Water Independence Now – The Road to Locally Sustainable Water Resources in a Growing Urban Region

GRAC Conference & Meeting
September 29, 2016

WRD Service Area in Southern LA County

43 Cities

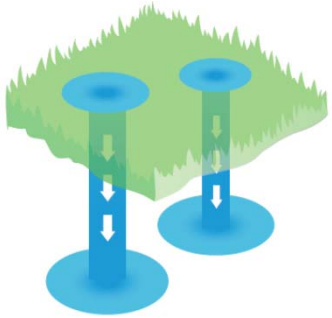
> 4 million people

370 active production wells

Groundwater is nearly 50% of water supply

Managed Aquifer Recharge

Since WRD Formation (1959):



- 7 Million AF through spreading grounds
- 1.6 million AF through seawater barrier injection wells

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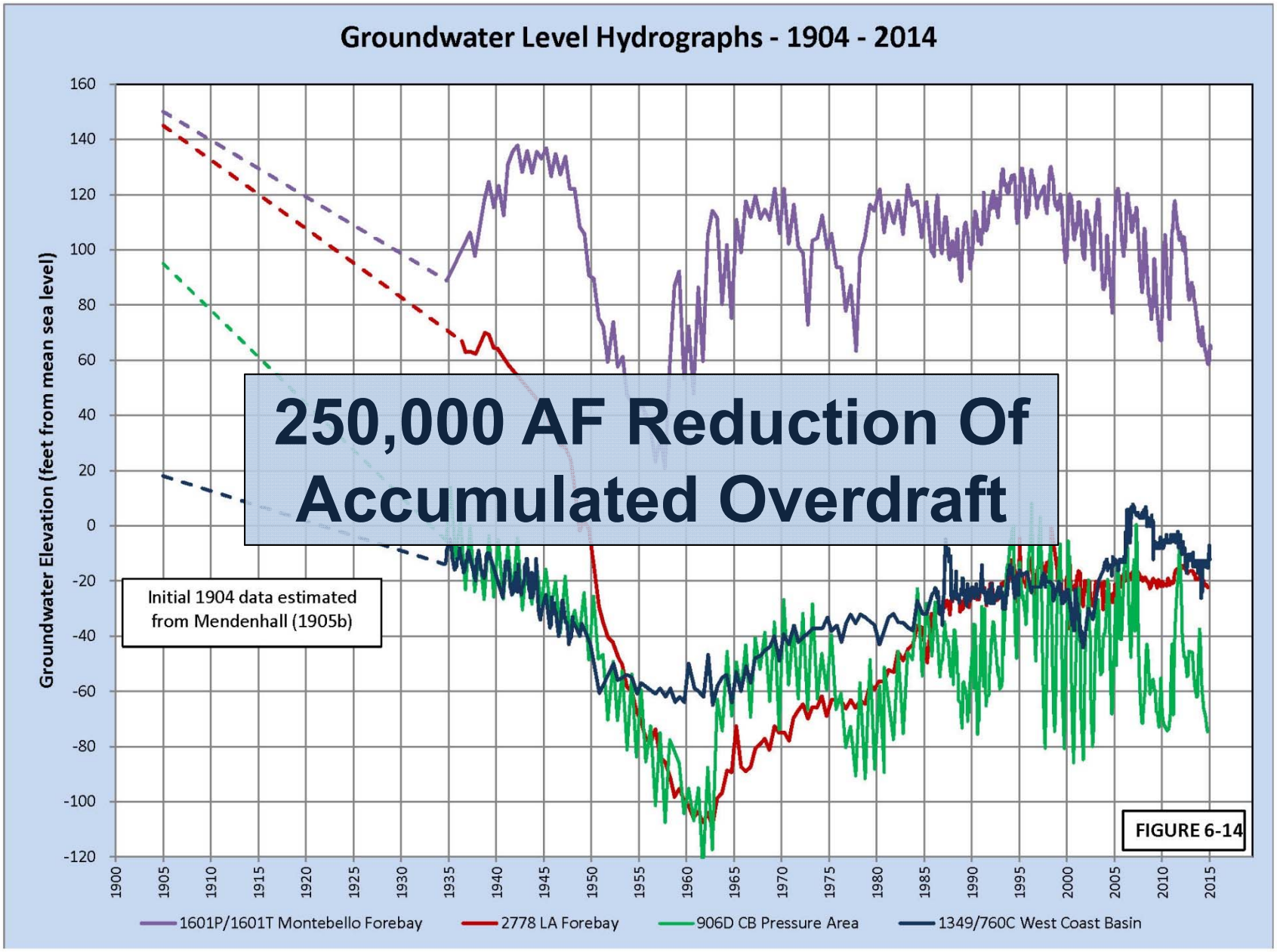
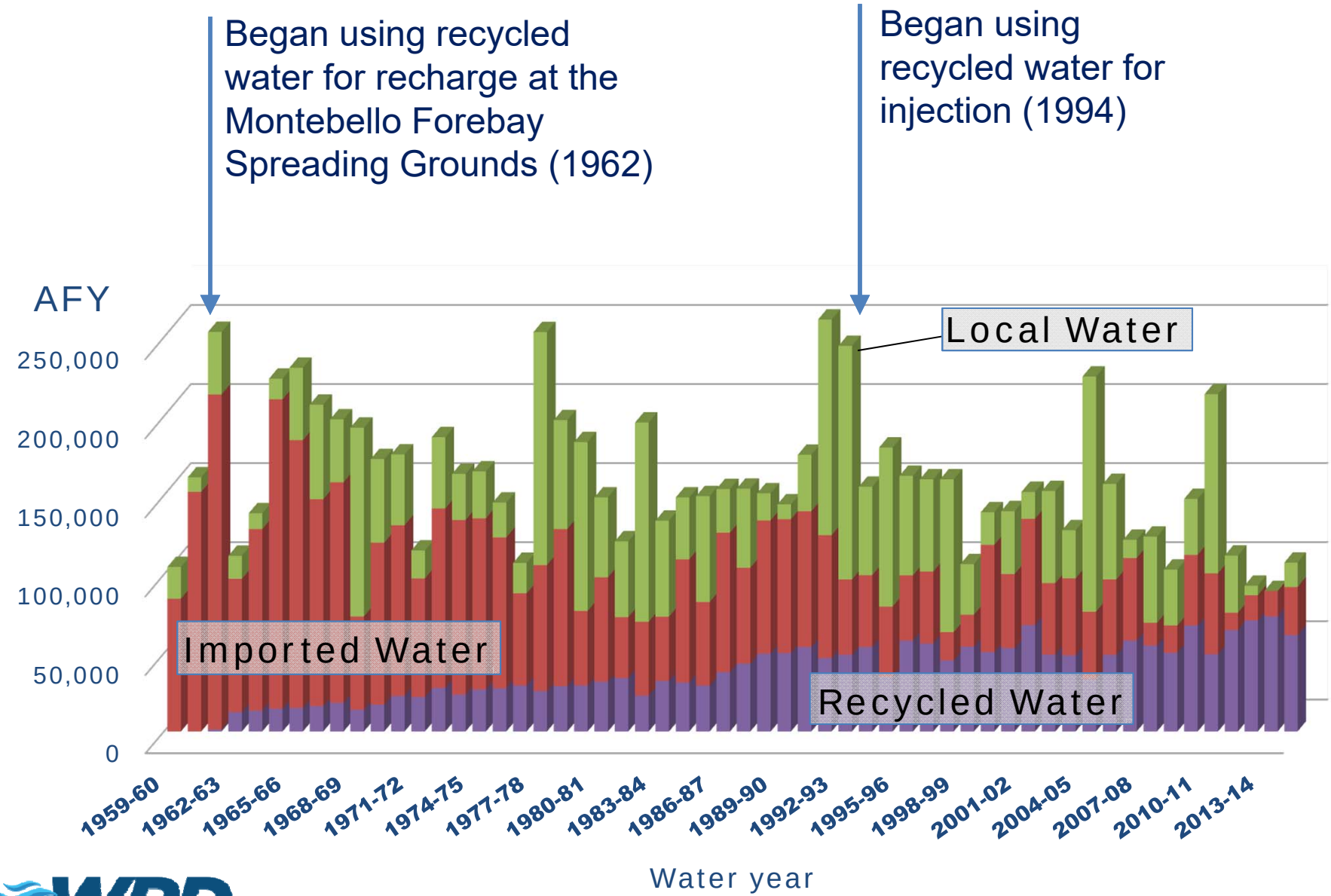
Managed Aquifer Recharge



Replenishment Water Sources



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WIN

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- **Collection of projects to eliminate remaining demand for imported water**
- **Projects to:**
  - Capture and conserve additional stormwater
  - Increase use of recycled water for groundwater replenishment
- **A key to developing independence from imported water is the development of local recycled water sources**

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LEO J. VANDER LANS ADVANCED WATER TREATMENT FACILITY

Leo J. Vander Lans Advanced Water Treatment Facility in Long Beach

The Leo J. Vander Lans Advanced Water Treatment Facility meets 100% of the water demand at the Alamitos Gap Barrier with local recycled water, thereby protecting the Central Basin from seawater intrusion.

WHITTIER NARROWS CONSERVATION POOL

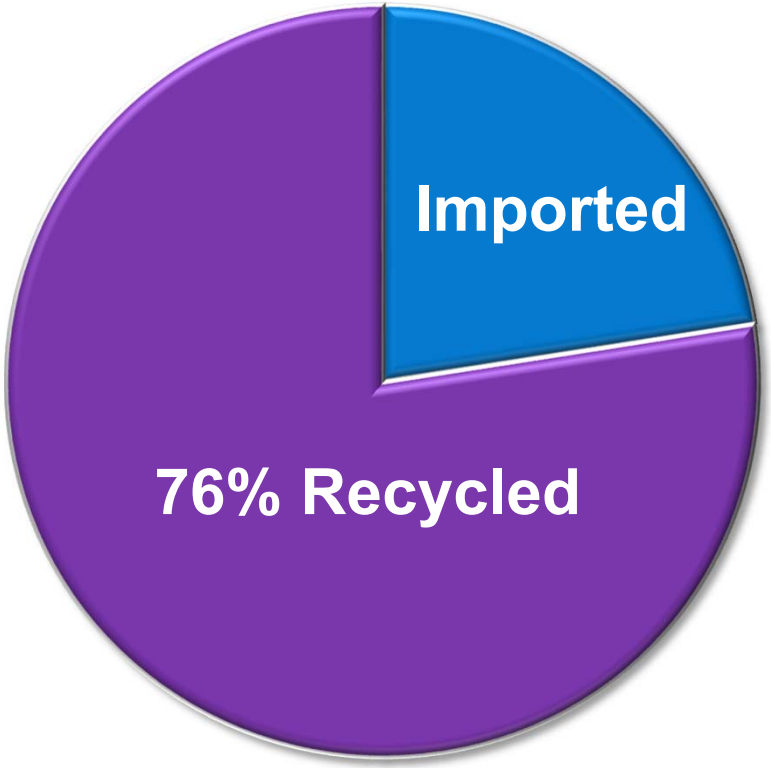
Whittier Narrows Conservation Pool

The Whittier Narrows Conservation Pool allows for the storage of water behind the Whittier Narrows Dam to capture and reuse stormwater runoff that would otherwise flow to the ocean. Planned enhancements will allow an additional 1,100 acre-feet per year of stormwater to be collected and used.

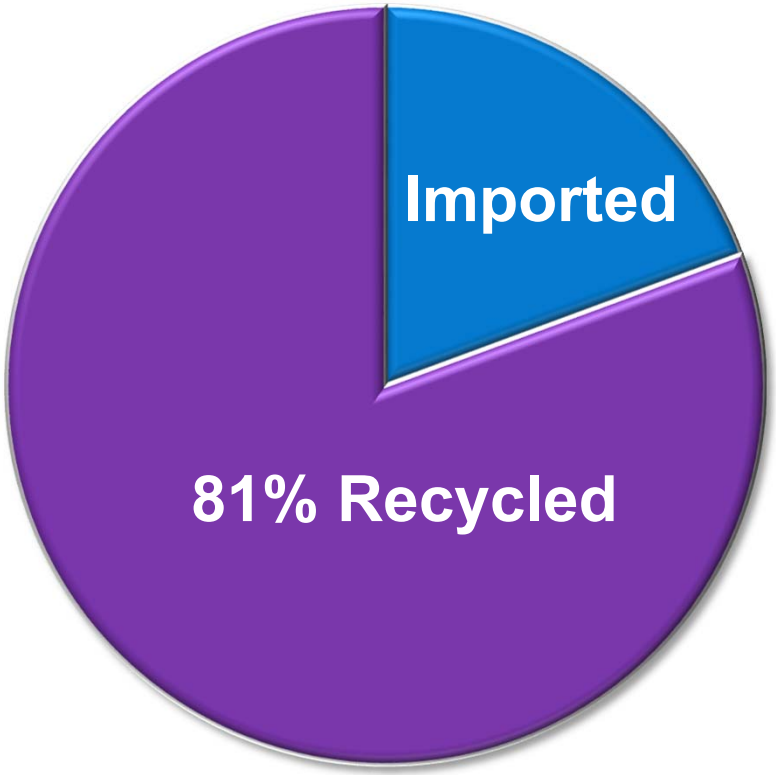
Key WIN Projects

Replenishment Water Demand - WIN

- Recycled water will make up 78% of total replenishment water demand for 2016/2017



Spreading Grounds



Seawater Barrier Injection

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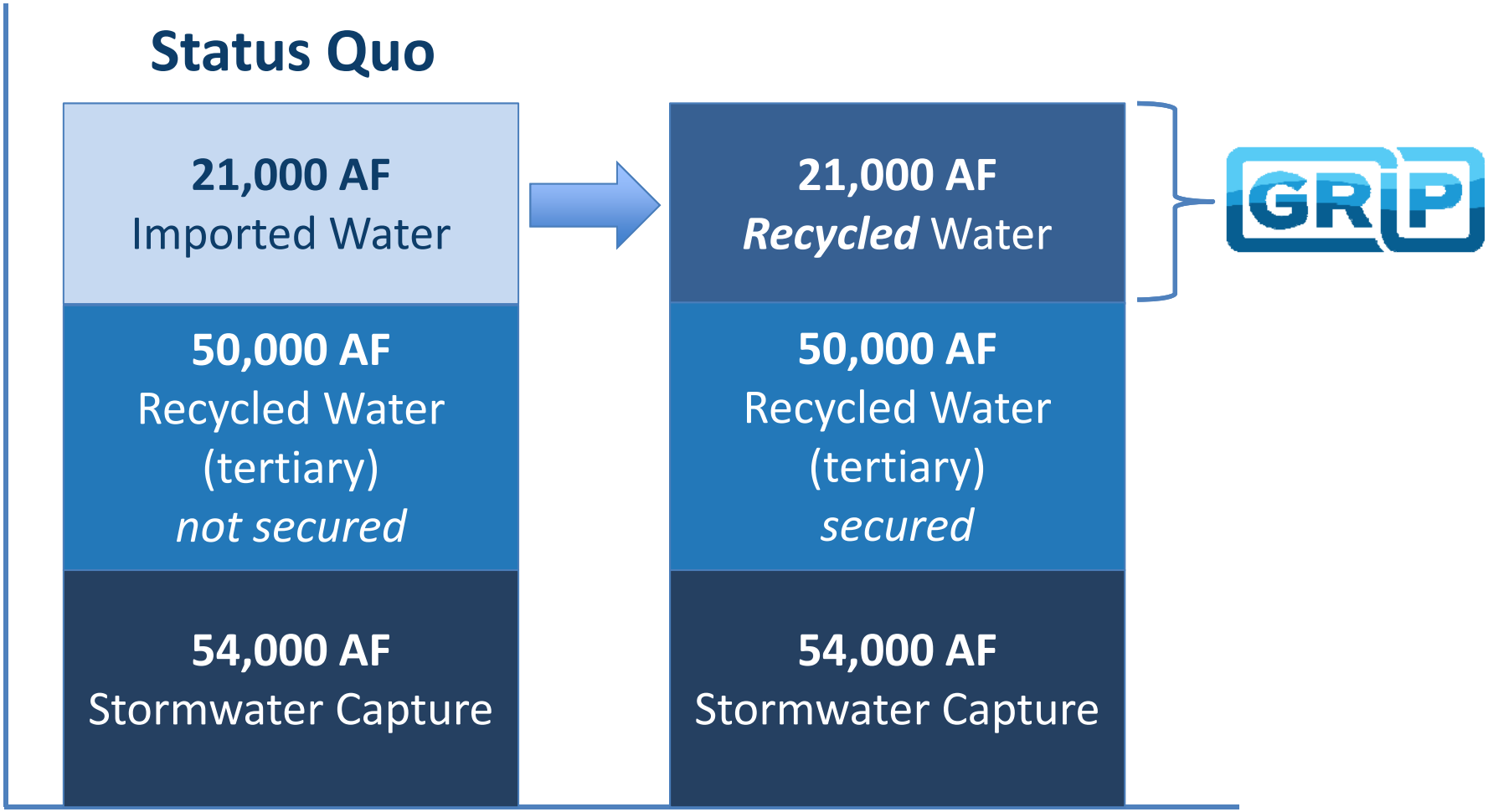
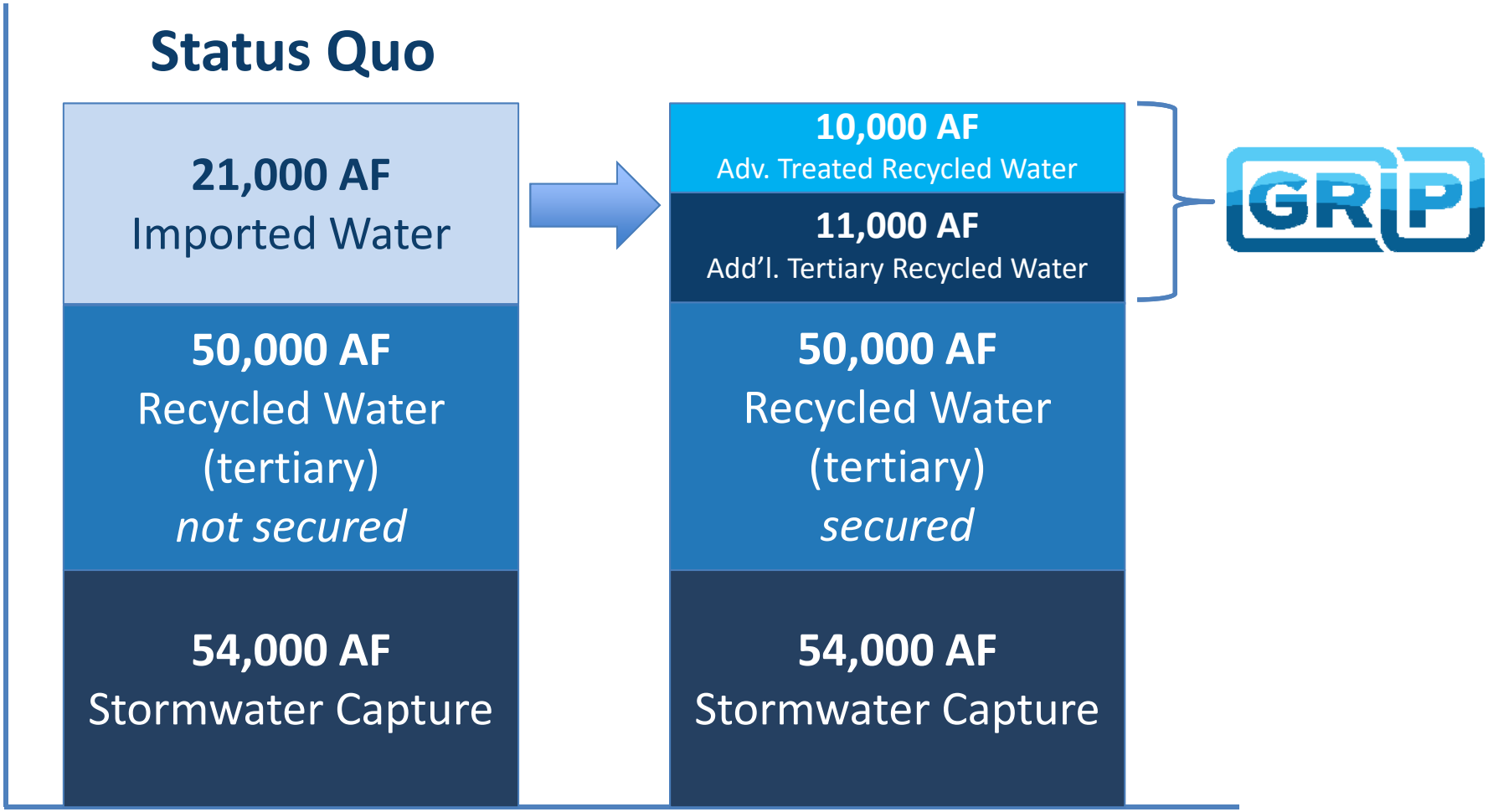
Groundwater Reliability Improvement Project
Advanced Water Treatment Facility

What is GRIP?


Status Quo
21,000 AF
Imported Water
50,000 AF
Recycled Water
(tertiary)
not secured
54,000 AF
Stormwater Capture
21,000 AF
Recycled Water
50,000 AF
Recycled Water
(tertiary)
secured
54,000 AF
Stormwater Capture
GRIP

What is GRIP?



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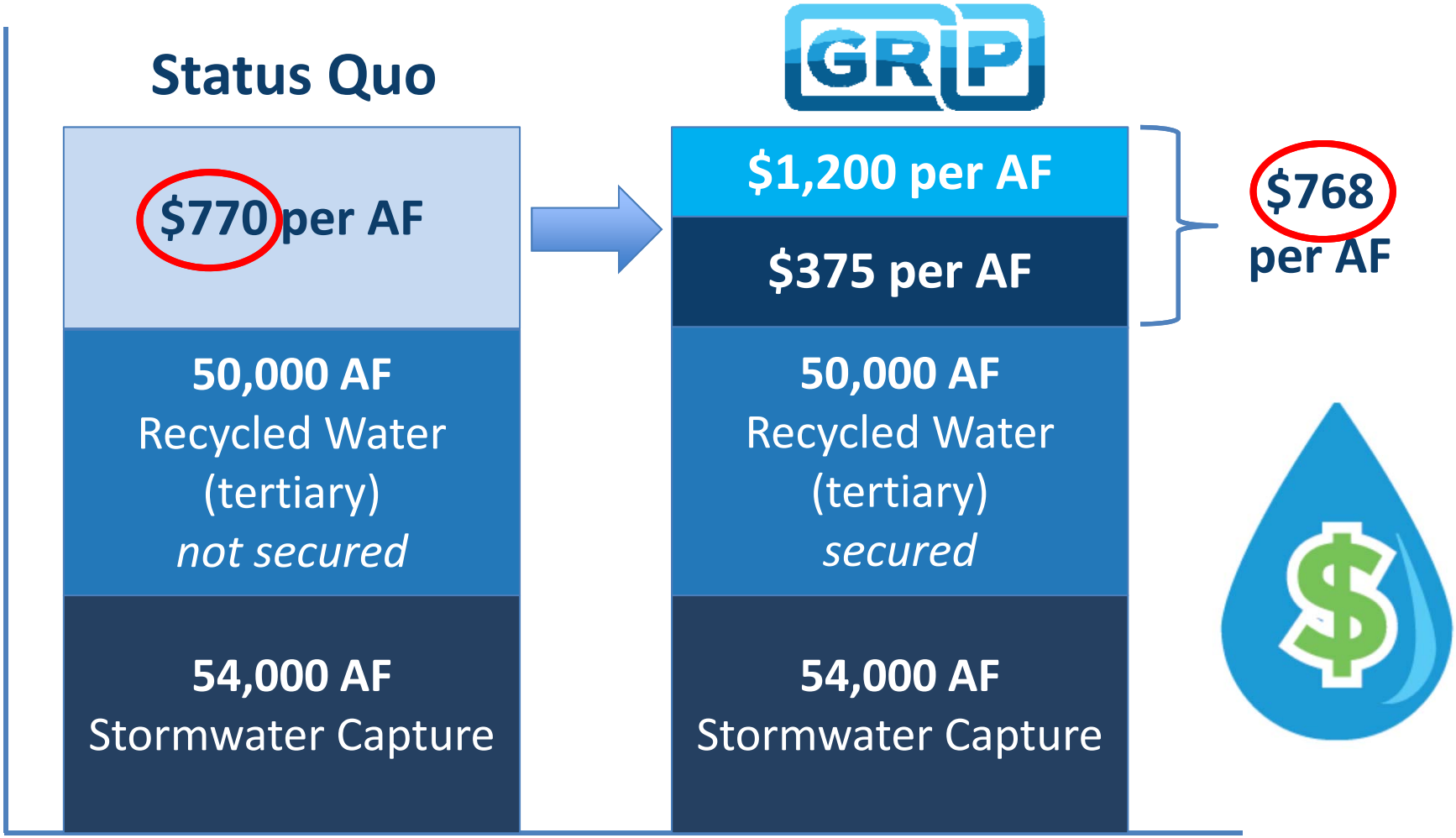
What is the Cost of GRIP?



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www.wrd.org

GRP CONSTRUCTION SCHEDULE

APR MAY JUN JUL AUG SEP OCT NOV DEC JUN

2016 2018

DECONSTRUCTION

SUPPLEMENTAL RECHARGE WELLS

BRINE DISPOSAL PIPELINE AND STREET IMPROVEMENT PROJECT

GRP

GROUNDWATER RELIABILITY IMPROVEMENT PROJECT ADVANCED WATER TREATMENT FACILITY

BOARD OF DIRECTORS

Willard H. Murray, Jr.
Division 1

Robert Katherman
Division 2

John D. S. Allen
Division 3

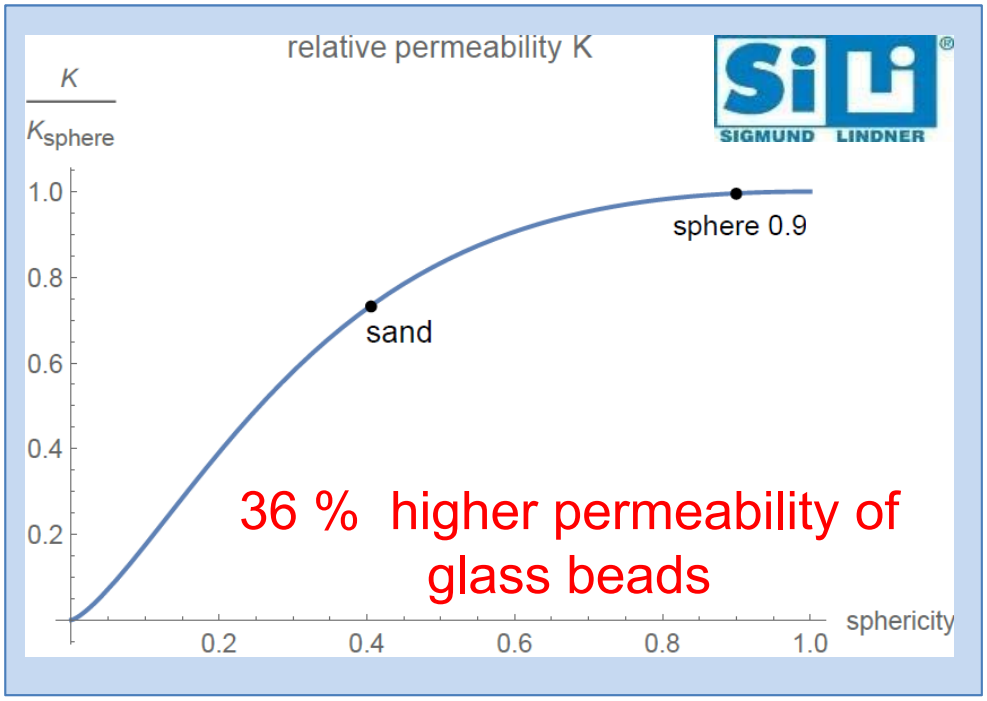
Sergio Calderon
Division 4

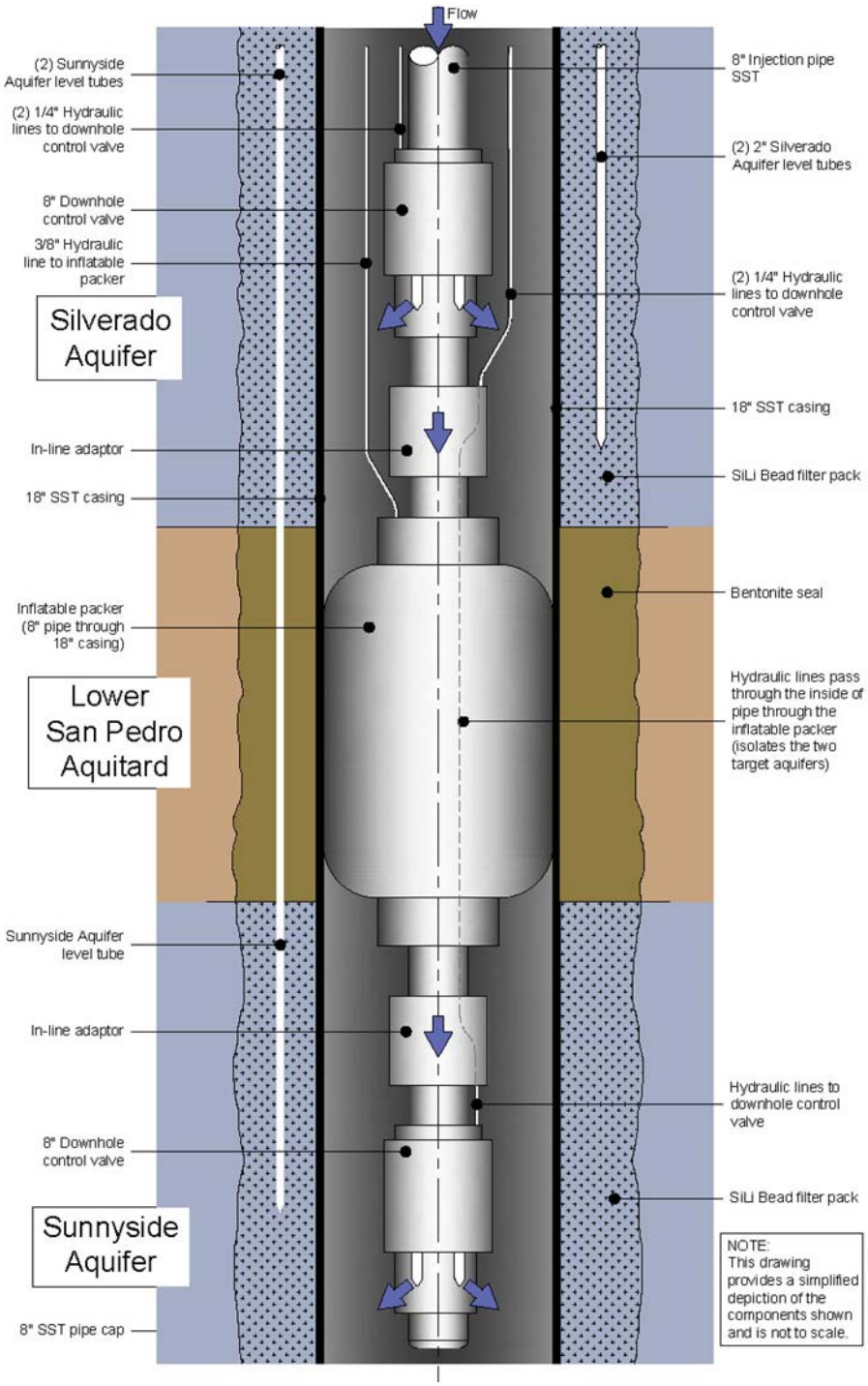
Albert Robles
Division 5

Robb Whitaker
General Manager

STORAGE WELL DESIGN

- 3 wells with a total flow rate of up to 4.5 mgd
- 3 additional down-gradient monitoring wells
- Packed off between aquifers
- Glass bead filter pack





Expanded WIN Program

- **After WRD has reached 100% independence from imported water in 2018 WIN will expand**
  - **Assist pumpers in achieving independence through utilization of available storage in the basins**
  - **As Watermaster, WRD can coordinate storage activities and provide technical and analytical support to the pumping community**
  - **WRD will continue to work with regulators to protect the basins**

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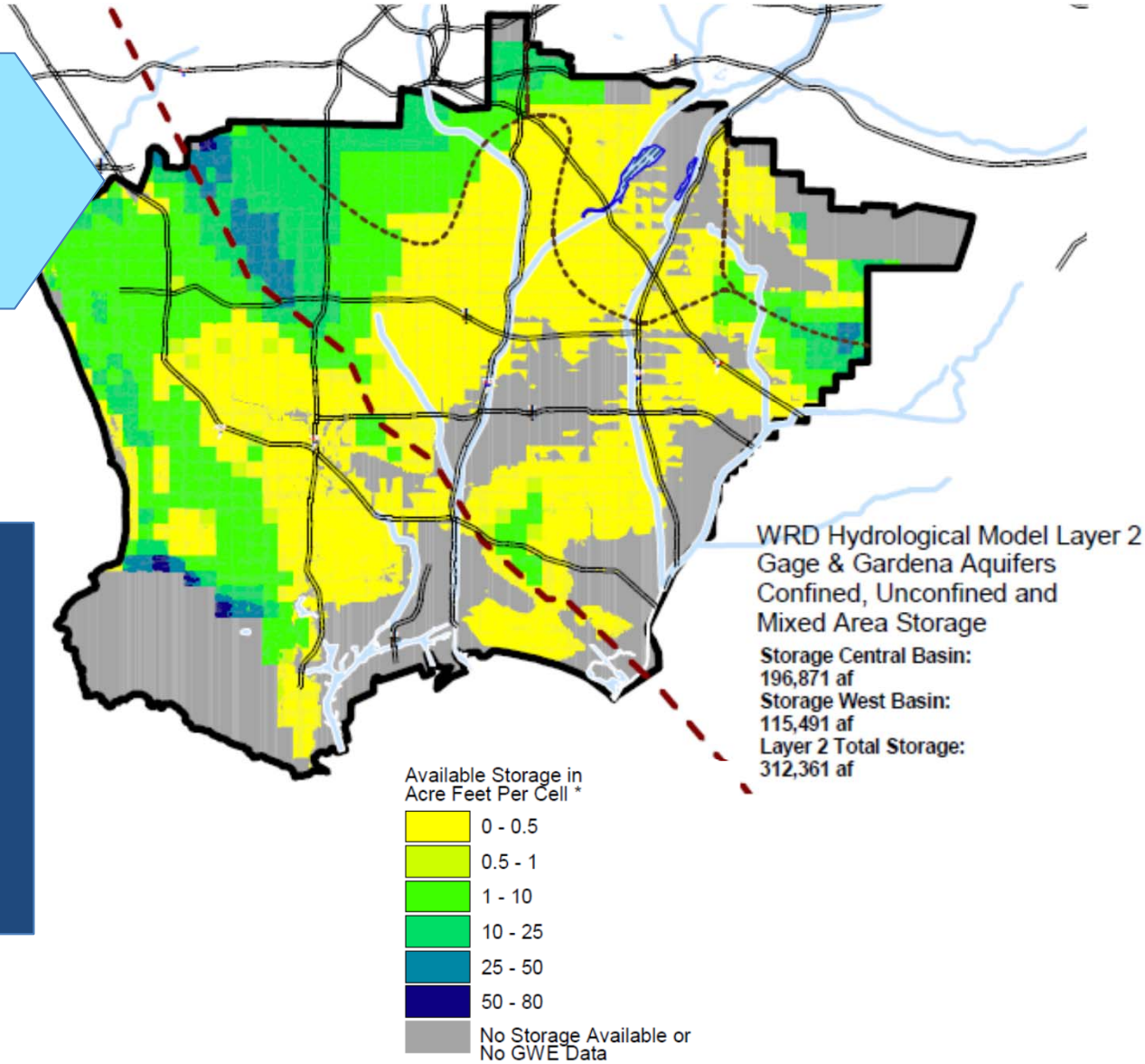
Groundwater Flow Model

Available storage was calculated using WRD's GIS and MODFLOW groundwater model



Results

- 620,169 AF (water levels within 50 ft of land surface)
- 290,000 AF (water levels within 100 ft of land surface)

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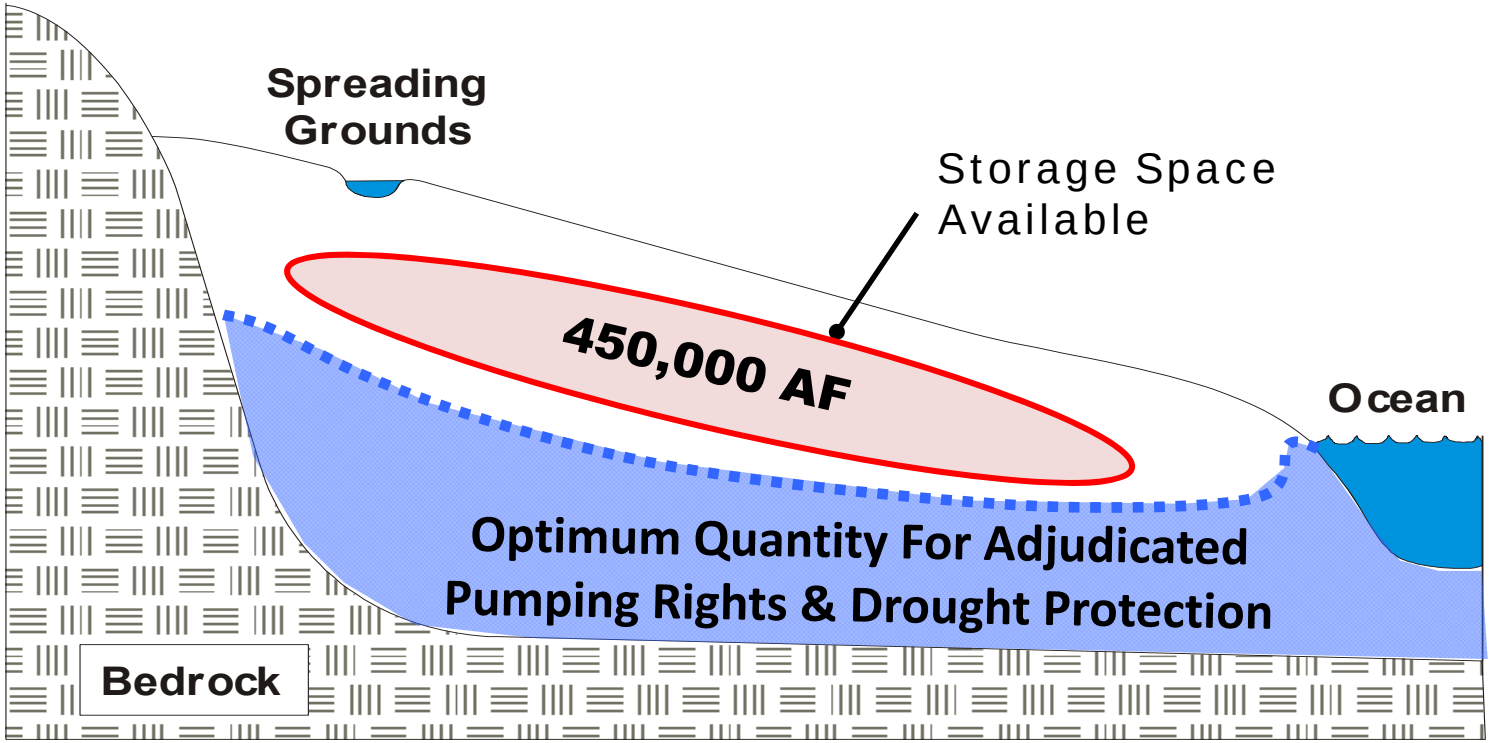
Groundwater Storage

- **Agreement was reached during the facilitated processes that there was 450,000 acre-feet of "Available Dewatered Space" in the basins**
  - **330,000 acre-feet in the Central Basin**
  - **120,000 acre-feet in the West Coast Basin**



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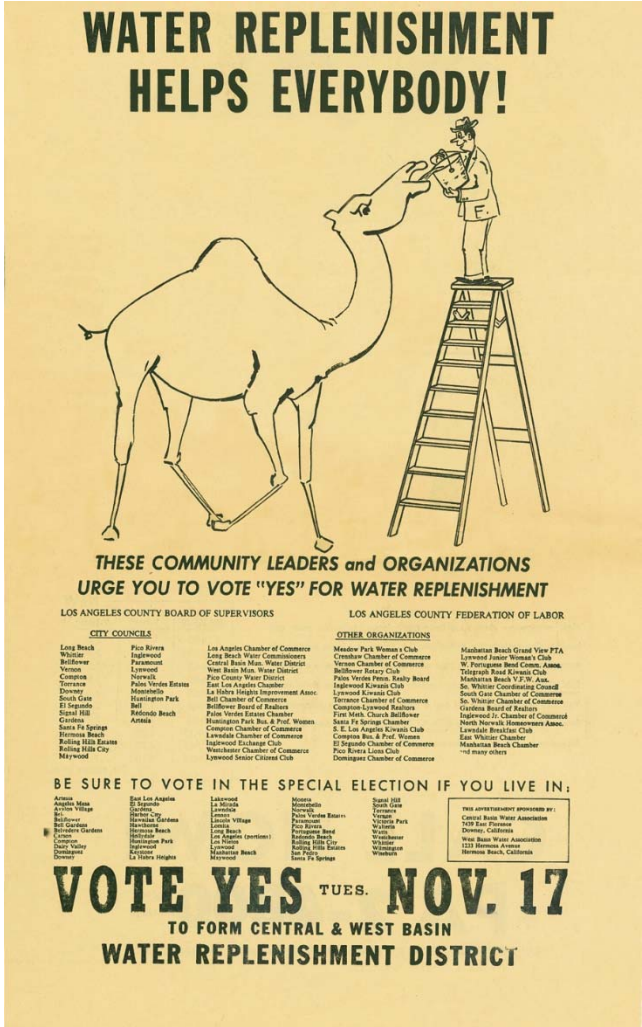
Conclusions - Thinking Ahead

After ~60 years of groundwater basin replenishment, WRD is on-track to be independent from imported water by 2018

- **Recent adjudication amendments pave the way for utilization of available storage**
  - **WRD has the monitoring and management programs in place to assist pumpers in utilizing storage**

Increased local independence from imported water!



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