Prado Dam Preliminary Viability Assessment Scenarios and Limitations

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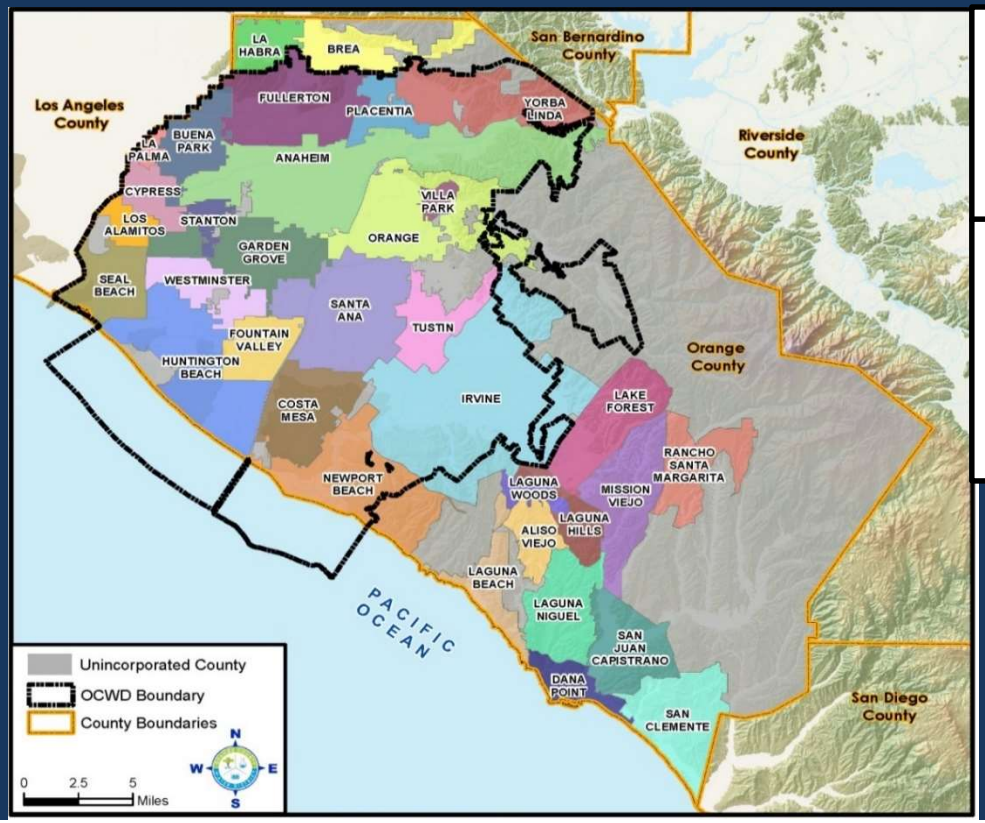
CW3E **FIRO Workshop (virtual)**

August 4, 2020

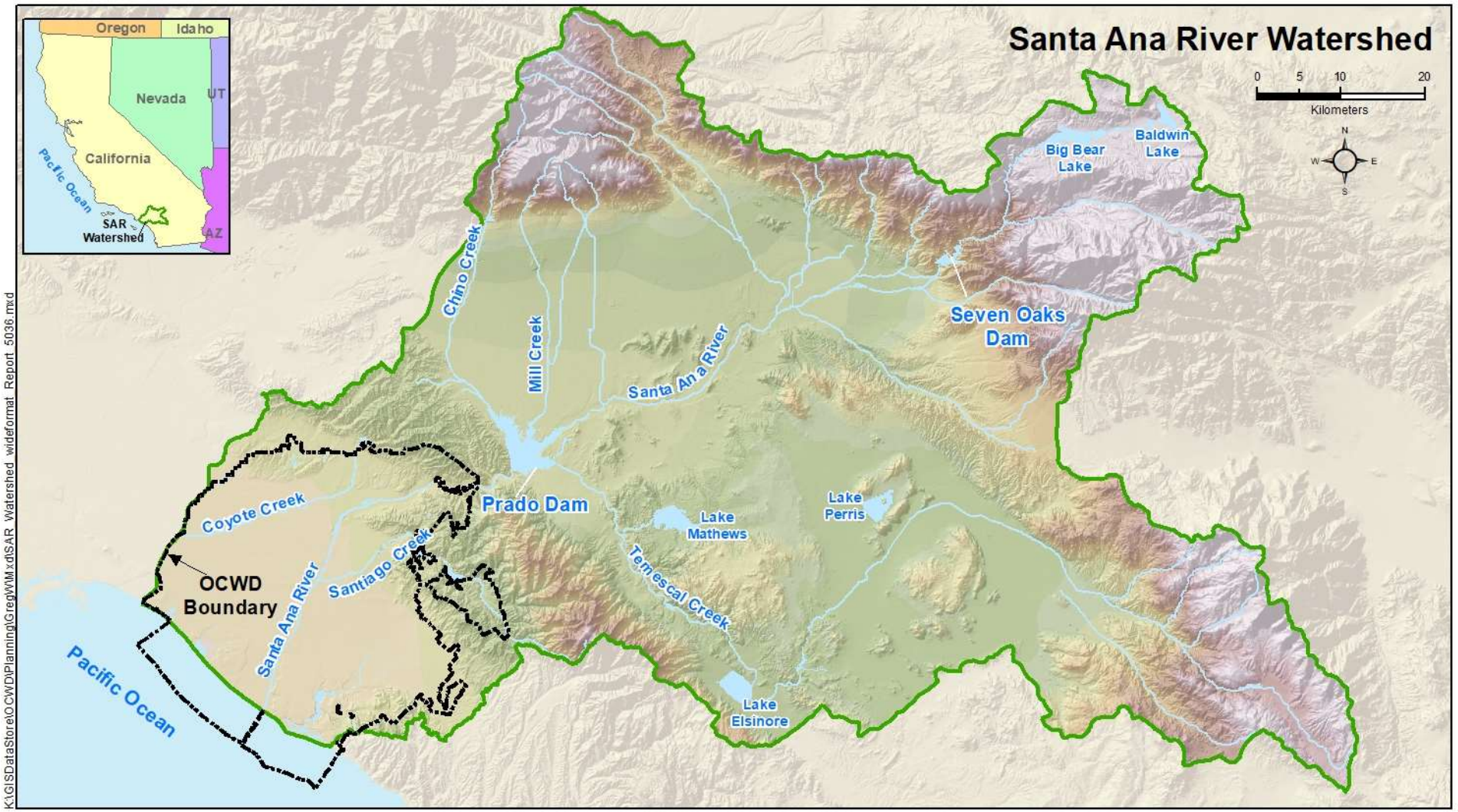
OCWD encompasses 370 square miles in North Orange County



Orange County groundwater basin provides water for 2.5 million people

Orange County Water District was formed by the State of CA in 1933 to manage the groundwater basin

Army Corps of Engineers & OCWD have long-standing Partnership in Prado Basin



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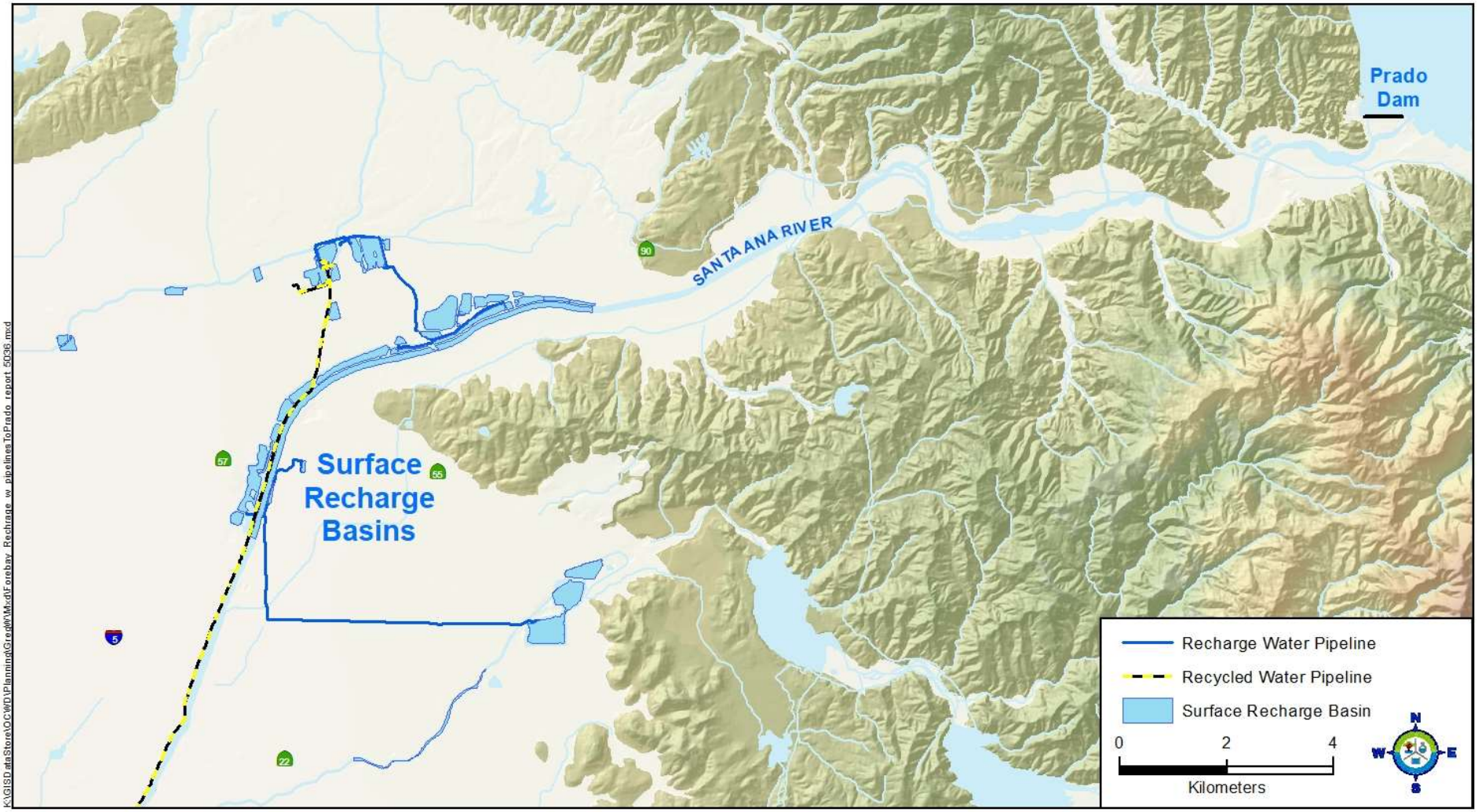
Prado Dam
SANTA ANA RIVER
90
Surface Recharge Basins
57
55
5
22
Recharge Water Pipeline
Recycled Water Pipeline
Surface Recharge Basin
0
2
4
Kilometers
N
W
E
S
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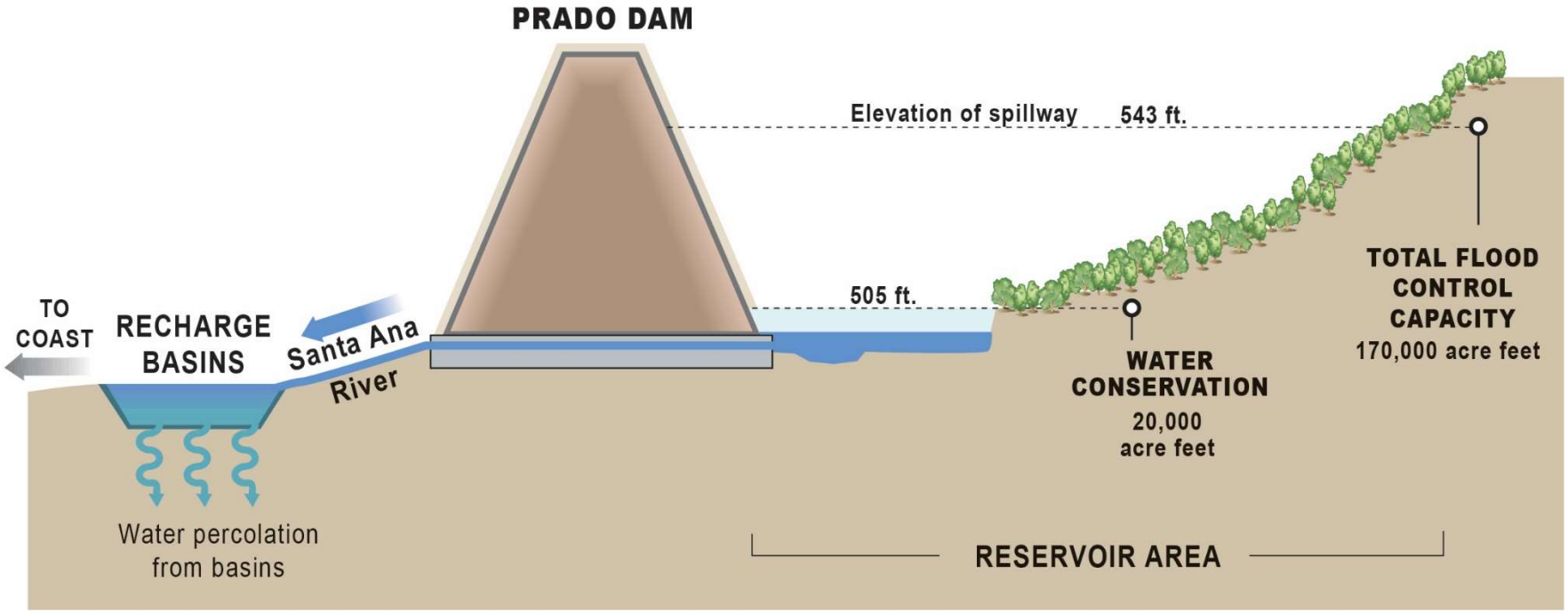
Key Features of Stormwater Capture at Prado Dam

- Dam is owned and operated by Army Corps
- Primary purpose: flood risk management
- Stormwater capture, aka ‘water conservation’ is secondary purpose
- No dedicated water supply pool
- Stormwater held temporarily in ‘buffer pool’ can be released by Corps at any time at their sole discretion

Stormwater Capture at Prado Dam

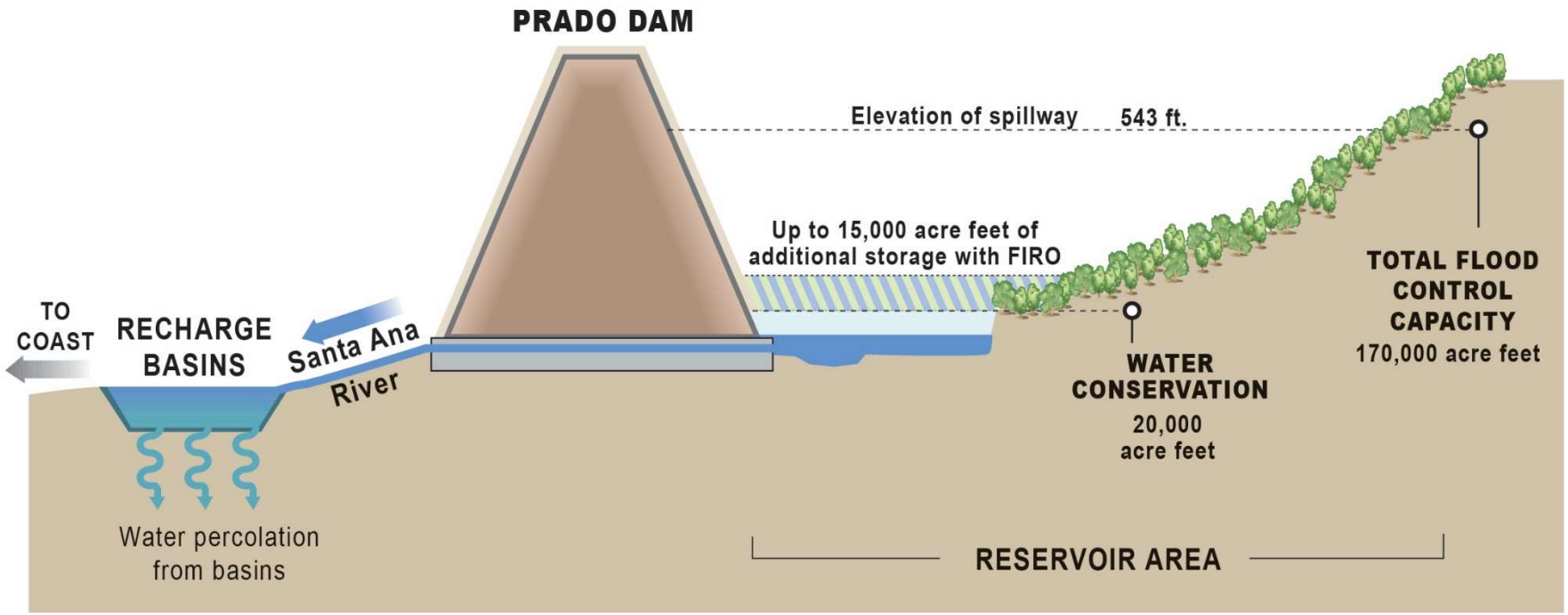


Water held below elevation 505 ft is released at rate OCWD can recharge it downstream

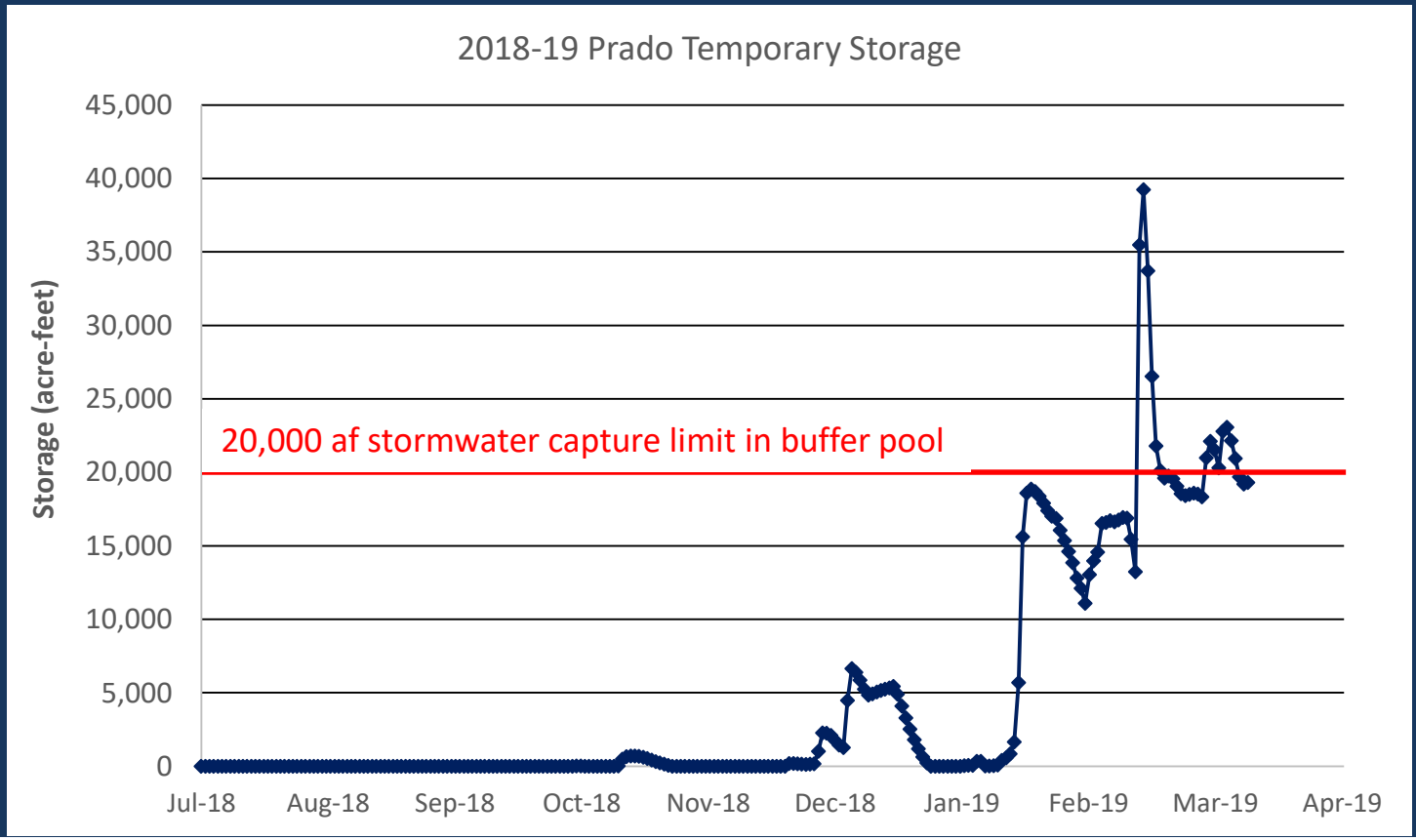
Forecast Informed Reservoir Operations at Prado Dam

- Preparing Preliminary Viability Assessment of FIRO
- Potential to expand storage volume available for stormwater capture without impacting flood risk management

Potential Increased Storage Space With Forecast Informed Reservoir Operations



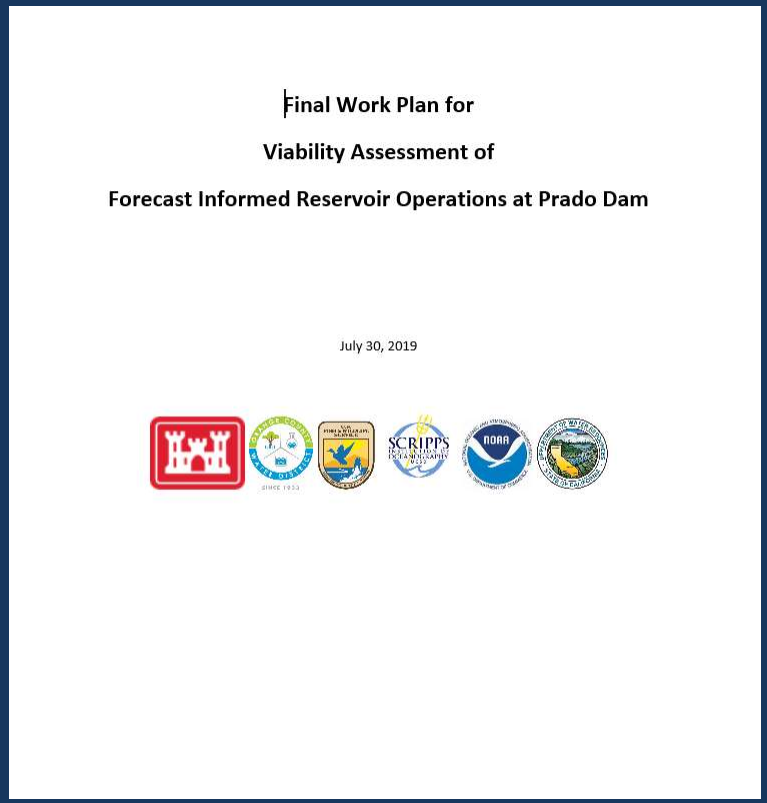
February 14, 2019 AR increased storage behind Prado Dam to nearly 40,000 af



Prado Dam FIRO Scoping Study

- FIRO Viability Assessment Work Plan (completed Aug. 2019)
- Preliminary technical studies, including
  - Explore precipitation forecast skill
  - Evaluate forecast lead time needed for FIRO at Prado Dam

Prado Dam FIRO Work Plan



Final Work Plan for

Viability Assessment of

Forecast Informed Reservoir Operations at Prado Dam

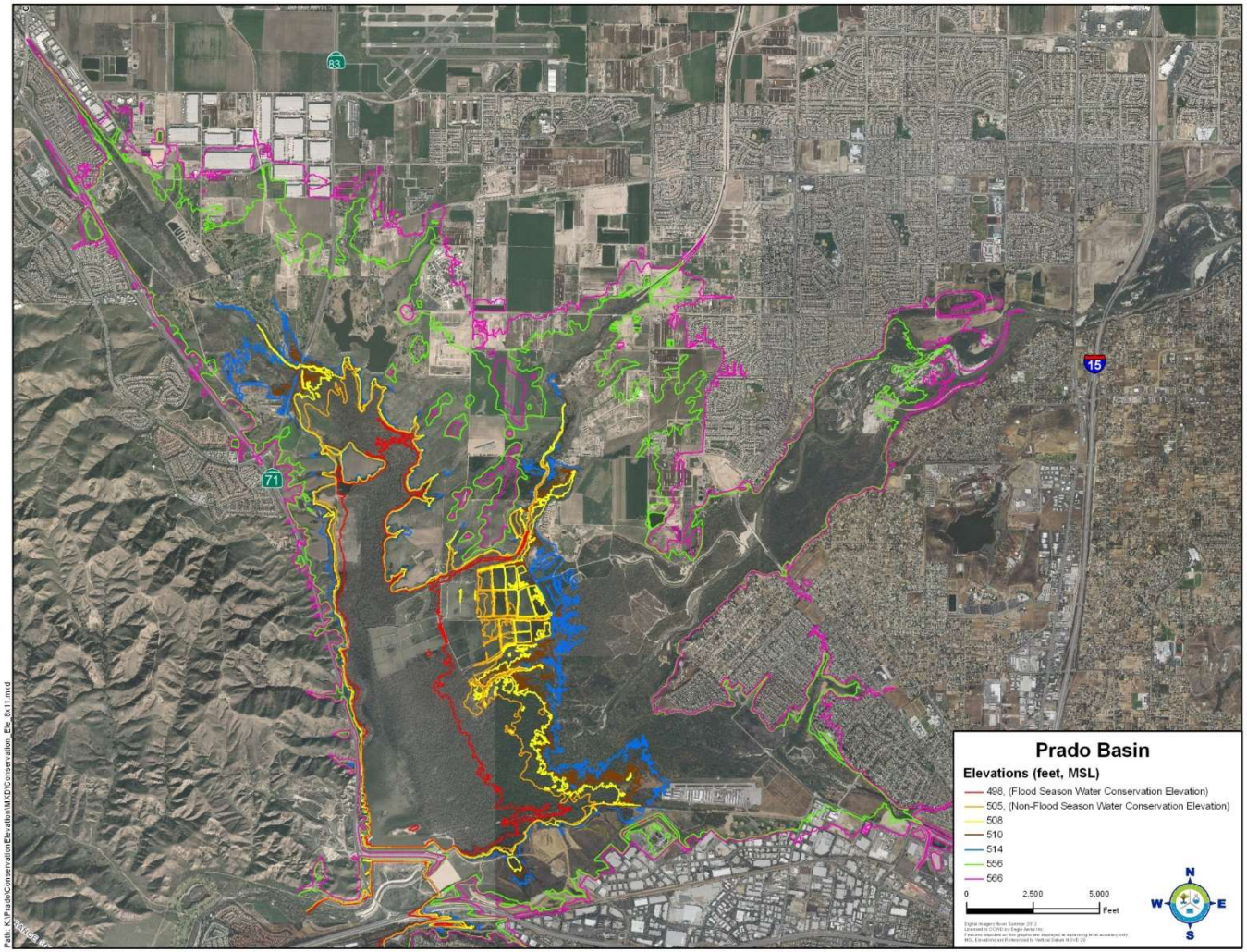
July 30, 2019

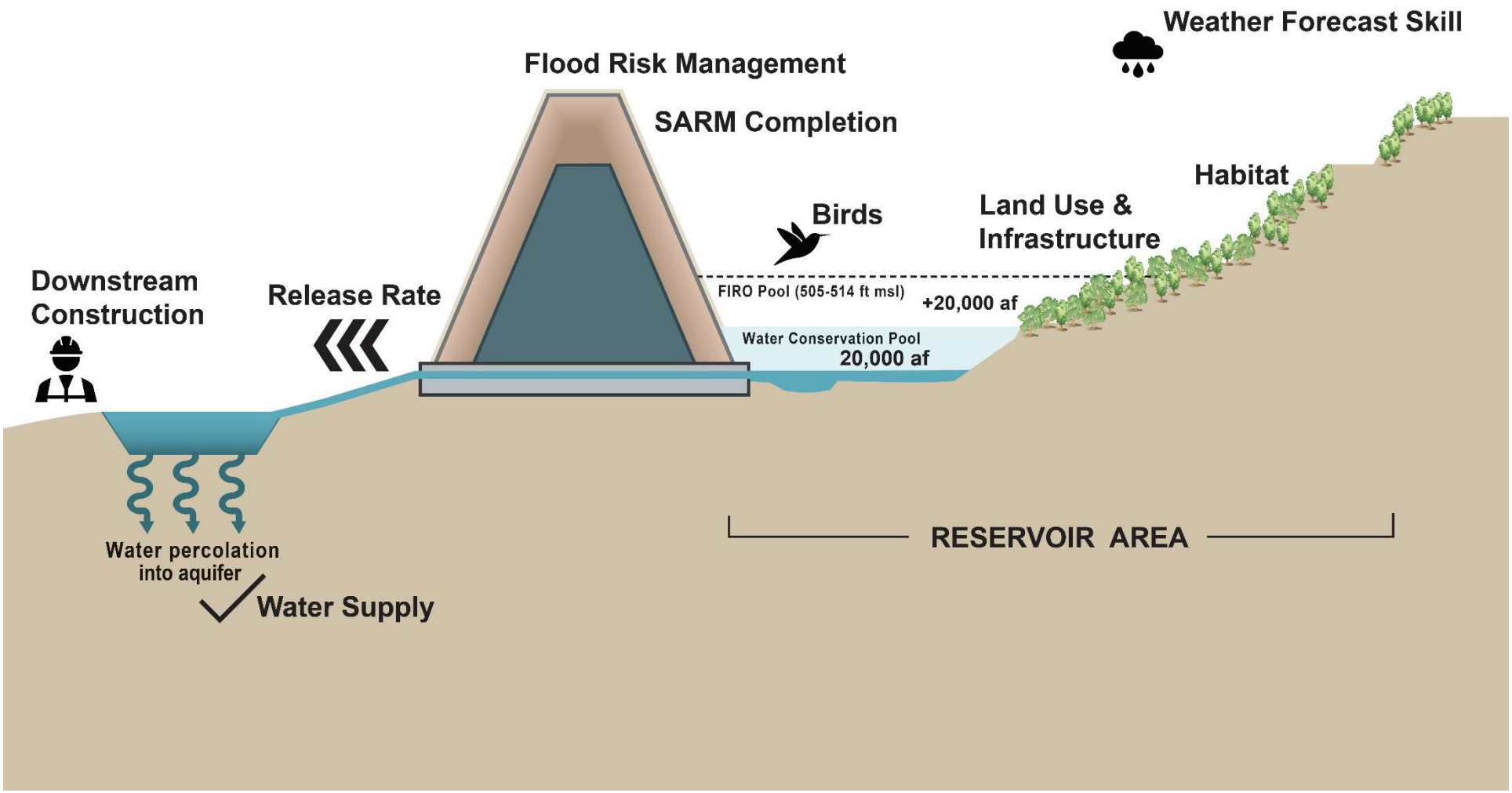
Key issues include:

- Forecast skill of large rain events
- Modeling river flow rate into Prado Reservoir
- Time to drain volume of increased stormwater captured
- Endangered species
- Land use within the reservoir area

Source: OCWD
2-21-2019

Construction in Channel Downstream of Dam

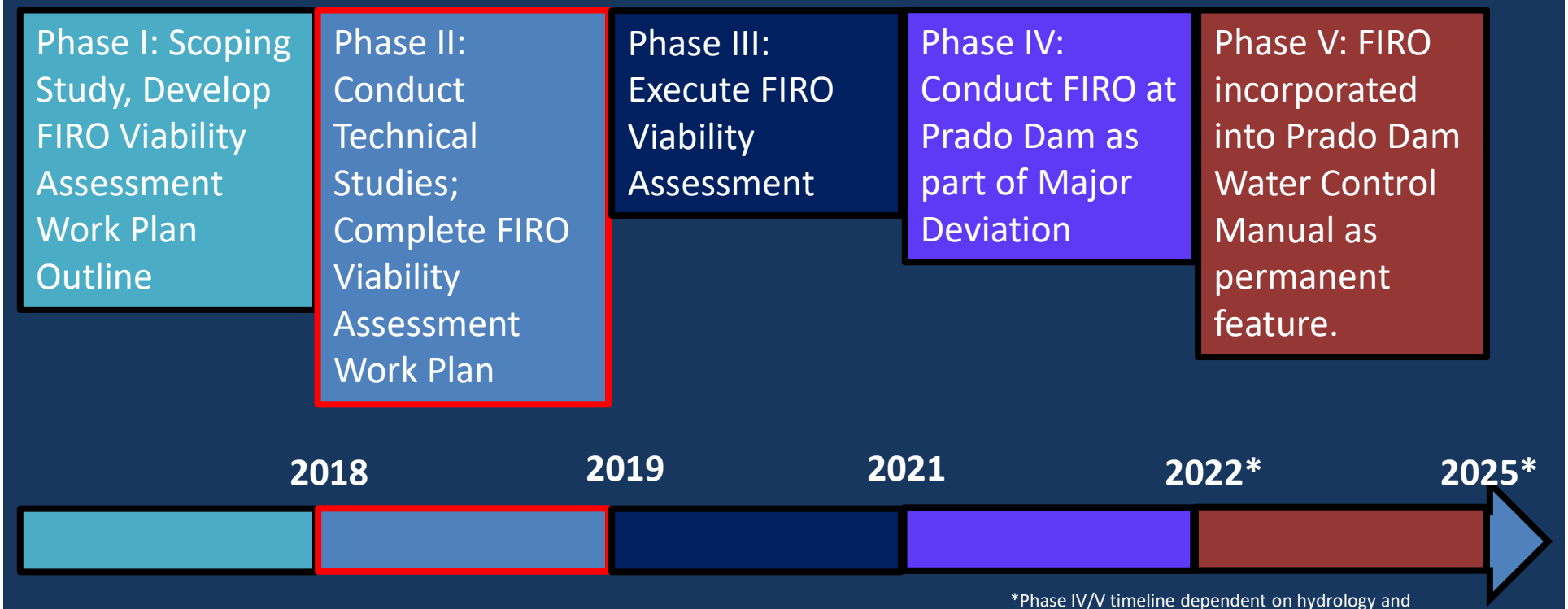

Prado Basin
Elevations (feet, MSL)
498, (Flood Season Water Conservation Elevation)
505, (Non-Flood Season Water Conservation Elevation)
508
510
514
556
566
0
2,500
5,000
Feet
N
W
E
S
83
71
15
Path: K:\Prado\ConservationElevation\MXD\Conservation_Ele_8x11.mxd


Weather Forecast Skill
Flood Risk Management
SARM Completion
Habitat
Birds
Land Use &
Infrastructure
Downstream
Construction
Release Rate
FIRO Pool (505-514 ft msl)
+20,000 af
Water Conservation Pool
20,000 af
RESERVOIR AREA
Water percolation
into aquifer
Water Supply

Prado FIRO Scenarios (short list)

- Increase temporary stormwater capture elevation to 508, 510, 514 ft
- Range of precipitation forecast skill
- Environmental factors

Prado Dam FIRO Timeline



*Phase IV/V timeline dependent on hydrology and completion of the Santa Ana River Mainstem Project.