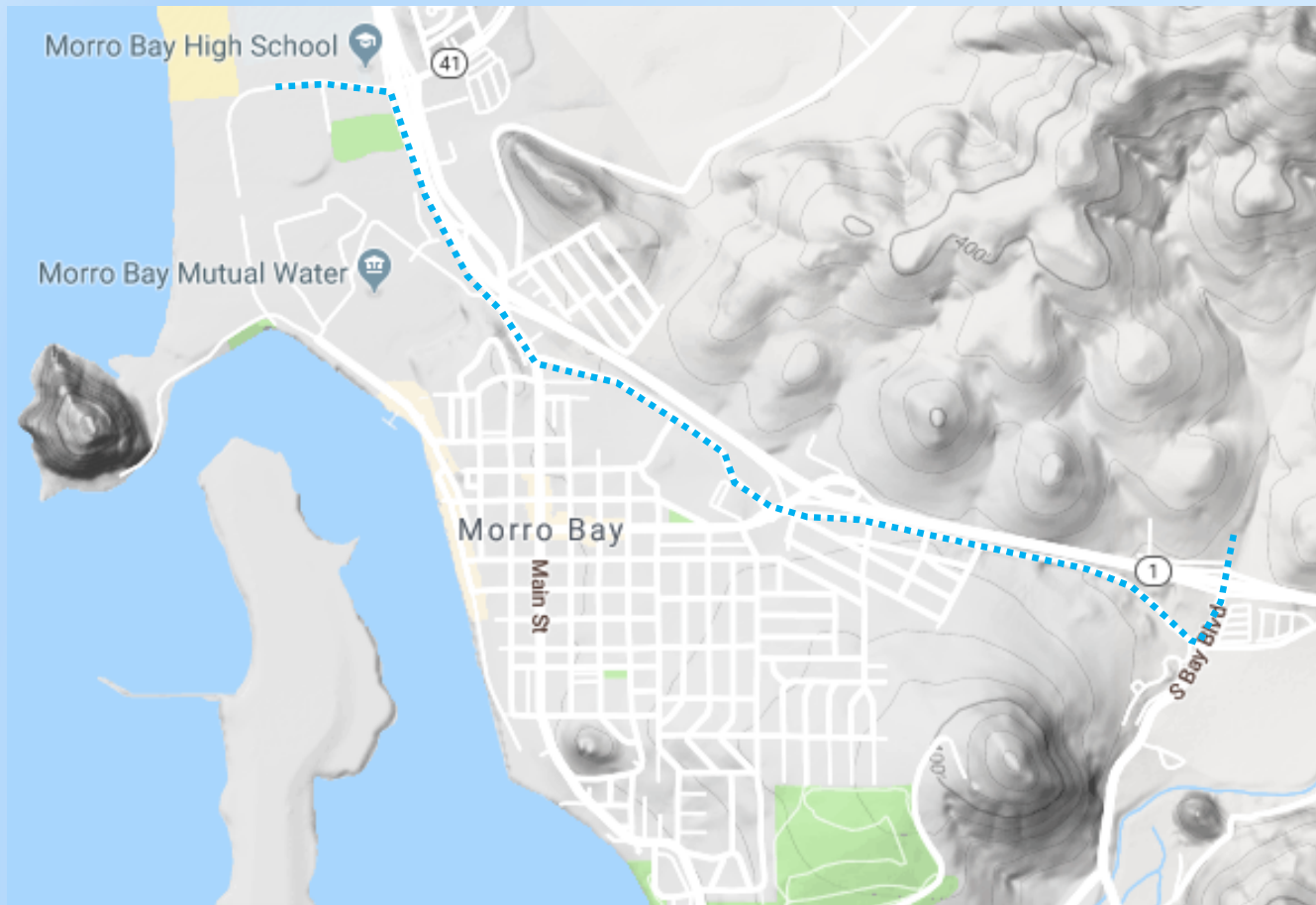
Drainage

Cultural Resource Areas

1,000 Feet

N

West alignment recommended



East alignments were fatally-flawed

Fatal Flaw Analysis	East (Open Cut)	East/West Alignment	Hills Creek	Hills- Radcliffe
Hydraulics	X		X	X
Environmental/Permitting	X		X	X
Constructability	X	X	X	X

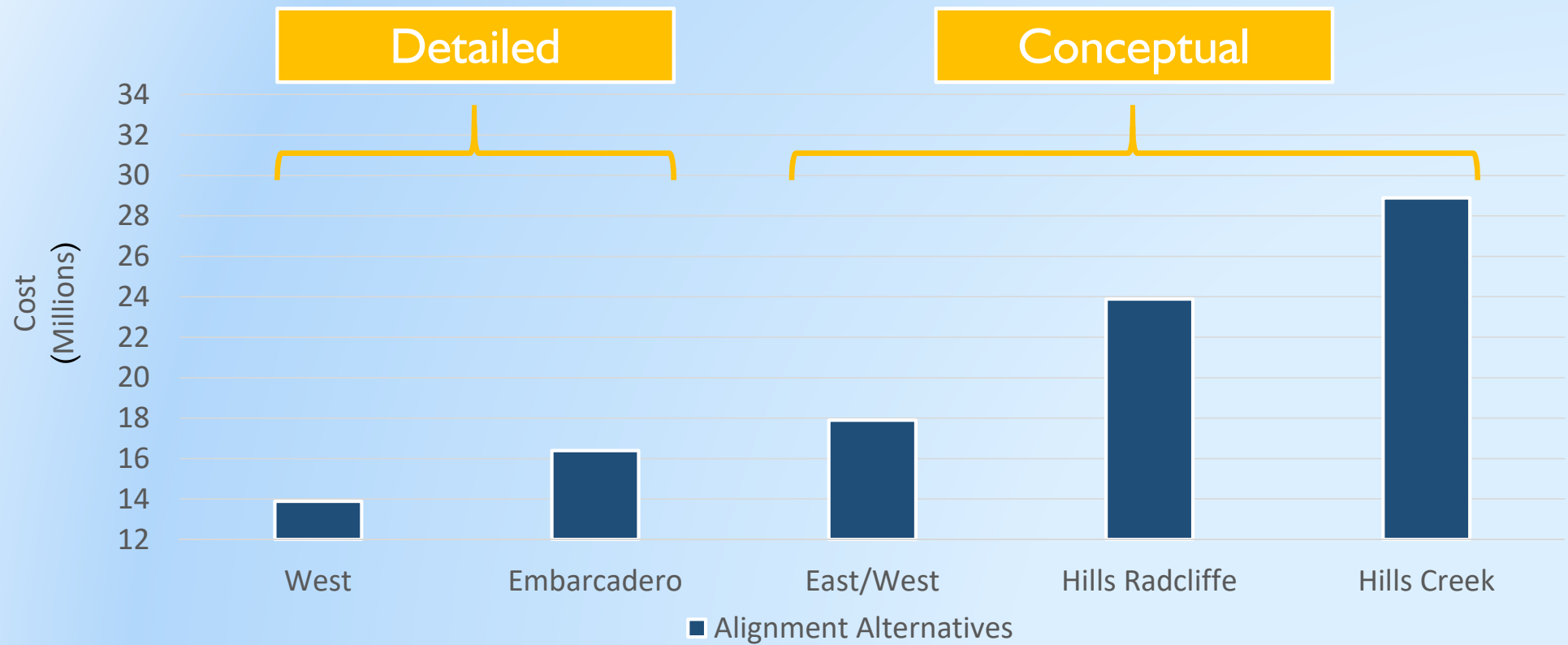
Detailed cost estimates for the West



Key Criteria and Constraints	West	Embarcadero
Hydraulics	+1	-1
Environmental / Schedule Risks	0	+1
Geotechnical	+1	-1
Cultural Resources	+1	-1
Accessibility / O&M	+1	+1
Dual Pump Station Integration	+1	-1
Constructability	0	+1
Right of Way Acquisition	0	+1
Traffic/Public/Commercial Impacts	-1	-1
Total Score	+4	-1

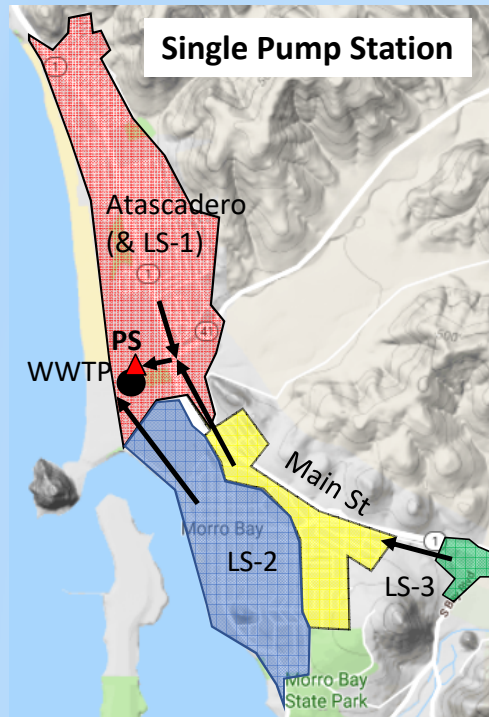
Project Costs: FM, Brine, Com.	\$13.9M	\$15.6M
Project Costs: IPR	\$2.3-3.3M	\$3.0-4.1M

Cost comparison for all alignments

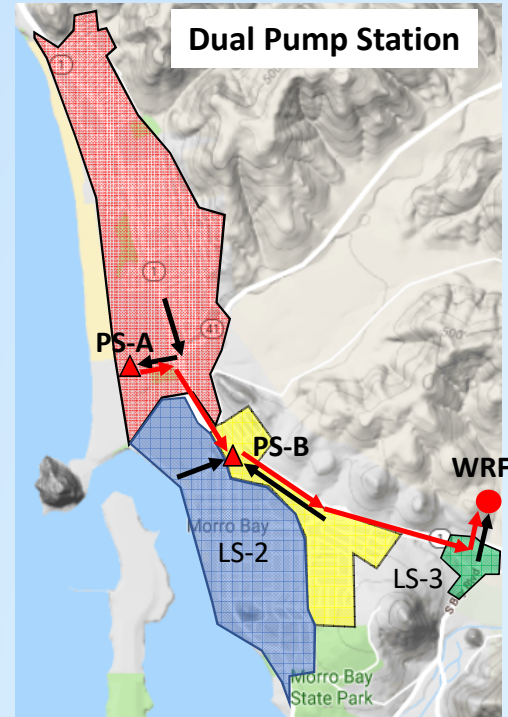


Maximizes existing infrastructure

Original Concept



Dual Pump Station



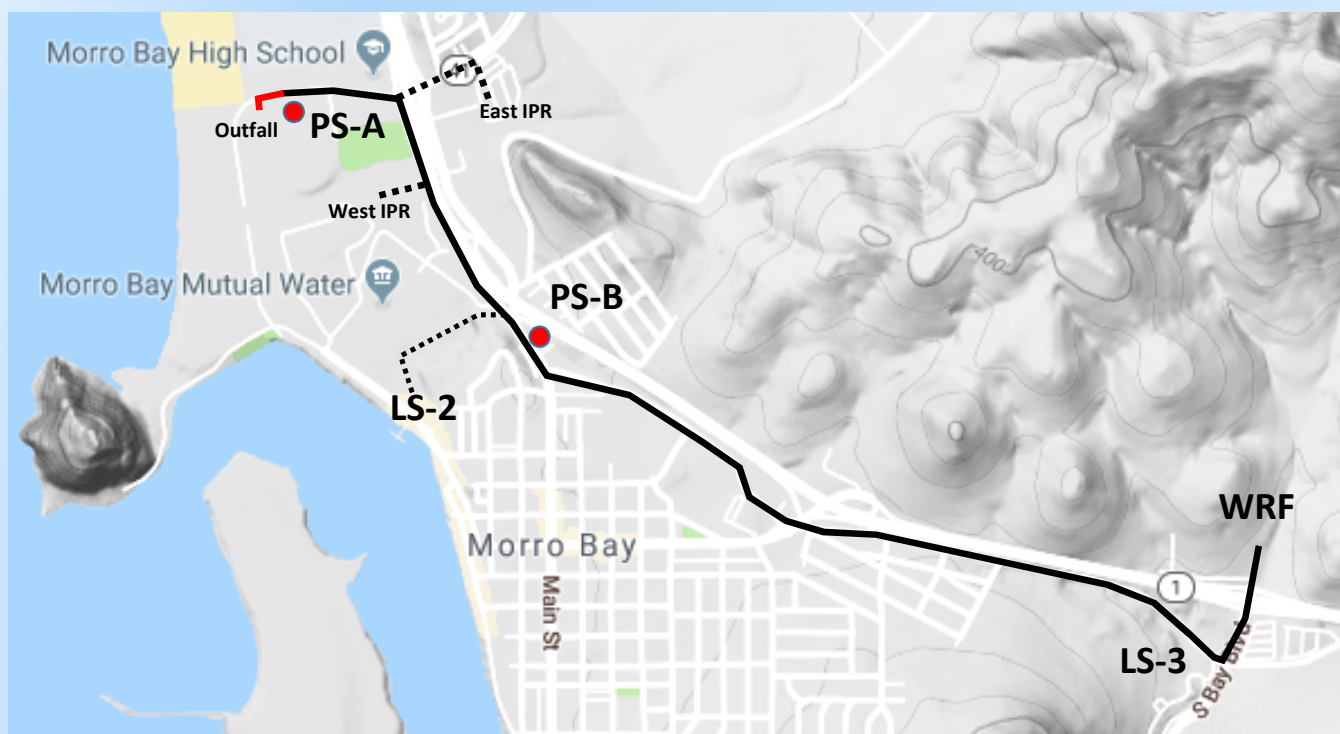
Proposed Concept
 Maximize use of existing
 infrastructure

Benefits of dual pump stations

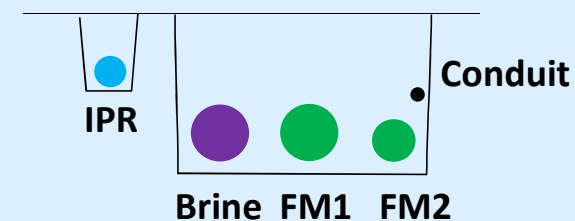
Key Criteria and Constraints	Single	Dual
Maximize existing infrastructure	-1	+1
Reduced travel time	-1	+1
# of New Stations	0	-1
Infrastructure in Coastal Zone	-1	+1
Standard Wet Well Configuration	-1	+1
Facility Maintenance Impacts	0	-1
Pipe Length for Pigging	-1	+1
LS-2 FM Redundancy	0	+1
Total Score	-5	+4
Project Costs: Pump Station	\$11.0M	\$8.4M



Recommended project



West Alignment



Recommendations

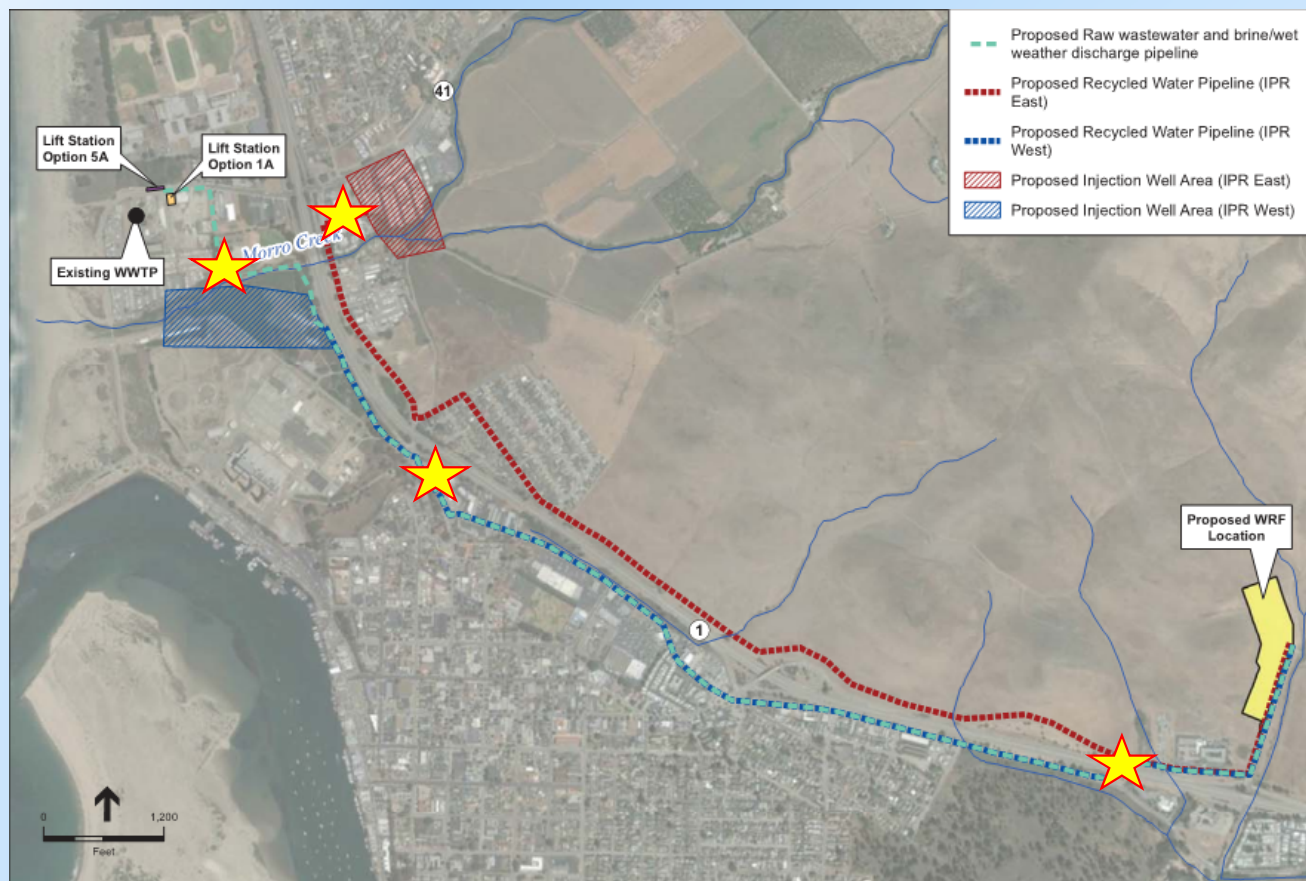


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Questions and Discussion

Revisions to the Final EIR



East injection site routing

Lila Keiser rerouting

Second pump station

Remove trenchless crossing

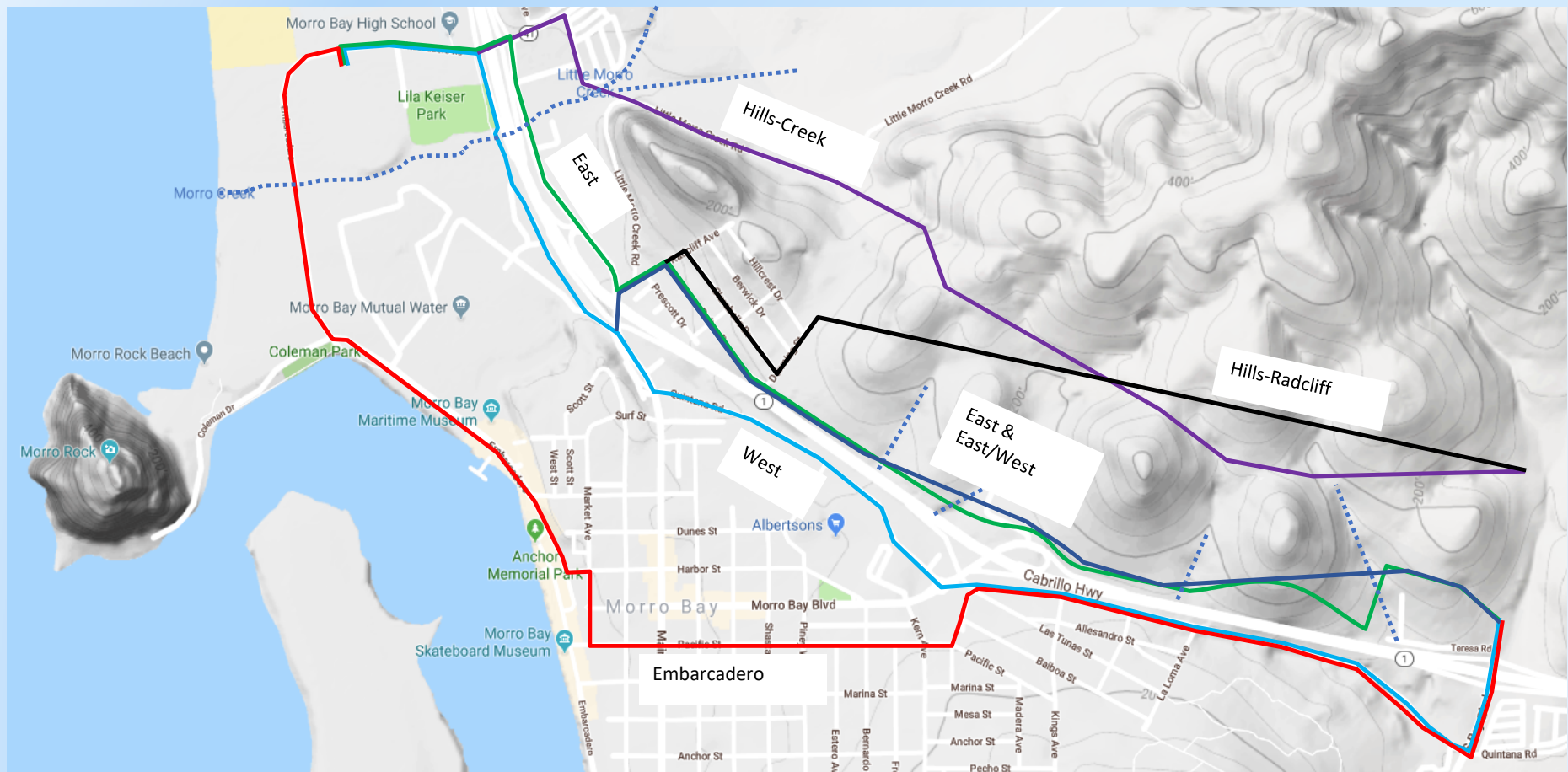
Preliminary Architectural Finishes



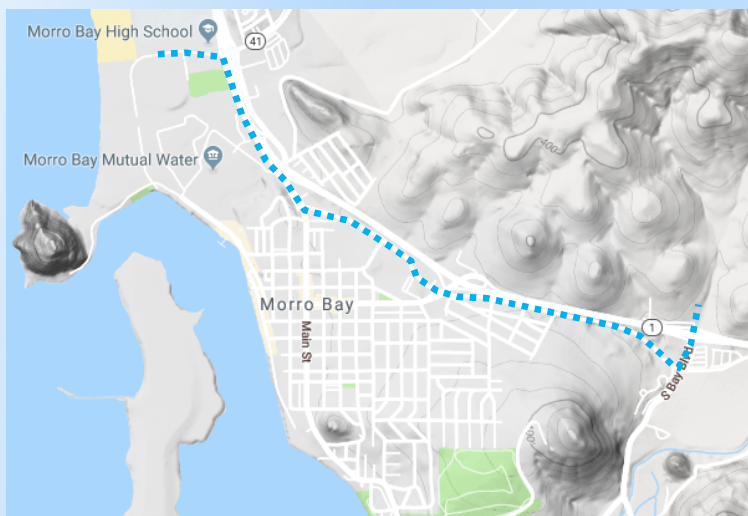
1. Split Face CMU Wall
2. Accent Stripe
3. Concrete Tile Roof
4. Fascia, Trim, & Eaves
5. Personnel Door



Numerous alignments were evaluated



West Alignment



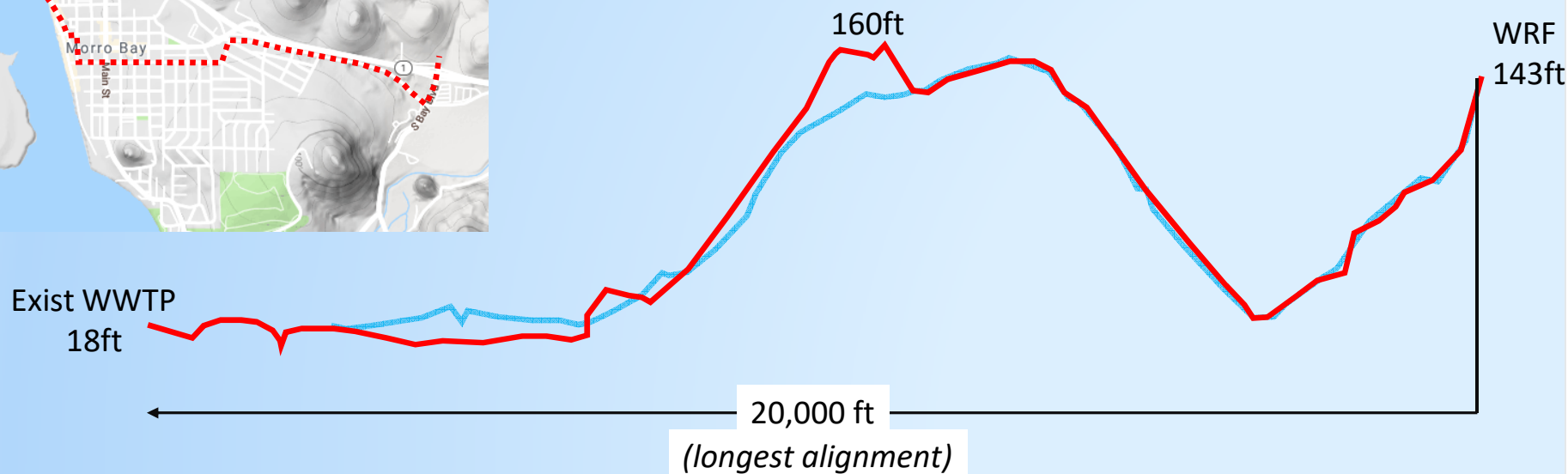
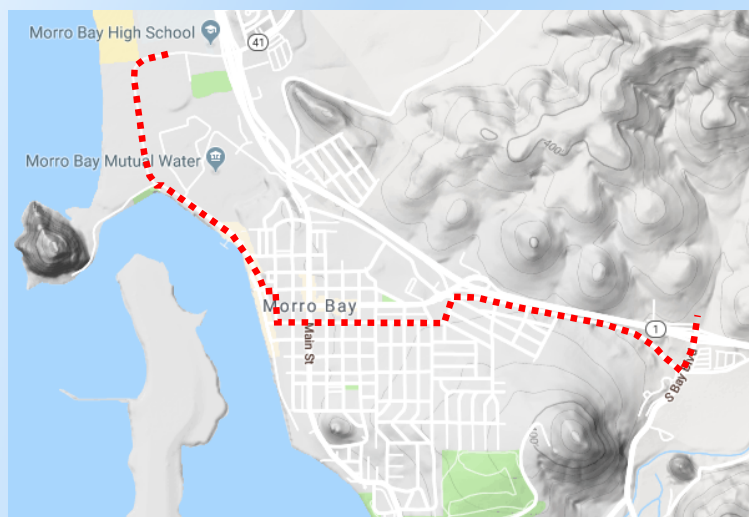
Exist WWTP
18ft

155ft

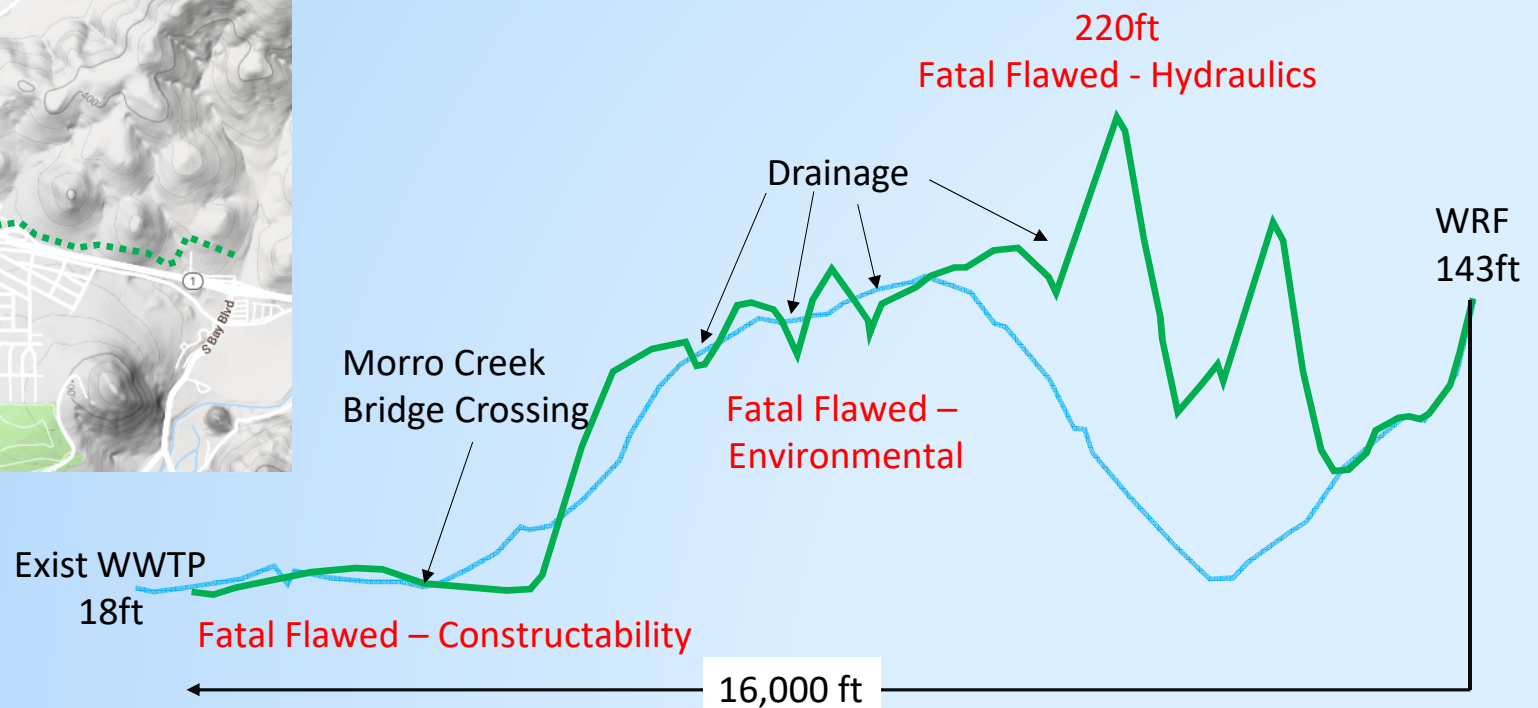
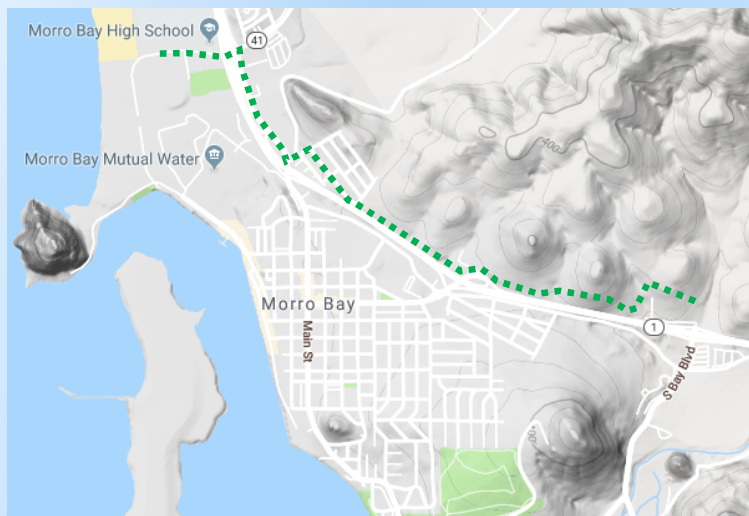
WRF
143ft

17,000 ft

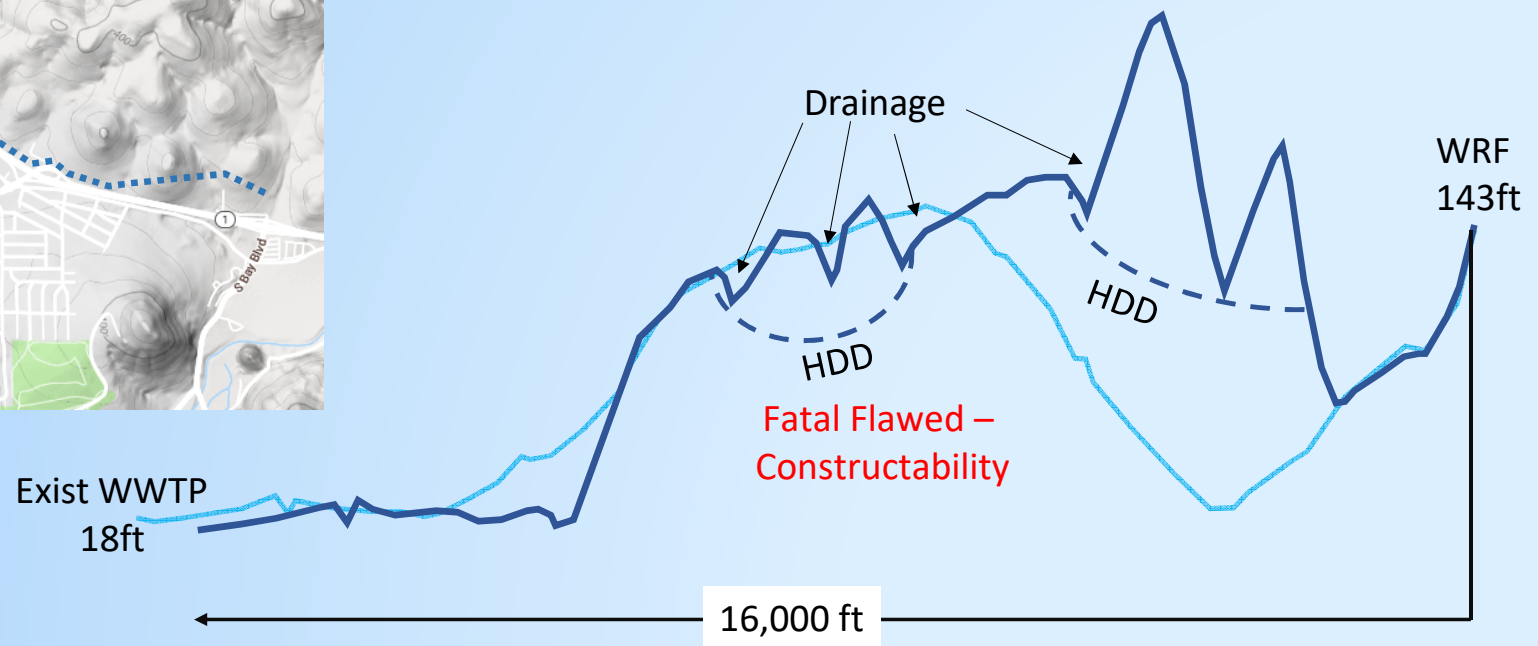
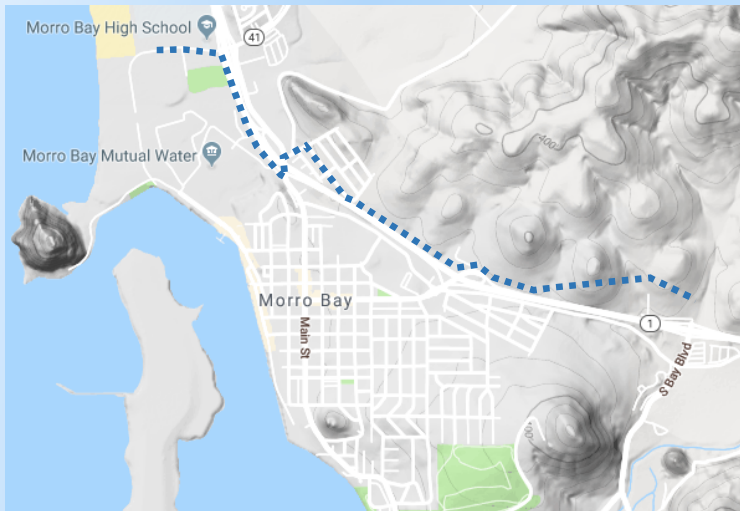
Embarcadero Alignment



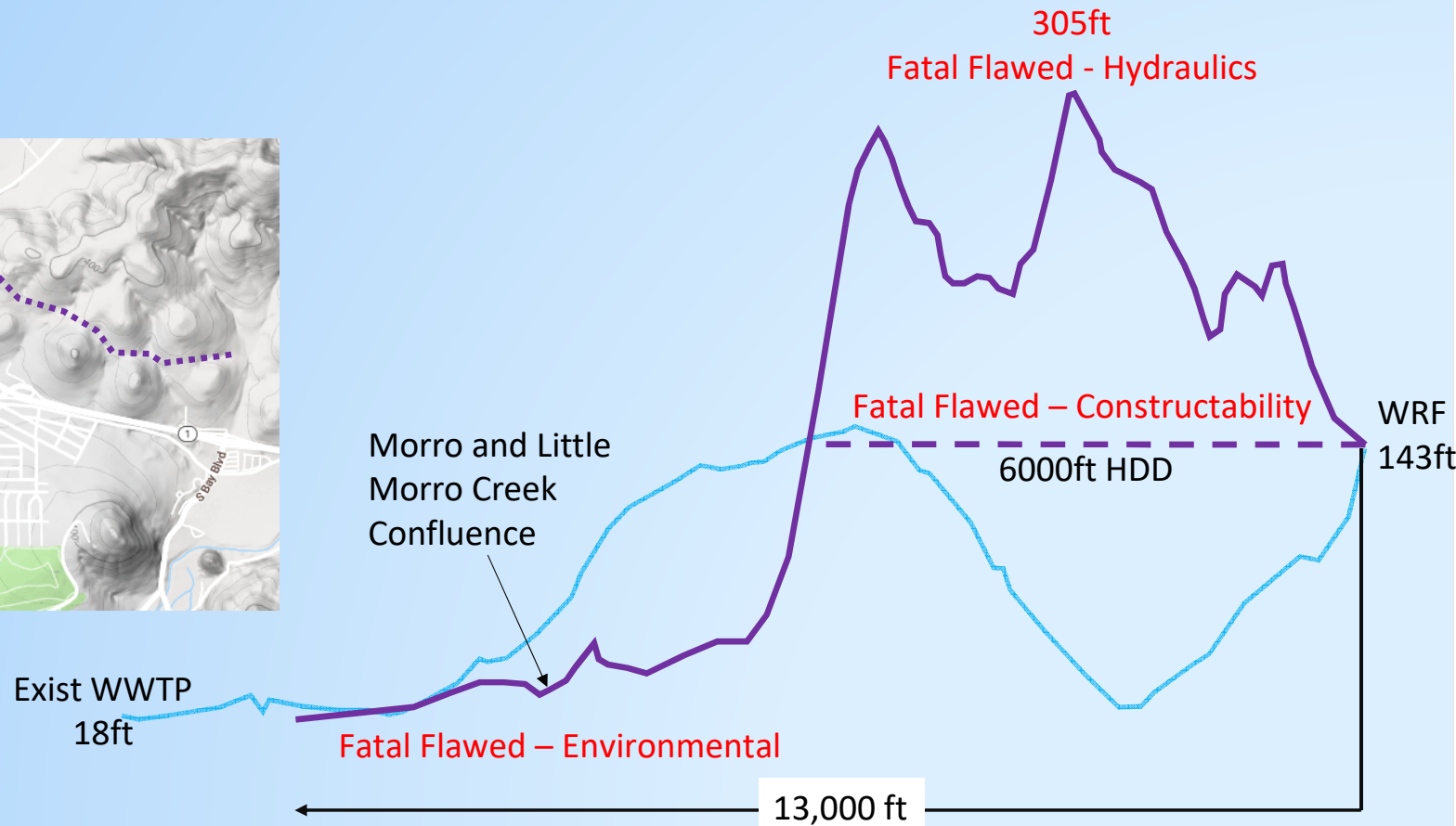
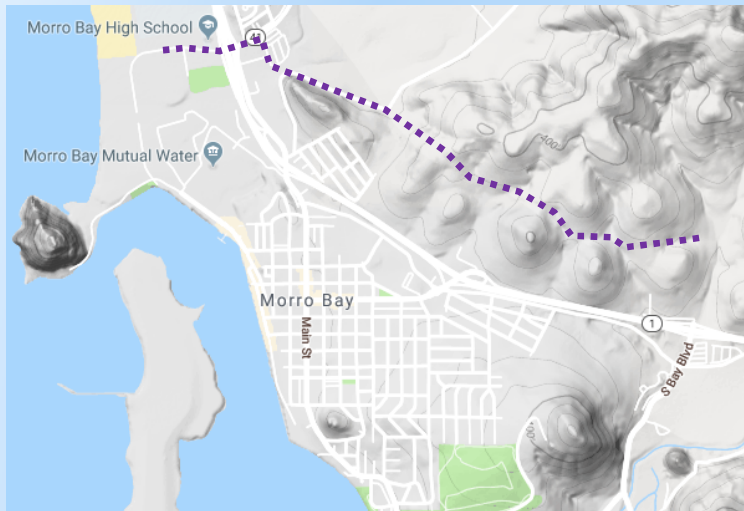
East (Open Cut) Alignment



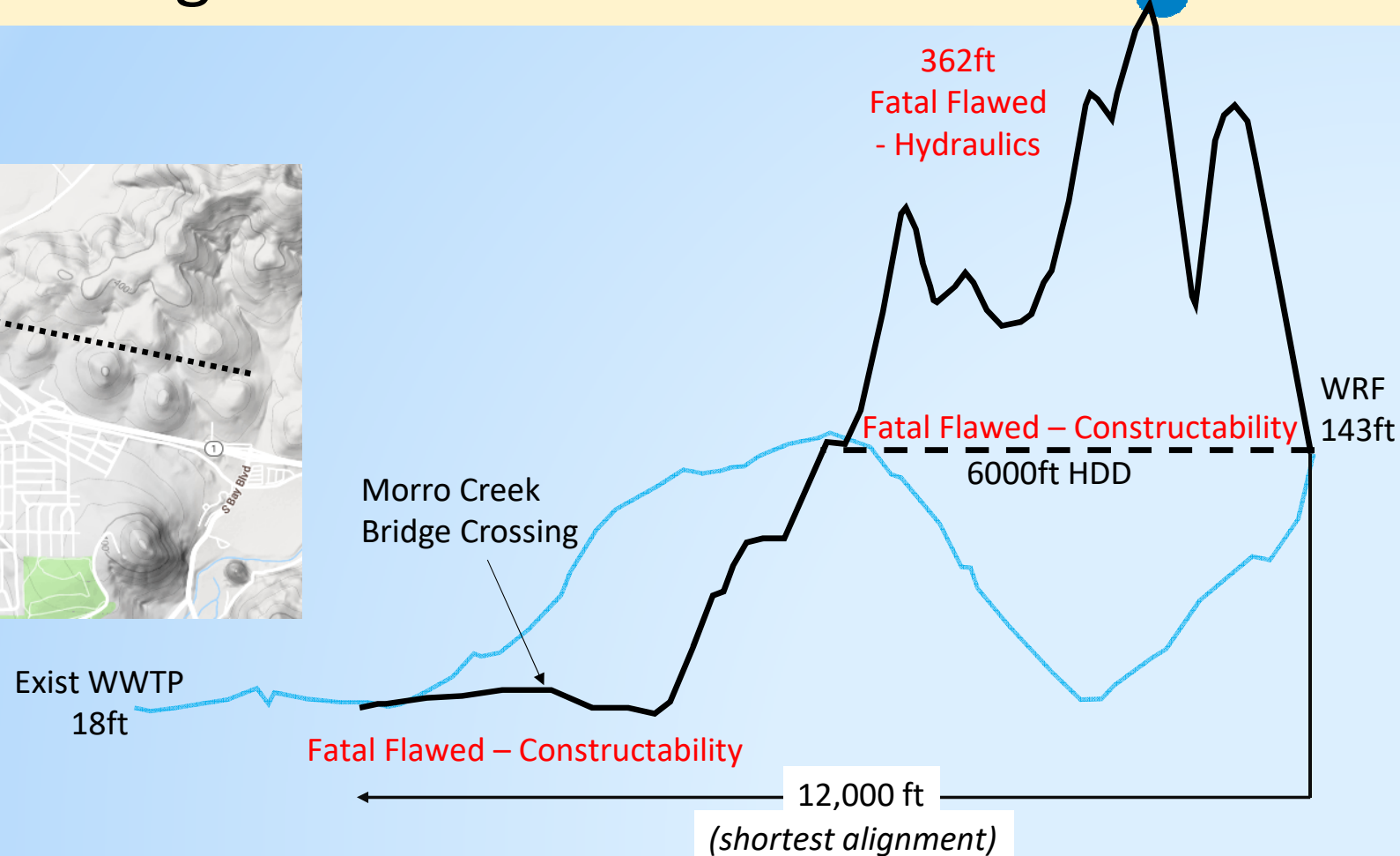
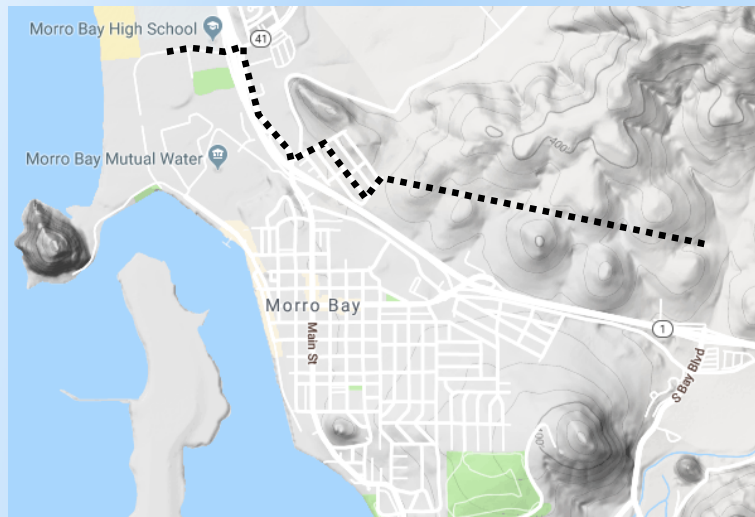
East (HDD)/West Alignment



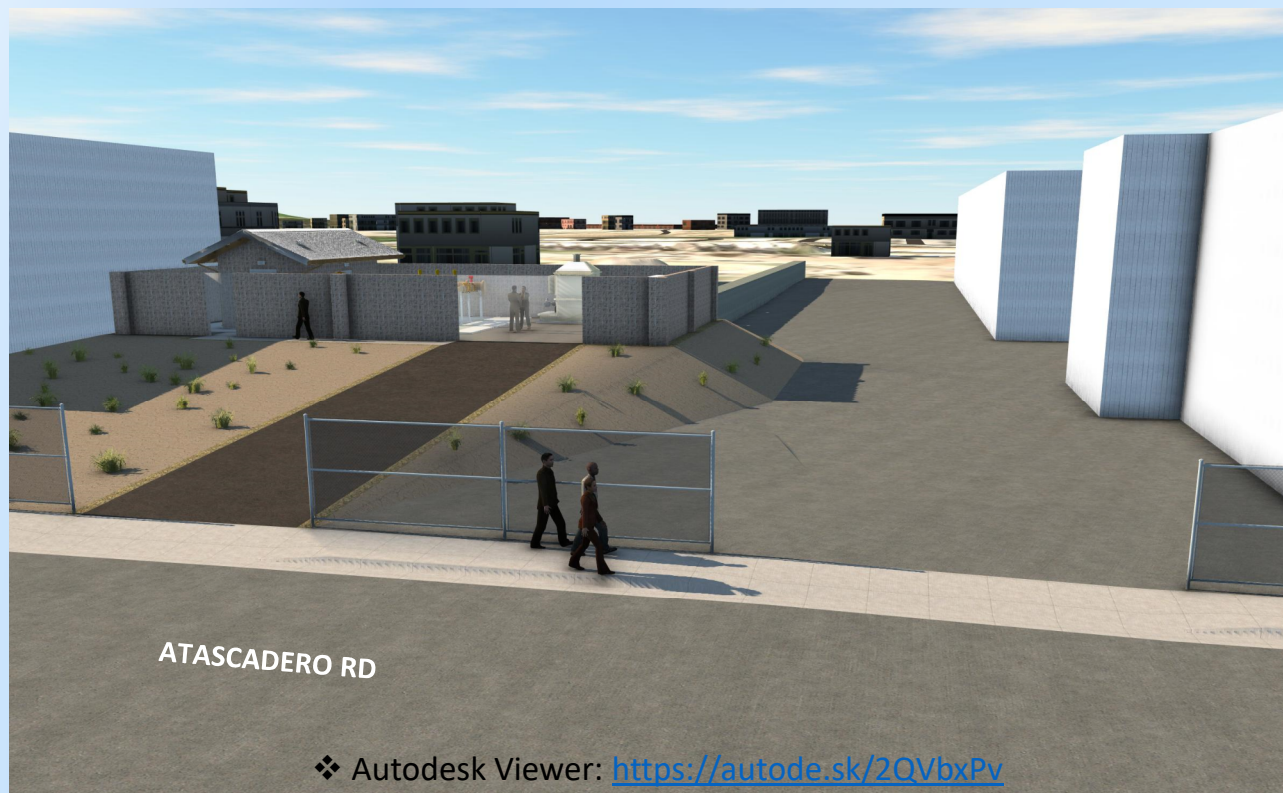
Hills Creek Alignment



Hills-Radcliff Alignment



PS-A Preliminary Rendering



❖ Autodesk Viewer: <https://autode.sk/2QVbxPv>



Existing Site



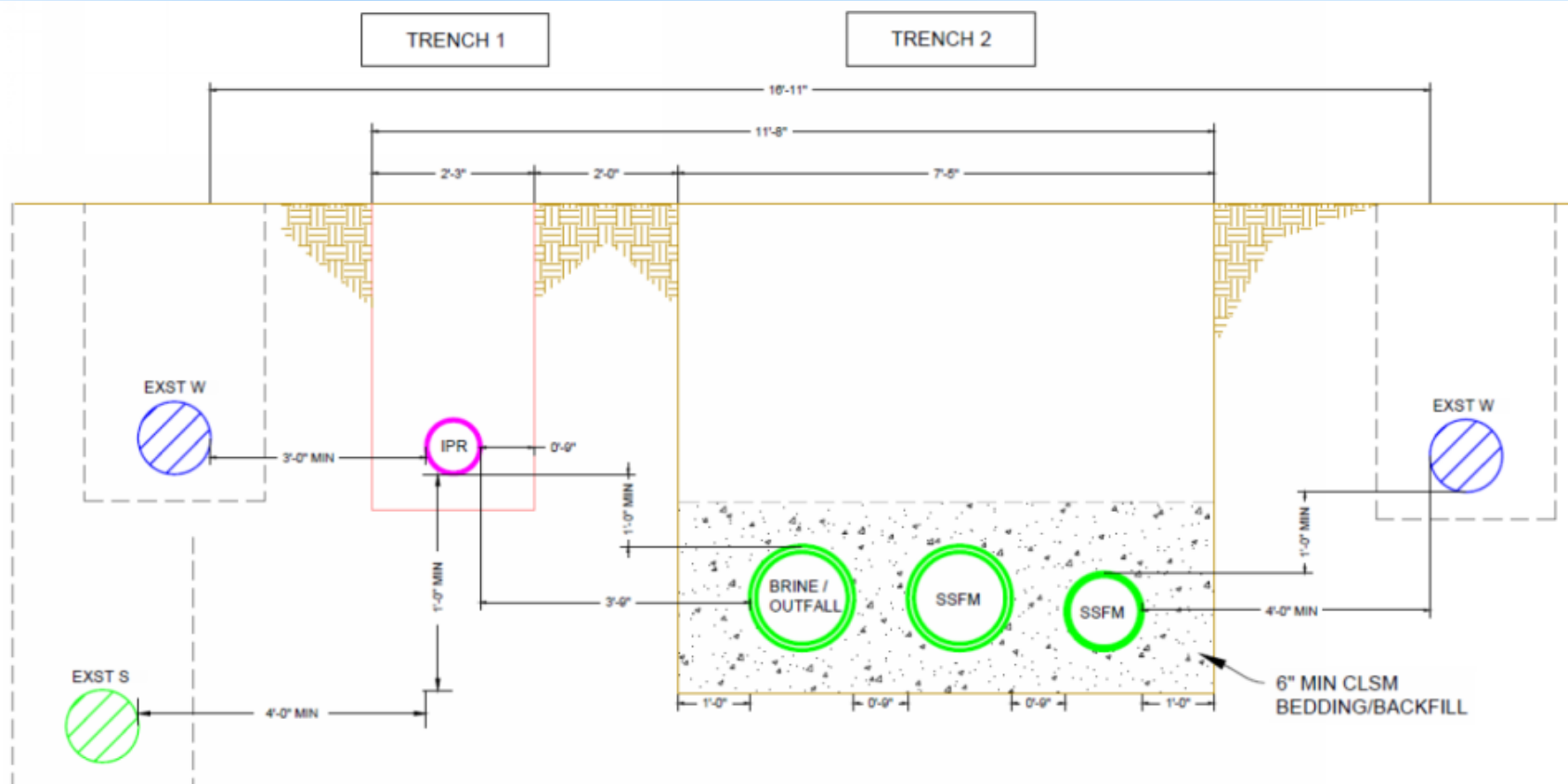
PS-B Preliminary Rendering



Existing Site



Trench section detail



Proposed Trench Section w/ Mitigation To Provide Equal Protection to 10-ft Separation