CITY OF MORRO BAY
WATER RECLAMATION FACILITY
CITIZEN ADVISORY COMMITTEE (WRFCAC)
NOTICE OF SPECIAL MEETING

The City of Morro Bay provides essential public services and infrastructure to maintain a safe, clean and healthy place for residents and visitors to live, work and play.

SPECIAL MEETING AGENDA
December 17, 2018
3:00 – 5:00 P.M.
Morro Bay Community Center - Studio
1001 Kennedy Way, Morro Bay, CA

Barbara Spagnola
Vice Chairperson
Citizens Oversight/Finance Advisory Committee

Paul Donnelly	Doug Rogers	Valerie Levulett
Jesse Barron, Planning Commission	Richard Sadowski, Planning Commission	Stephen Shively, Public Works Advisory Board

ESTABLISH QUORUM AND CALL TO ORDER

PUBLIC COMMENT FOR ITEMS ON THE AGENDA

SPECIAL AGENDA MEETING ITEM

I. REVIEW OF CONCEPT DESIGN REPORT PRESETATION FOR WRF CONVEYANCE SYSTEM
Staff Recommendation: Staff recommends the Water Reclamation Facility Citizens Advisory Committee (WRFCAC) review and provide comments regarding the presentation from WaterWorks Engineers (WWE).

ADJOURN

DATED: 13 December 2018

Barbara Spagnola, CFAC Chair & WRFCAC Vice Chair

This agenda is subject to amendment up to 24 hours prior to the date and time set for the meeting. Please refer to the agenda posted at the Public Works Department, 955 Shasta Avenue, for any revisions or call the department at 772-6262 for further information.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Public Works Department at (805) 772-6262. Notification 24 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

AGENDA NO:	**I**
MEETING DATE:	**December 17, 2018**

Staff Report

TO: **Water Reclamation Facility Citizens Advisory Committee**

DATE: **December 14, 2018**

FROM: **Rob Livick, PE/PLS – Public Works Director/City Engineer**
Eric Casares, PE – Water Reclamation Facility (WRF) Program Manager

SUBJECT: **Review of Concept Design Report Presentation for Water Reclamation Facility Conveyance Facilities**

RECOMMENDATION

Staff recommends the Water Reclamation Facility Citizens Advisory Committee (WRFCAC) review and provide comments regarding the presentation from WaterWorks Engineers (WWE).

FISCAL IMPACT

No additional fiscal impact is proposed within this update. All work is proceeding within the City's budget for the WRF.

BACKGROUND

The WRF Program includes the construction of a new treatment facility with advanced treatment at the South Bay Boulevard site, conveyance facilities consisting of a lift station(s) and pipelines to connect the new treatment facility to the existing wastewater treatment plant (WWTP), and offsite recycled water facilities necessary to inject purified water into the Lower Morro Groundwater Basin (i.e., indirect potable reuse [IPR]).

On November 06, 2017, the City selected WWE to provide Engineering Design Services for the new WRF Lift Station and Offsite Pipelines Project (i.e., Conveyance Facilities Project). The major design tasks for the Conveyance Facilities Project include:

- Coordination with City for selection of lift station location
- Hydraulic analysis
- Pump selection
- Wet well design
- Odor control design
- Design of backup power supply
- Pipeline alignment verification
- Force main pipeline design
- Brine discharge pipeline design

Prepared By: __EC_____ **Dept Review:** __RL__

WWE's engineering design services for the Conveyance Facilities Project include:

- Review and verification of the preliminary design criteria presented in the Draft WRF Master Plan
- Development of a Site Alternatives Study to finalize selection of the lift station site
- Preparation of a Concept Design Report (30-percent)
- Preparation of draft construction documents including plans, specifications and cost opinions at the 60 percent, 90 percent, and 100 percent completion milestones
- Preparation of final construction documents including plans, specifications and cost opinions

WWE has been working with City staff and the WRF Program Manager over the last several months and is nearly complete with the Draft Concept Design Report. To date, WWE has completed the analyses for the preliminary design and is working to finalize the draft report. This presentation by WWE summarizes the findings from the preliminary design analyses that will form the basis of the Draft Design Report. City staff will be bringing the Final Draft Concept Design Report to Council and WRFCAC at a later date prior to commencing with the final design.

DISCUSSION

The overall objectives of the Concept Design Report include identifying, developing, assessing, and recommending the following:

- Siting, design criteria, and project constraints for the WRF lift station(s)
- Alignment, design criteria, and project constraints for the offsite pipelines (sewer forcemains, brine/effluent line, and communication conduit), as well as the IPR line

Alignment Alternatives Development

For the first step in the assessment of pipeline alignments, WWE identified five (5) working alignments including:

- West Alignment
- East Alignment
- Embarcadero Alignment
- Hills Alignment (Little Morro Creek)
- Hills Alignment (Radcliff St)

A figure showing the alignment alternatives is shown in Attachment A.

WWE began the preliminary assessment by identifying fatal flaws from the pipeline design criteria and constraints for several working alignments. The following alignments were carried forward into the next phase of analysis:

- West Alignment
- East Alignment

The final alignment alternatives that were not fatal flawed were then assessed based on total project costs and non-cost project impacts. The results of the analysis are presented below:

Final Alternative Alignments Total Construction Costs Summary

Alignment	Raw Wastewater and Brine Forcemains (million)	West IPR (million)	East IPR (million)	Communication Conduit (million)
West	$13.5	$2.3	$3.3	$0.41
Embarcadero	$15.1	$3.0	$4.1	$0.49

Final Alignments Non-Cost Project Constraints

Criteria	Alignment	
	West	Embarcadero
Accessibility/O&M	+	+
Constructability/Traffic Impacts	0	+
Atascadero Road Beach Frontage Aesthetics	+	-
Construction Methodology / Trenchless	-	0
Environmental Permitting / Schedule Risks	0	+
Cultural Resources	+	-
Utility Coordination	-	+
Right-of-Way (Encroachment Permitting)	0	+
Private Property Acquisition (Easement / Purchase)	0	-
Outside Stakeholder Coordination (DDW, Dynegy, PG&E, Caltrans)	-	0
Geotechnical	+	-
Pump Station Connectivity	+	-

From the analysis presented above, the Embarcadero alignment generally has comparable constraints with the West Alignment, but is approximately $2.5- 3.0 million more expensive due to pipeline related costs (if including the cost of the East IPR and impacts to dual PS feasibility).

Pump Station Alternatives Assessment

WWE conducted a pump station alternatives assessment based on the final alignment alternatives developed as part of the offsite pipelines assessment. With the intent of developing a pumping solution to meet challenge operating conditions, is cost-effective, and supports successful long-term operations and maintenance, both single and dual pump station configurations were evaluated. The three scenarios evaluated included:

- Scenario 1: Single Pump Station (PS)
- Scenario 2: Secondary Stormwater PS-B
- Scenario 3: Full-Time PS-B

The anticipated costs for each scenario are summarized below.

Pump Station Total Construction Costs Summary

Scenario	1	2	3
Estimated Construction Cost (million)	$11.0	$8.4	$8.4
Estimated O&M Cost	$59,000	$70,000	$83,000
Estimated Replacement Costs	$230,000	$171,000	$157,000

Scenario 3 was the preferable alternative as the benefits and costs savings associated with a

multi-station setup outweighed that of a single station. Since the City would not have to procure additional property, PS Site 2 – South of Atascadero is preferable for PS-A, and West Site 2 – Main Street at Highway 1 is preferable for PS-B. Despite having to maintain two stations, the full-time PS-B booster pump station option:

- Eliminates the complexity of pumping operations and valving associated with only using PS-B during wet weather
- Has less pumps to maintain than a single station
- Has the least amount of idle/unused infrastructure
- Reduces complexity of sewer forcemain maintenance

A flow chart for the Concept Design Report alternatives analysis for both the pipeline alignments and lift stations is included in Attachment B.

A summary of why the approach recommended in this Draft Concept Design Report for the pipelines and lift stations best fits the overall project goals include:

- Least expensive alternative that incorporates redundancy via dual forcemain and maximizes long-term operability and ease of maintenance
- Uses existing City right-of-way or easements where feasible along the West Alignment
- Reduces traffic impacts by utilizing a trenchless crossing of the Morro Bay/Quintana roundabout
- Avoids known cultural resources in the Lila Keiser Park area via the Caltrans parallel encroachment on the Highway 1 connector shoulder
- Leverages local flow diversions via dual pump stations which provide the best flow range per pump station and optimizes pump sizing
- Potentially reduces or eliminates sanitary sewer capacity improvement projects on Main Street due to the PS-B diversion
- Eliminates double pumping of LS-3 flows and effectively eliminates its forcemain
- Provides redundant LS-2 forcemain without requiring upgrades to that station

Next Steps

In order for the Conveyance Facilities Project to move forward, the City needs to confirm which pipeline alignment and pump station configuration will move forward into the final design phase. The decision will be made by City Council in January 2019. Following direction from Council, the Conveyance Facilities Project will progress through final design and bidding with the major milestones summarized in the table below.

Project Milestone Schedule

Milestone	Date
Deliver Draft Conceptual Design Report to WRFCAC	January 2019
Deliver Draft Conceptual Design Report to City Council	February 2019
Deliver 60 Percent Design Submittal to City staff	April 2019
Deliver 90 Percent Design Submittal to City staff	July 2019
Deliver 100 Percent Design Submittal to City staff	September 2019
Finalizing Bidding Documents	October 2019
Bid Advertisement	November 2019
Project Award by City Council	January 2020
Issue Construction Notice to Proceed	February 2020

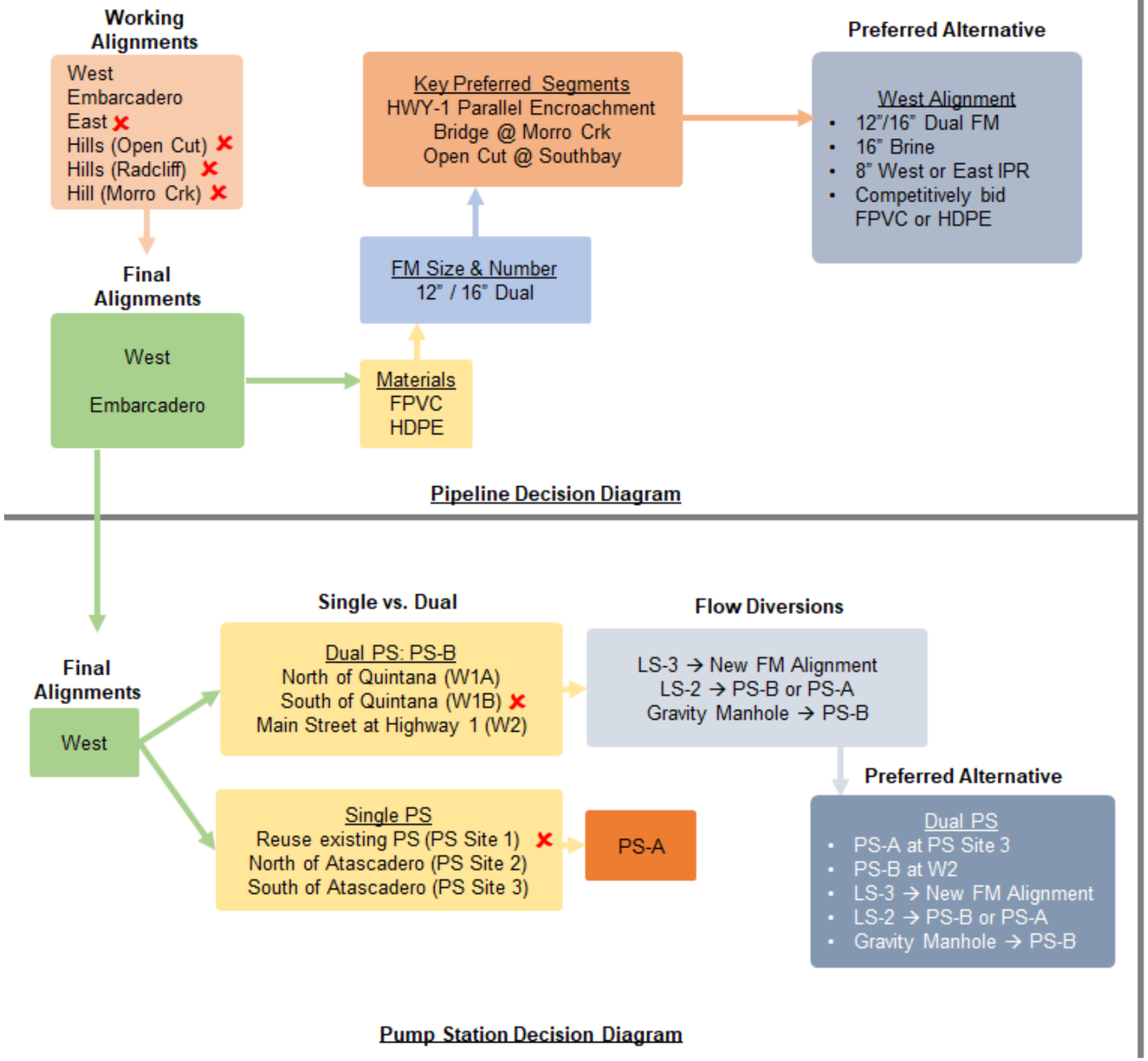
CONCLUSION

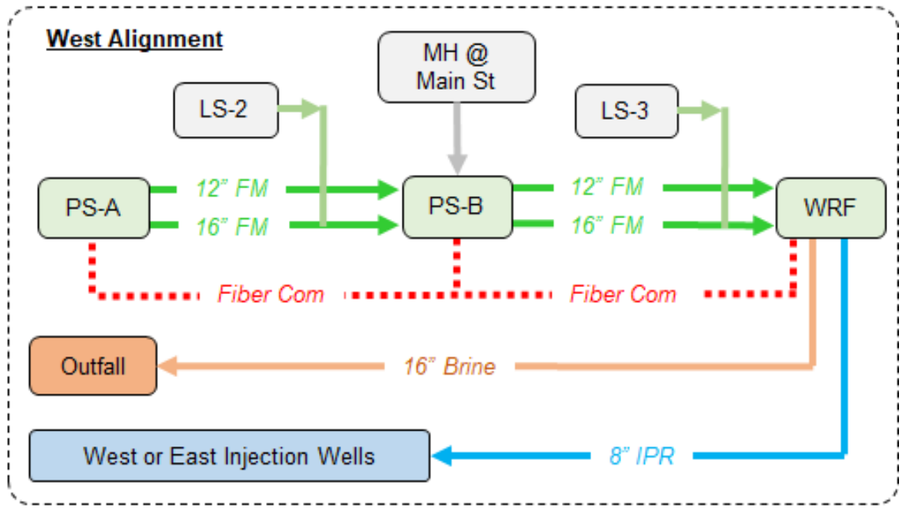
Staff recommends the WRFCAC review and provide comments to the presentation from WWE.

ATTACHMENTS

A – Alignment Alternatives
B – Alignment and Pump Station Alternative Selection Logic
C – Preferred Conveyance System

WRF Offsite Pipelines Preferred Alignment Alternative (West)





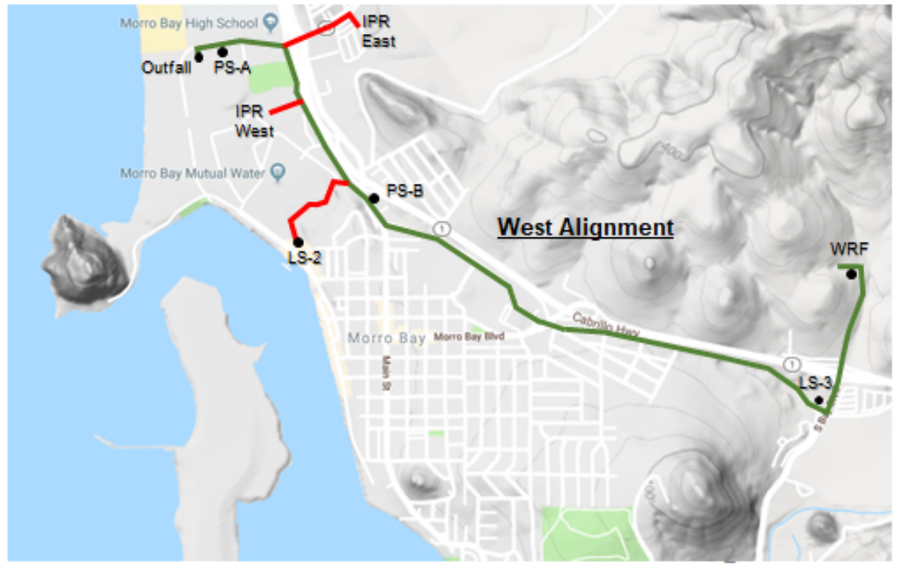
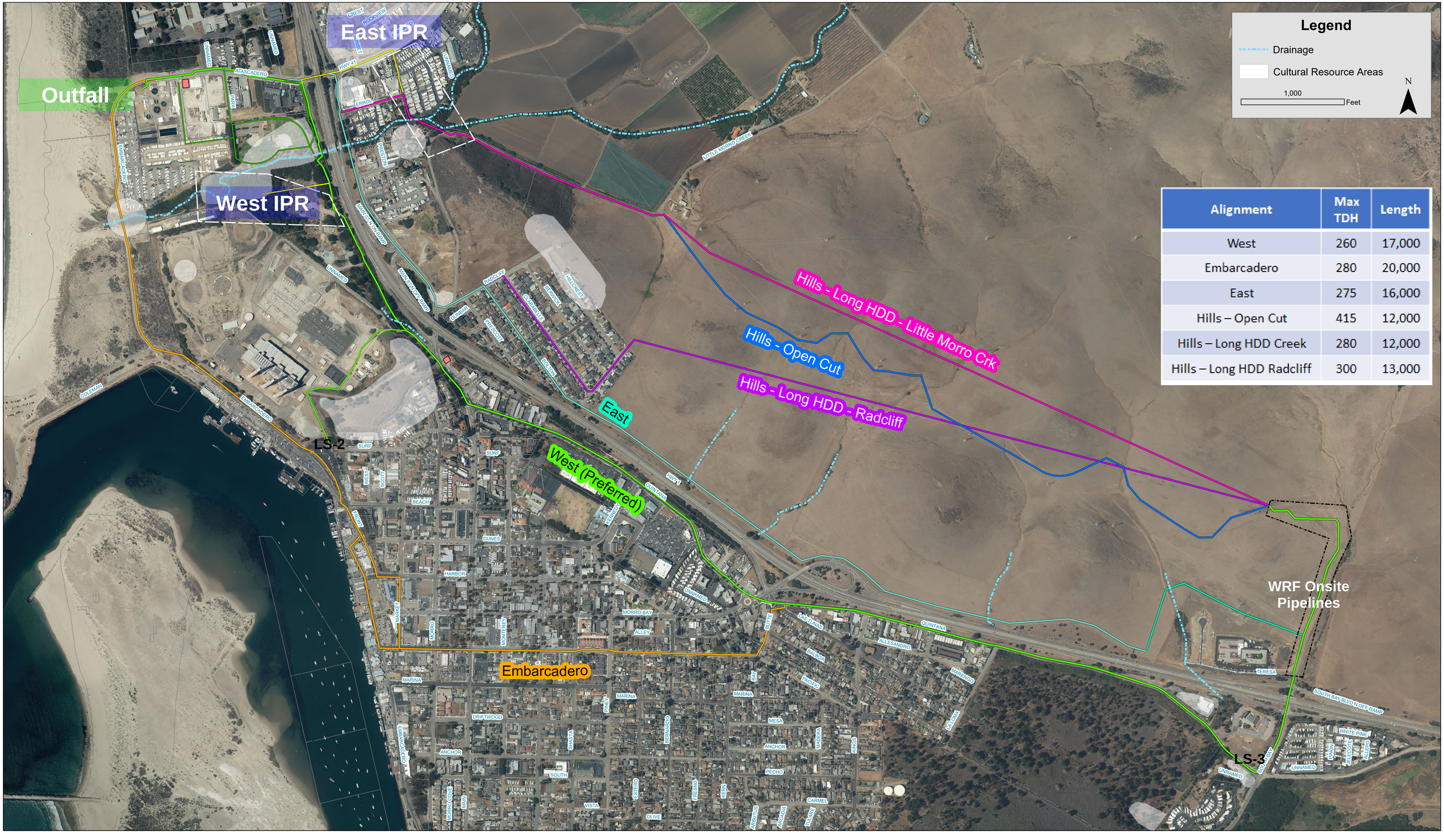


Figure 1-3: Preferred Alternative



Alignment	Max TDH	Length
West	260	17,000
Embarcadero	280	20,000
East	275	16,000
Hills – Open Cut	415	12,000
Hills – Long HDD Creek	280	12,000
Hills – Long HDD Radcliff	300	13,000

WRF Offsite Pipelines Working Alignment Alternatives