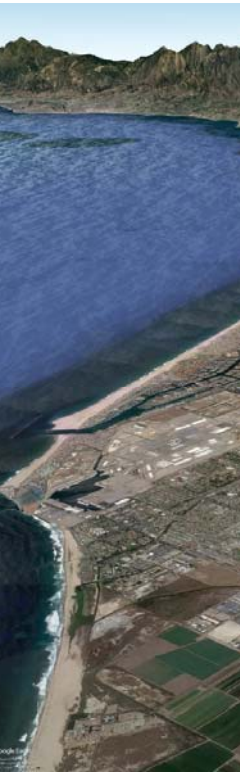
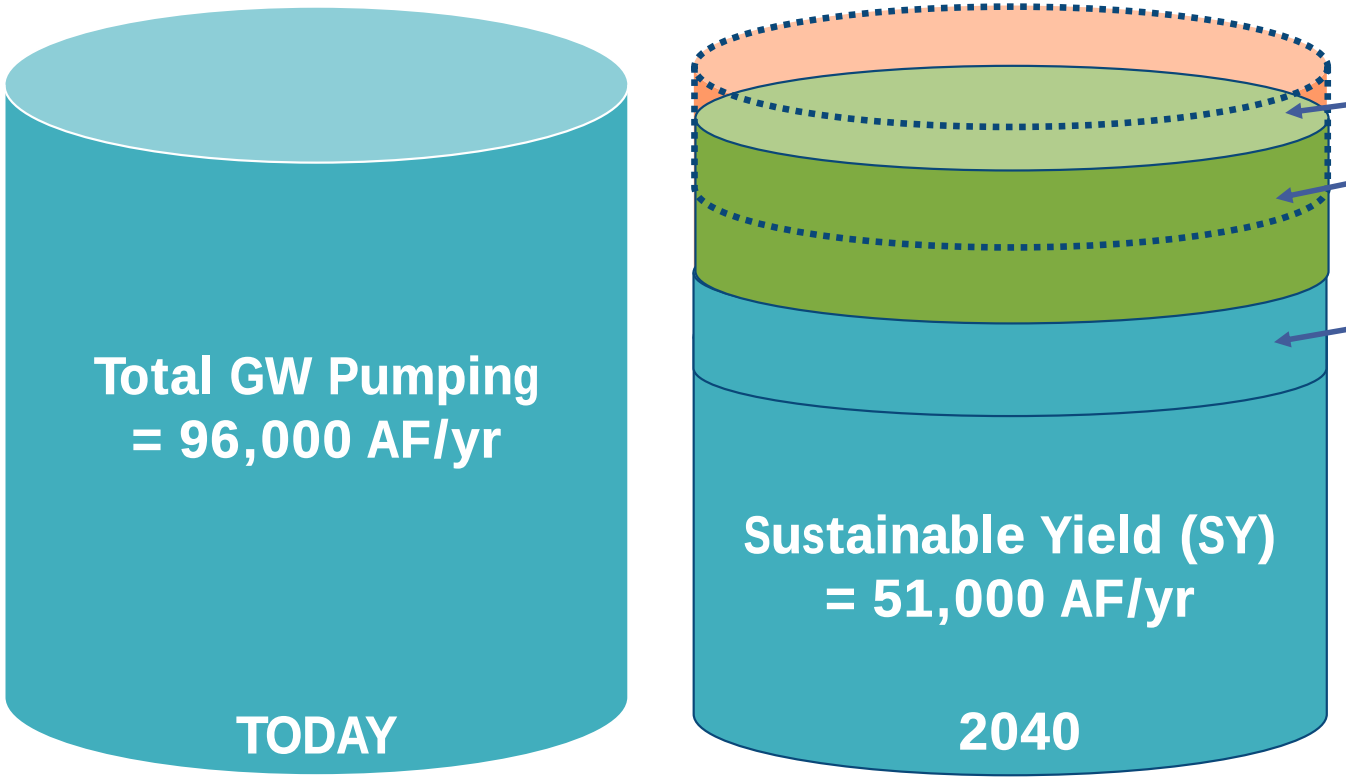
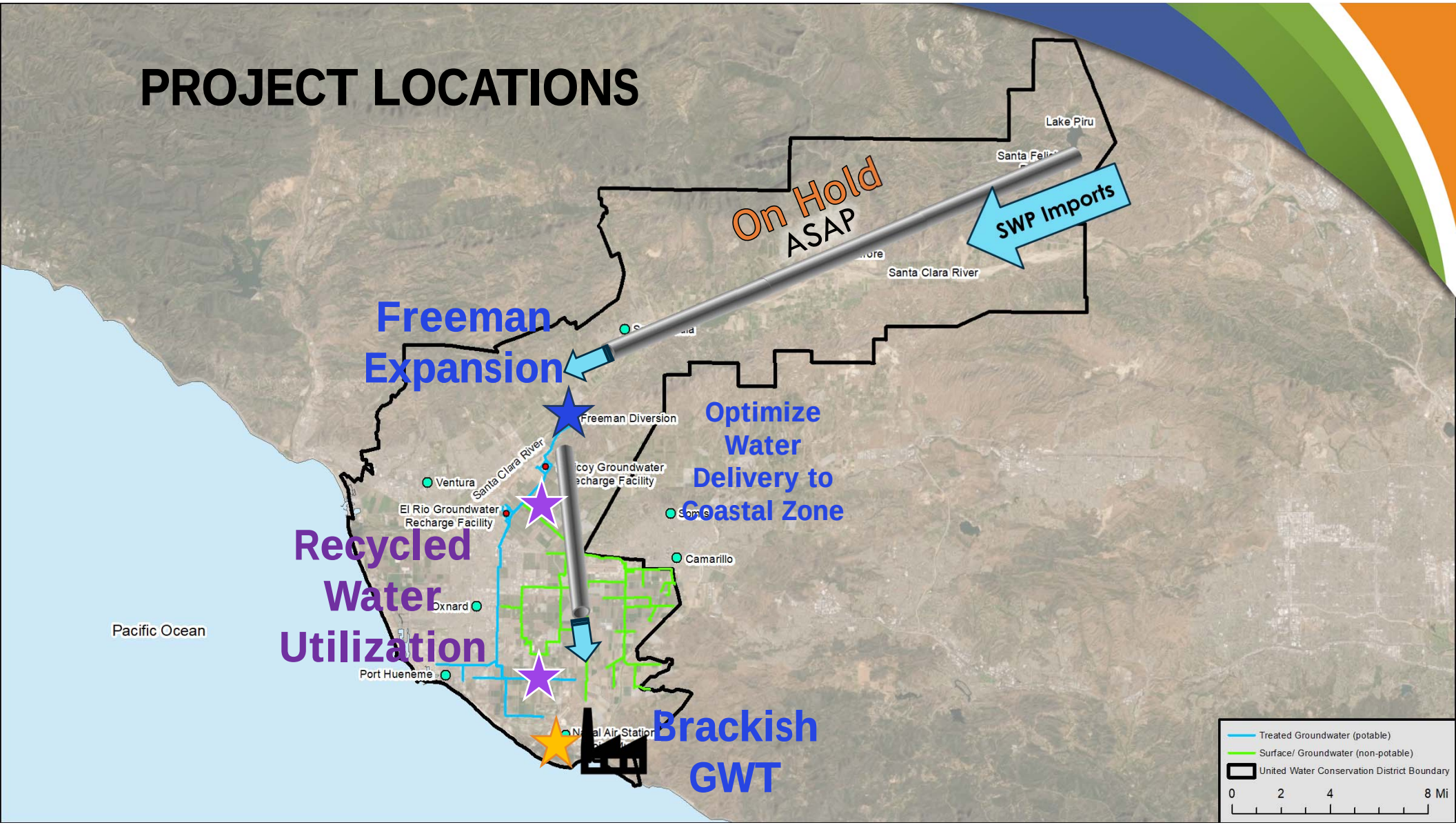
MARYAM BRAL, PH.D., P.E.
Chief Engineer

The Sustainability Challenge for Oxnard and Pleasant Valley Basins






PROJECT LOCATIONS
Lake Piru
On Hold
ASAP
SWP Imports
Santa Clara River
Freeman
Expansion
Freeman Diversion
Optimize
Water
Delivery to
Coastal Zone
Santa Clara River
Ventura
El Rio Groundwater
Recharge Facility
Camarillo
Recycled
Water
Utilization
Oxnard
Pacific Ocean
Port Hueneme
Brackish
GWT
Treated Groundwater (potable)
Surface/ Groundwater (non-potable)
United Water Conservation District Boundary
0
2
4
8 Mi

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COASTAL BRACKISH GROUNDWATER TREATMENT

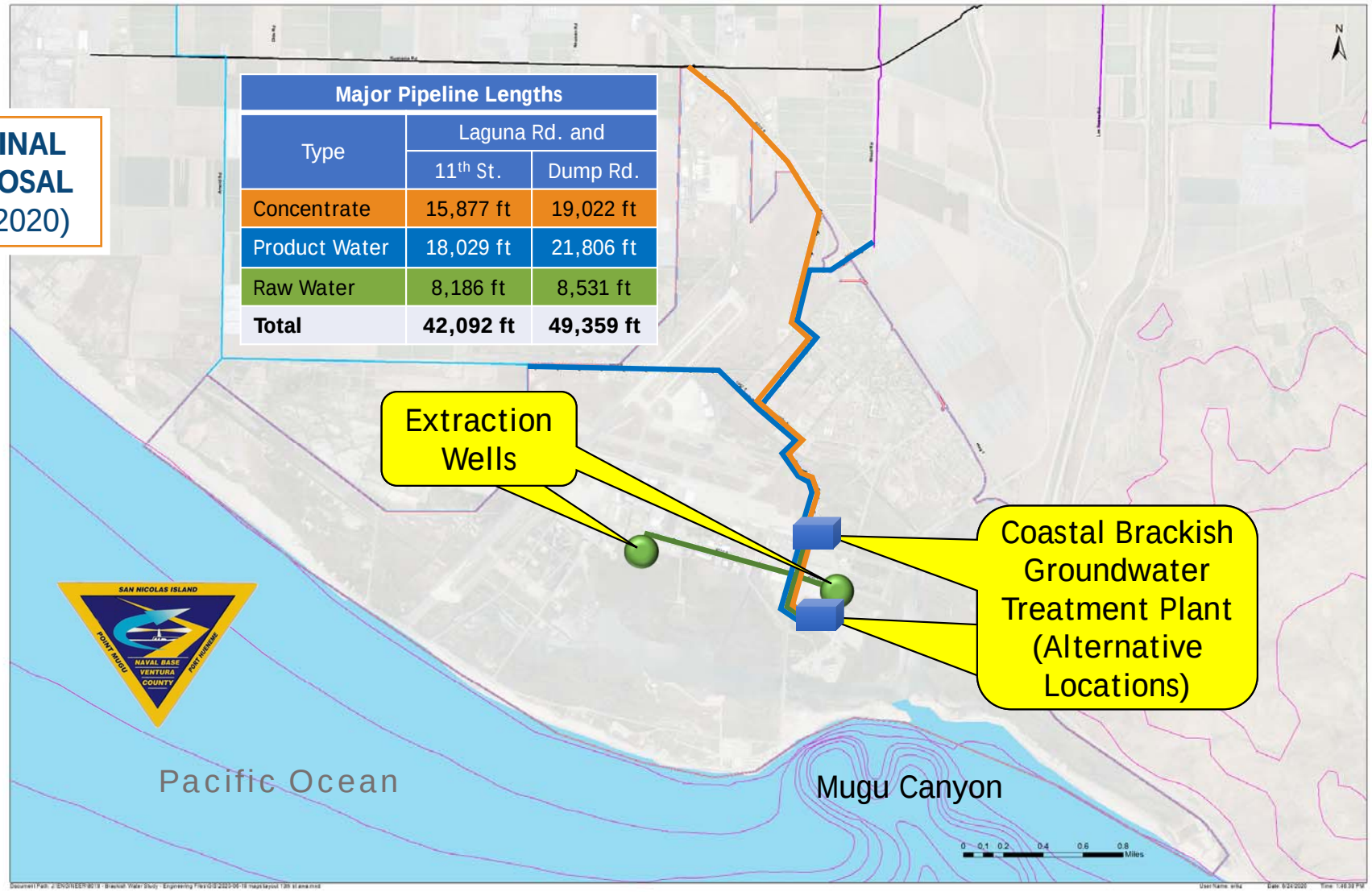
NOTABLE PROGRESS MADE

- Received DWR Prop 1 Planning Grant ($122,563) to evaluate extraction barrier wells to minimize seawater intrusion in the Oxnard Basin. Key tasks:
  - Refine groundwater model in coastal areas
  - Evaluate and identify potential locations and numbers of well sites, water distribution alternatives, impact on basin sustainability goals
- Partnering with the U.S. Navy
  - Extraction wells and treatment plant to be located at Naval Base Ventura County Point Mugu
  - Collaboration began in Nov 2019 and is ongoing

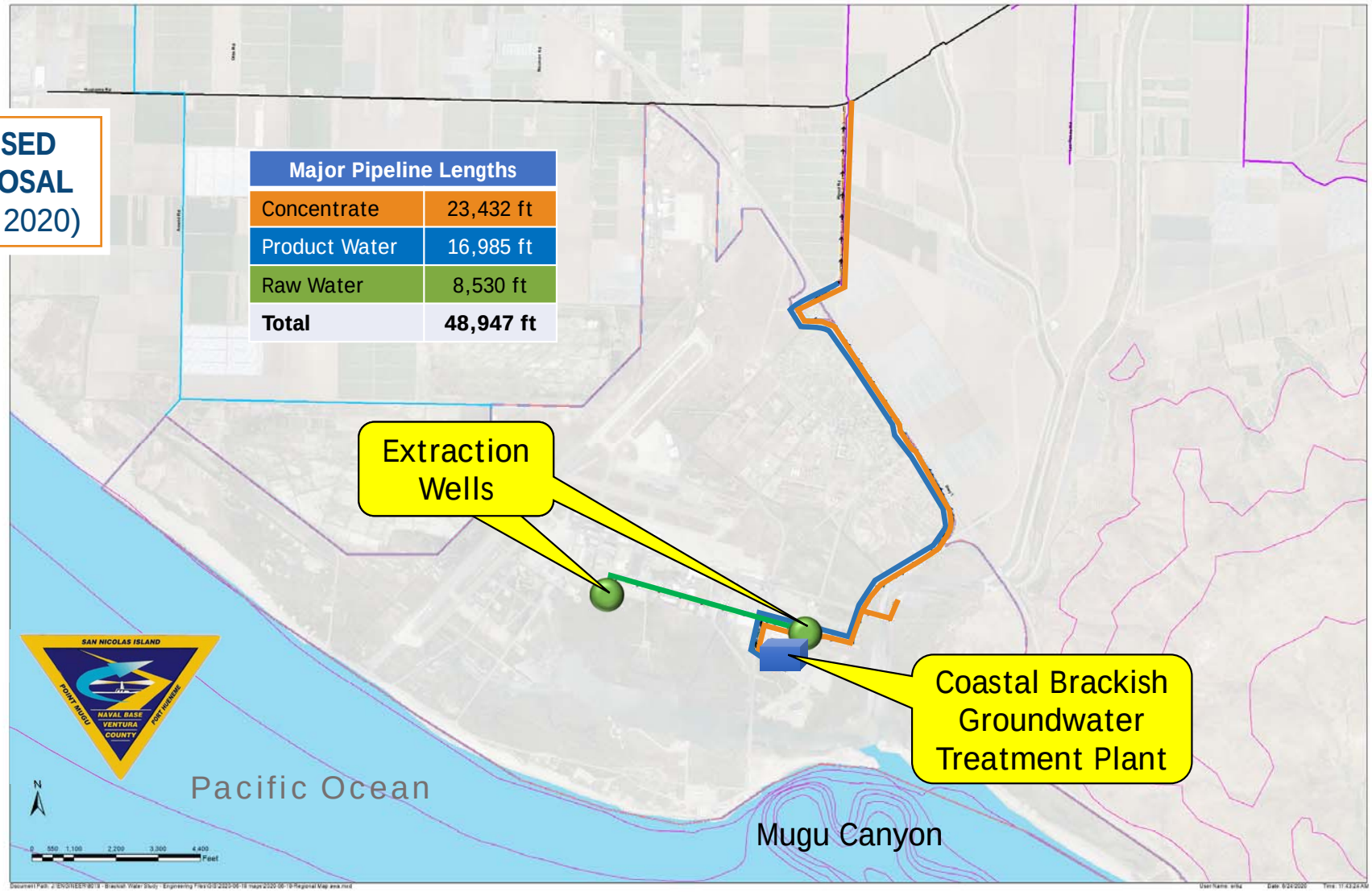
PROP 1
GOVERNOR GAVIN NEWSOM
WATER BOND 2014
RELIABILITY | RESTORATION | RESILIENCE

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

ORIGINAL PROPOSAL (FEB 2020)



REVISED PROPOSAL (JUNE 2020)



NEXT STEPS

- Submit Letter of Intent (LOI) to the Navy
  - Request for Outgrant Easement
- Start work on groundwater modeling (Planning Grant)
  - Form Technical Advisory Committee (TAC) – DDW, LA RWQCB, Navy and others
  - Engage in public outreach – FCGMA and other local organizations/representatives
- Start Environmental Impact Analysis and determine permitting requirements
- Continue with Conceptual Design
  - Comprehensive groundwater sampling using existing coastal monitoring wells
  - Determine product water quality
  - Identify pre-treatment/post-treatment requirements

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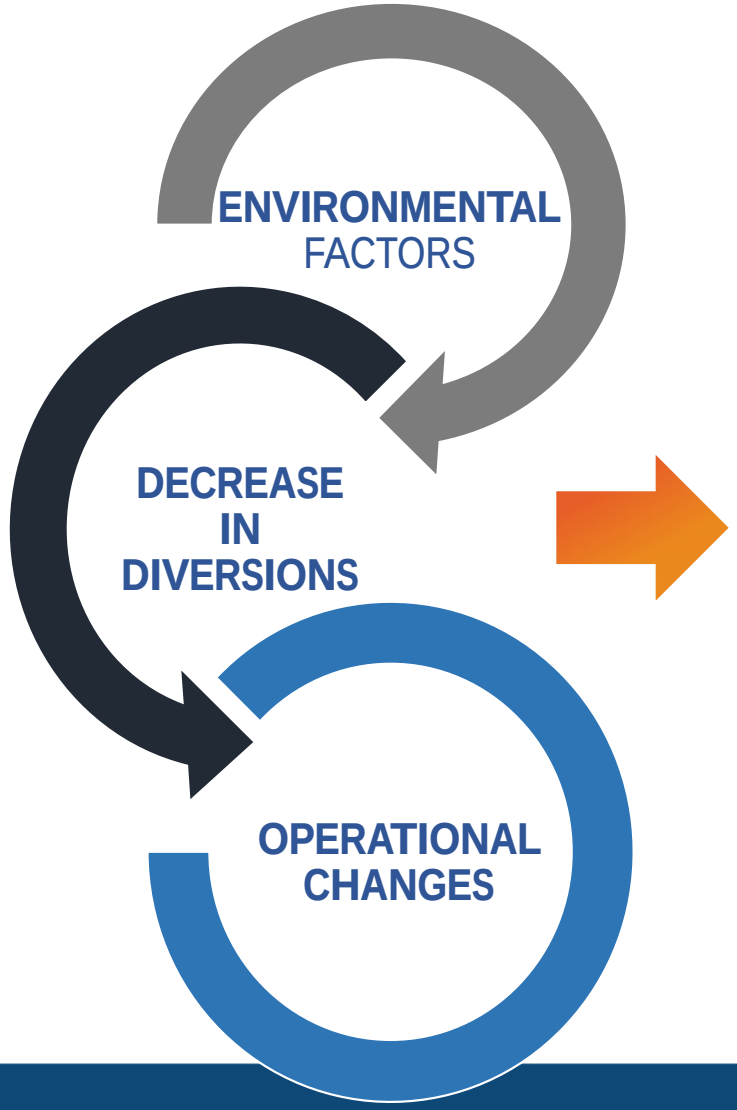
FREEMAN EXPANSION PROJECT



ENVIRONMENTAL FACTORS

- Divert water with turbidity levels higher than in the past
- Increase instantaneous diversion rate
- Plan for long-term storage and sediment removal
- Upgrade conveyance system, eliminate hydraulic “bottlenecks”

Example storm illustrating the benefits of the Freeman Expansion Project

INCREASING THE YIELD BY 6,000-9,000 AFY

PROJECT PROGRESS/ SCHEDULE

Grand Canal Headworks

- Finalized Engineering Design
- Purchased new gates and due for delivery in September 2020
- Soliciting bids for Construction in August 2020
- Construction in 2020

Three Barrel Culvert & Inverted Siphon

- Design contract executed in May 2020
- Topographic survey completed in June 2020
- Draft design alternative development completed in June 2020
- Final design alternatives to be delivered in July 2020
- Final design to be completed in 2020
- Tentative construction of one of the upgrades in 2020

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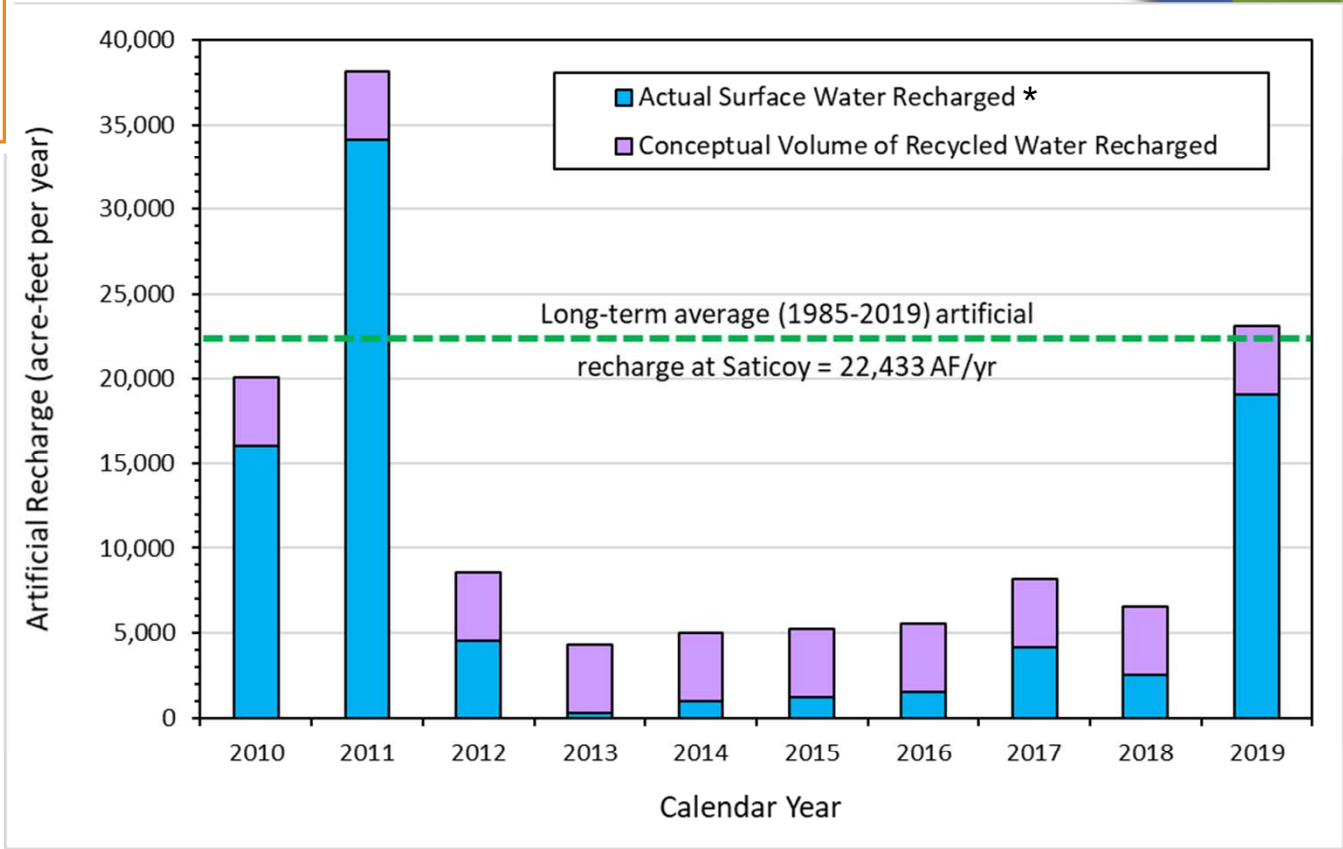
RECYCLED WATER UTILIZATION

GROUNDWATER REPLENISHMENT & REUSE PROJECT

Additional recycled water could be used for groundwater recharge as available



** Excludes El Rio Groundwater Recharge Basins*

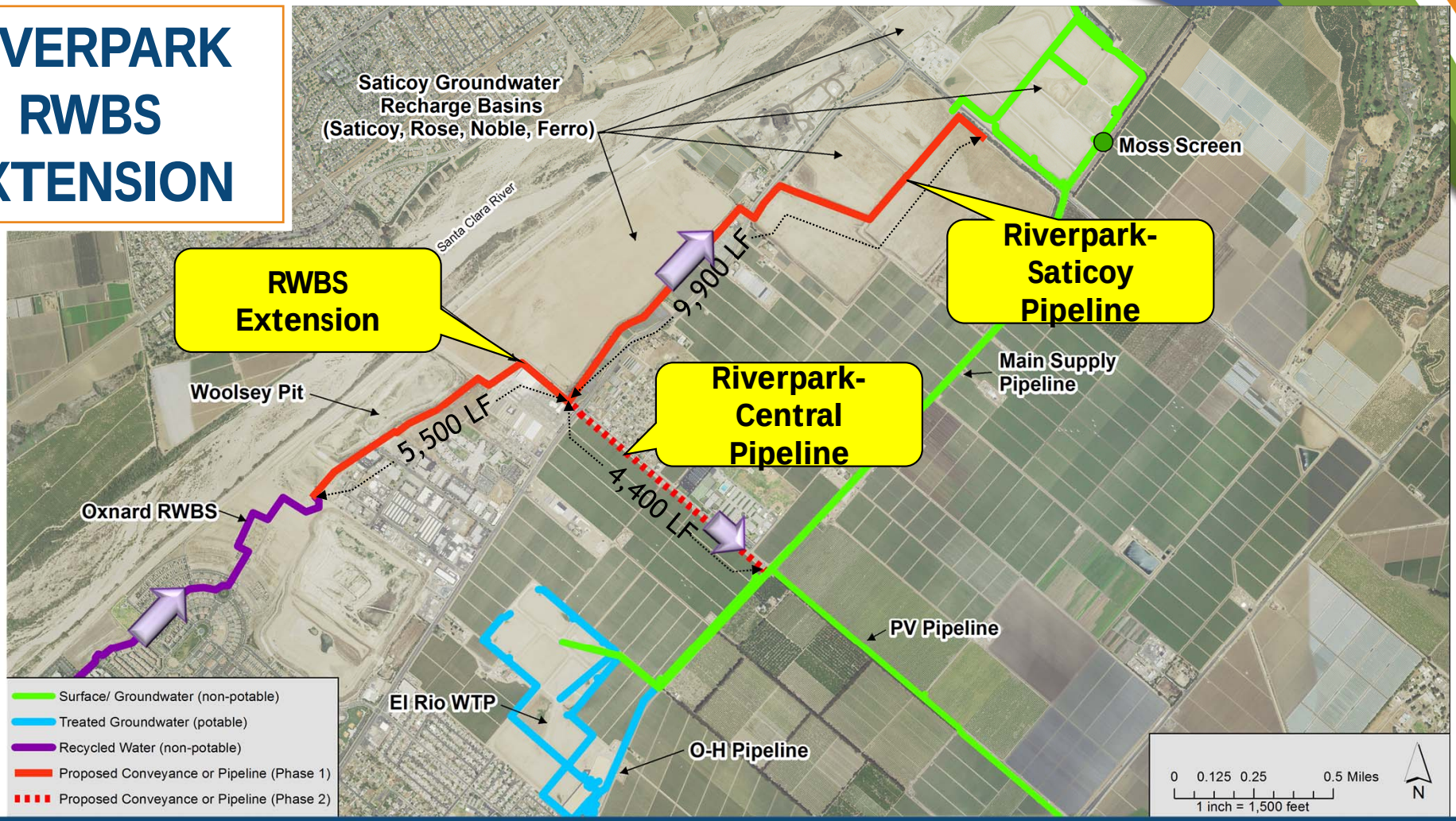
NEXT STEPS

- Stakeholder Meetings – City of Oxnard & UWCD *(April, May, July-upcoming)*
- Riverpark-Saticoy pipeline
  - Pipeline Hydraulics re-evaluation underway
  - Conceptual design plans underway
  - Conduct tracer study in Saticoy basins
  - Prepare Title 22 Engineering report
- Hueneme Road (Phase 2) pipeline
  - City plans to re-bid this year
  - City/UWCD to evaluate connection (Nauman Rd or Laguna Rd)

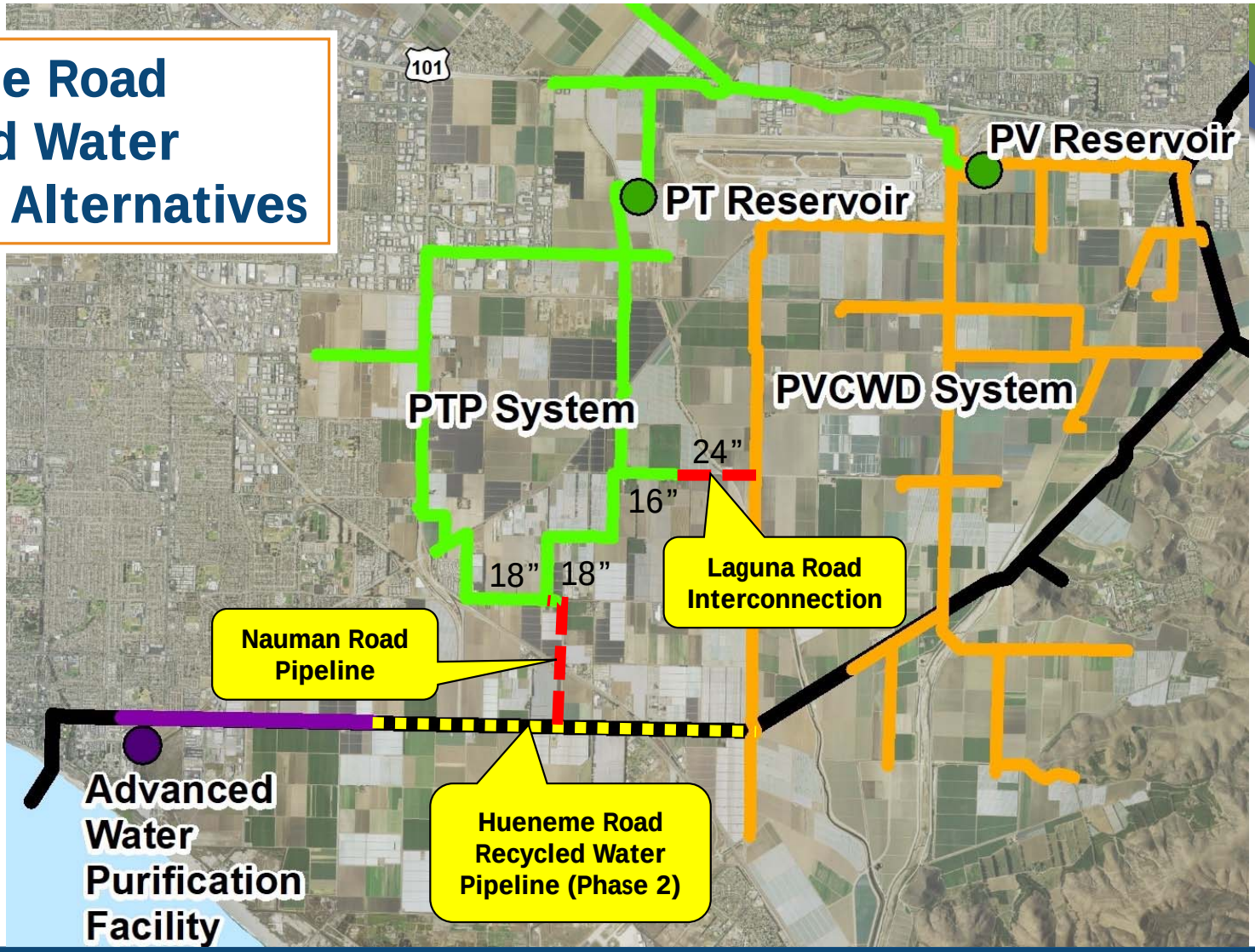
RECYCLED WATER OPPORTUNITIES

RECYCLED WATER PROGRAM

RIVERPARK RWBS EXTENSION

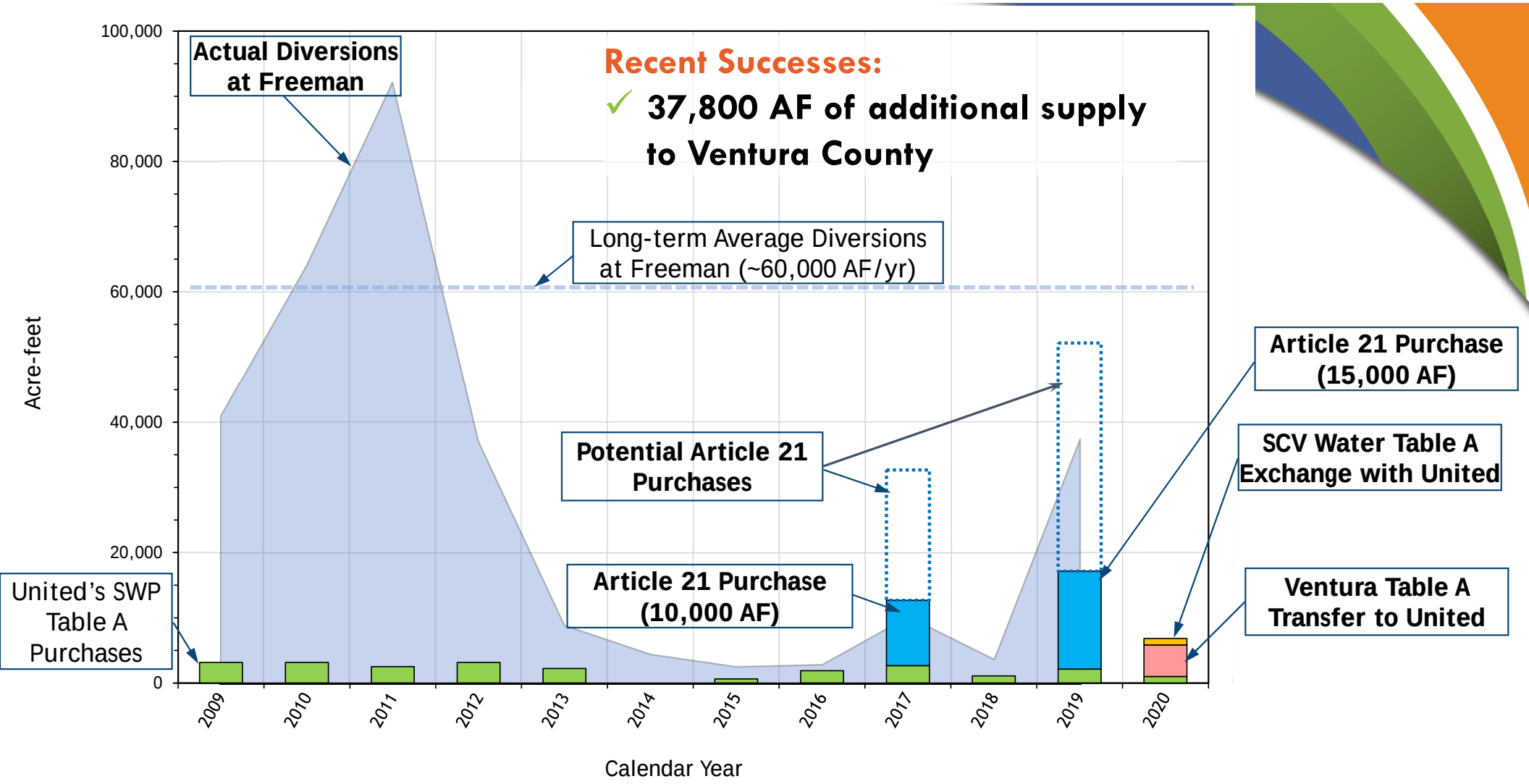


Hueneme Road Recycled Water Pipeline Alternatives



STATE WATER PROJECT

Allocations, Conjunctive Use & Optimization


Recent Successes:
✓ 37,800 AF of additional supply to Ventura County
Actual Diversions at Freeman
Long-term Average Diversions at Freeman (~60,000 AF/yr)
Potential Article 21 Purchases
Article 21 Purchase (10,000 AF)
Article 21 Purchase (15,000 AF)
SCV Water Table A Exchange with United
Ventura Table A Transfer to United
United's SWP Table A Purchases
100,000
80,000
60,000
40,000
20,000
0
Acre-feet
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Calendar Year

Sustainability	Resilience	Water Quality	GHGs	DACs	Economy-Farms
✓	✓		✓		✓
✓	✓	✓			✓
✓	✓	✓		✓	✓
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	
✓	✓	✓		✓	✓
✓	✓	✓	✓	✓	

34,000 to 50,000 AF of New Supplies and Enhanced Basin Yield

Questions

United Water
CONSERVATION DISTRICT