Palmdale Water District
Strategic Water Resources Plan

Public Workshop

June 13, 2023

Woodard & Curran



Meeting Agenda

- Provide SWRP overview
- Present supply and demand results
- Discuss water supply options
- Review Plan Document



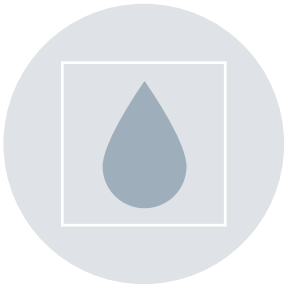
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Meeting Objectives

- Provide overview of SWRP Process
- Discuss plan analysis and findings
- Review plan content

SWRP Overview

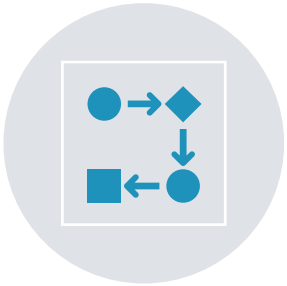
SWRP Overview



Provide a future vision for how PWD will meet its water supply through 2050



Facilitate meaningful engagement



Create a flexible, dynamic planning process



Build a strong technical foundation

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Stakeholder Meetings

1. Demand and Supply and Estimated Supply Gaps

2. Evaluation Criteria and Alternative Portfolios

3. Preferred Alternatives and Evaluation

Next Steps

- Board to consider adoption in July
- CEQA process to begin
- Three Special Studies
  - Biological Resources Assessment
  - Cultural Resources Assessment
  - Paleontological Resources Assessment



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Supply and Demand Results

How did we get here?

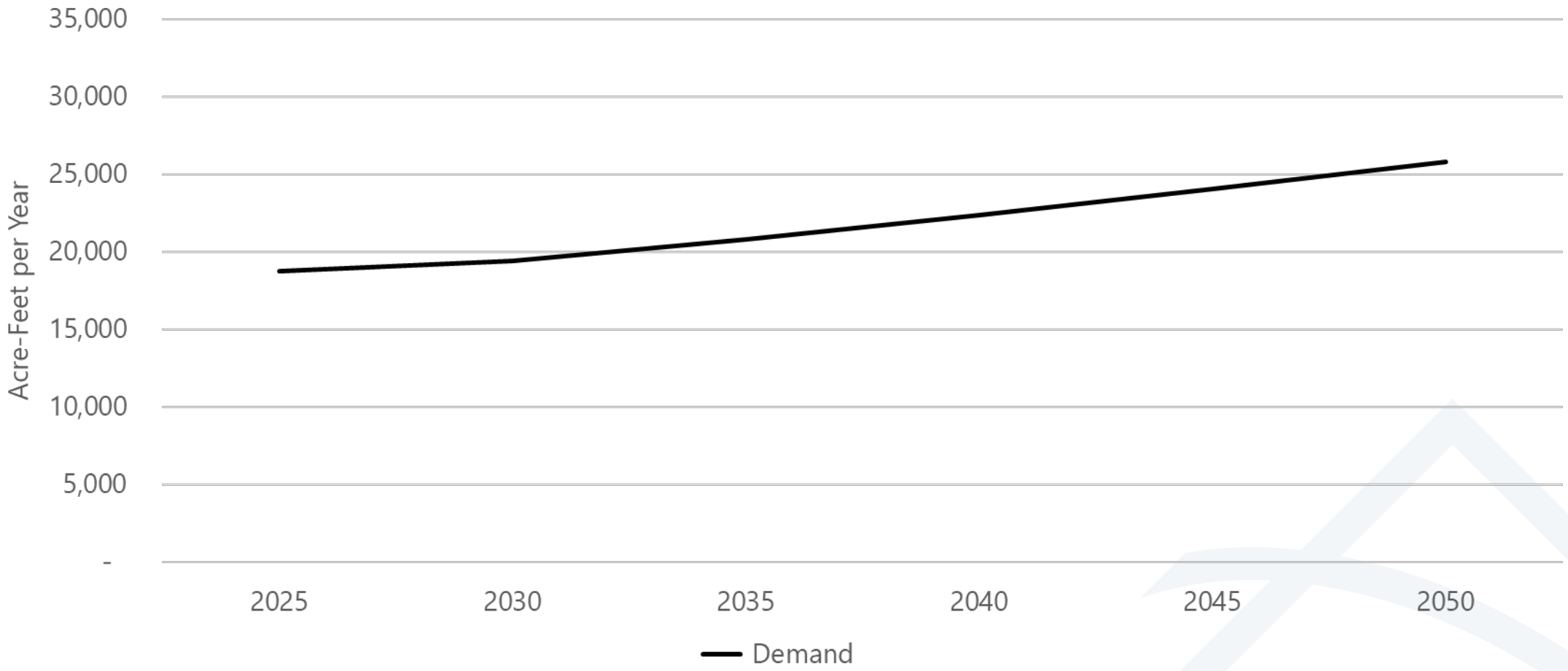
- Data included:
  - Hydrology
  - Demand by sector
  - Supplies
    - Local surface water
      - Littlerock Reservoir
    - Groundwater
      - Adjudication, return flows, federal credit
    - Imported water
      - SWP, transfers
    - Recycled water
      - Entitlement, augmentation, City of Palmdale's entitlement



Shortage Frequency and Depth

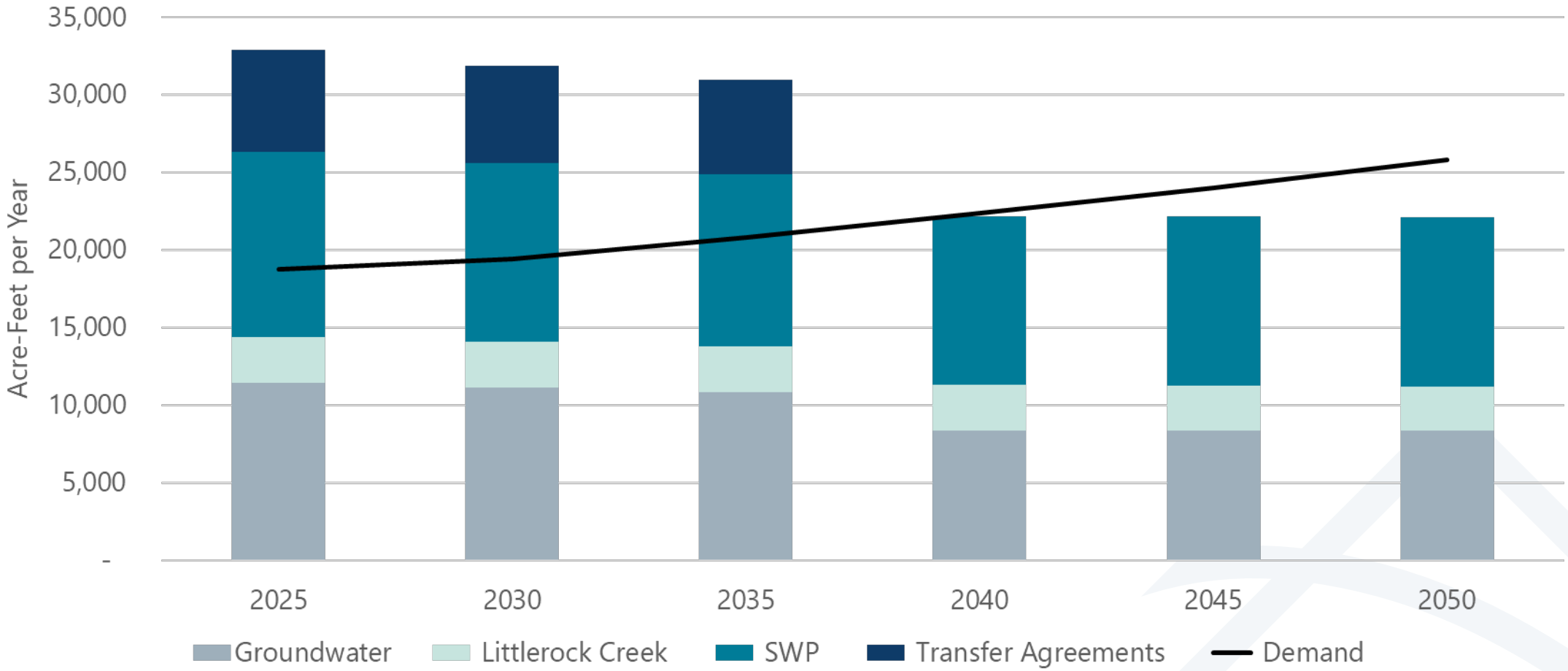
	2025	2030	2035	2040	2045	2050
Shortage probability	59%	65%	81%	98%	100%	100%
Average annual shortage (AF)	788	952	1,163	2,815	4,136	5,924
Average annual shortage (% of demand)	4%	5%	6%	13%	17%	23%
Maximum annual shortage (AF)	4,266	5,273	6,885	8,840	10,931	13,990
Max annual shortage (% of demand)	23%	27%	33%	39%	45%	55%

Projected Water Demands



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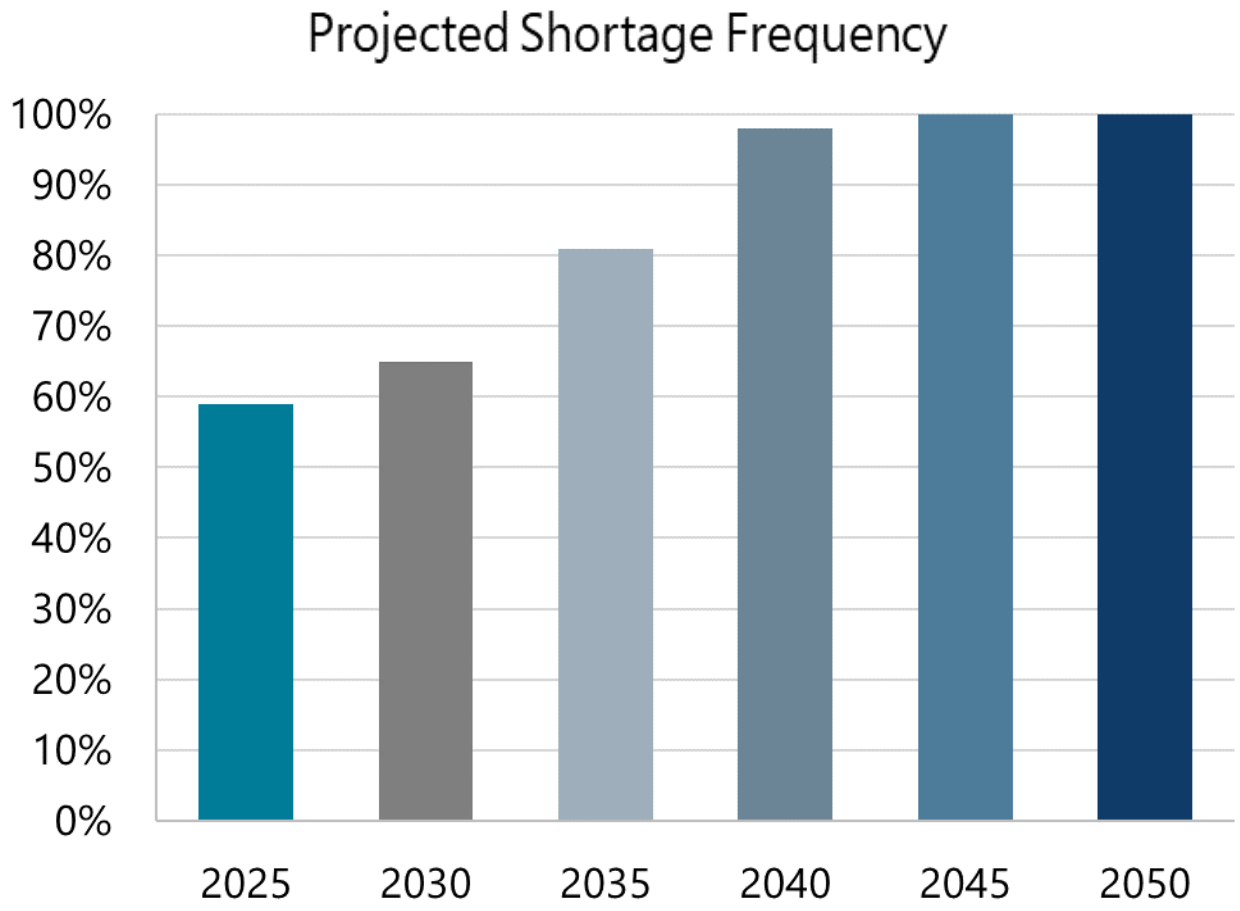
Projected Water Supplies



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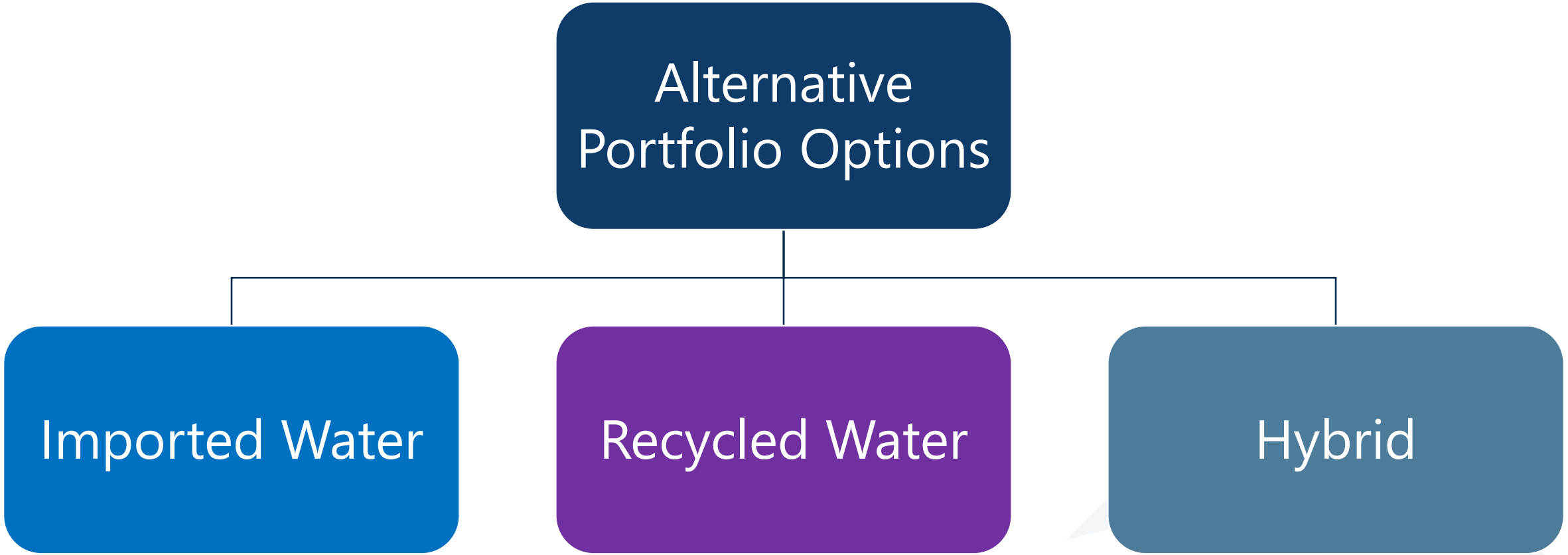
Supply Gaps: Key Takeaways

- Shortages anticipated every year starting 2045
- Annual shortages may range between 3% and 23% of total demand
- Maximum shortages may range between 17% and 55% of demand

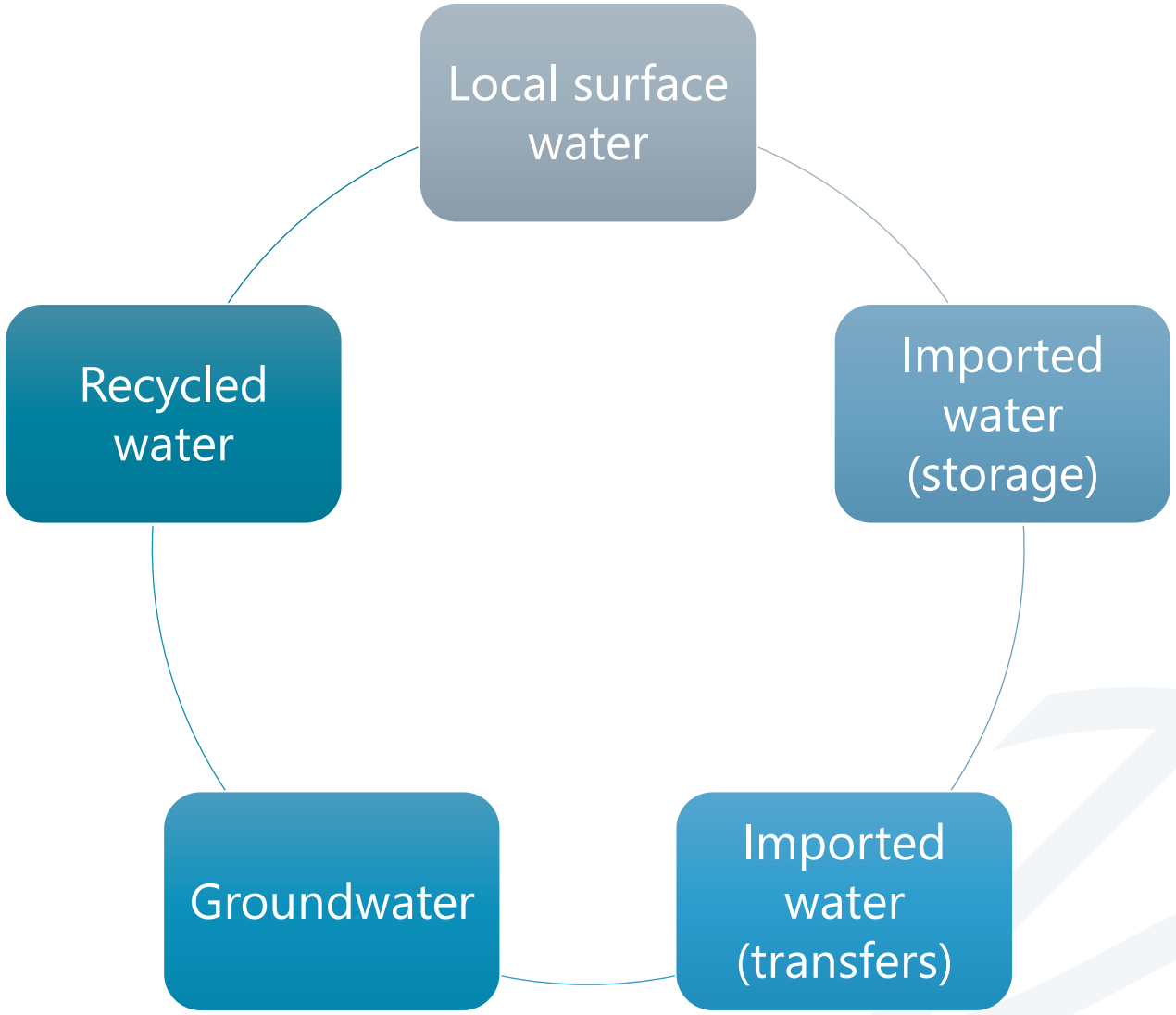


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Water Supply Options


Alternative Portfolio Options
Imported Water
Recycled Water
Hybrid

Water Supply Options



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Summary of Revised Evaluation Criteria

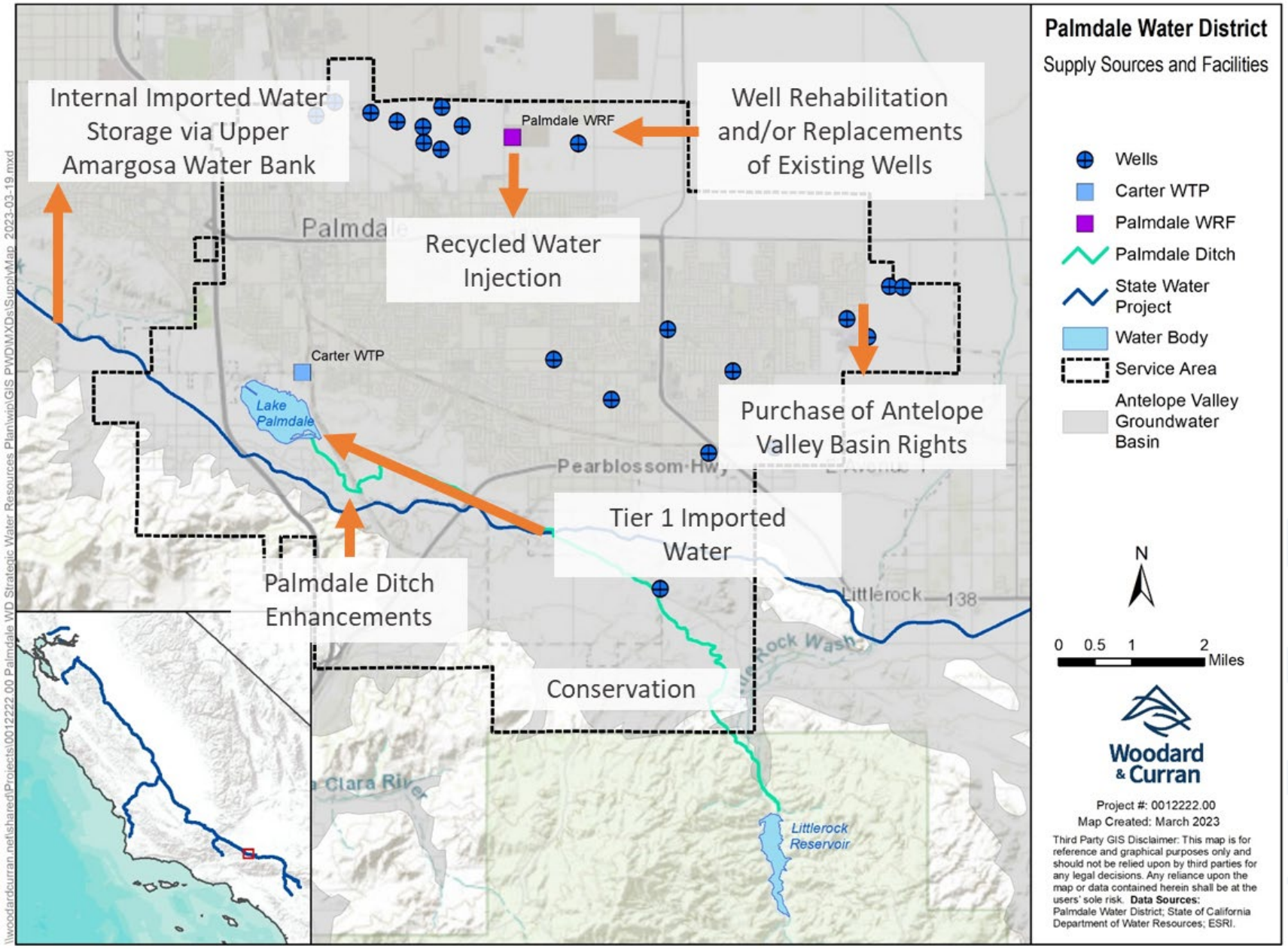
- Drought Reliability – Frequency
- Drought Reliability – Depth
- Emergency Imported Water Outage Reliability
- Cost Efficiency
- Water Quality
- Sustainability
- Funding Potential
- Implementability
- Institutional Independence

Preferred Alternative Portfolio – Alternative 11

- Includes:
  - Purchase of Antelope Valley Basin Rights – 1,000 AF
  - Well rehabilitations and replacement of existing wells
  - Palmdale Ditch Enhancements – 1,500 AF
  - Indirect Potable Reuse: Recycled Water Injection – 4,500 AF
  - Conservation – variable
  - Imported Water Storage via Upper Amargosa Water Bank
  - Imported water, Tier 1 (Article 21 water) – 740 AF

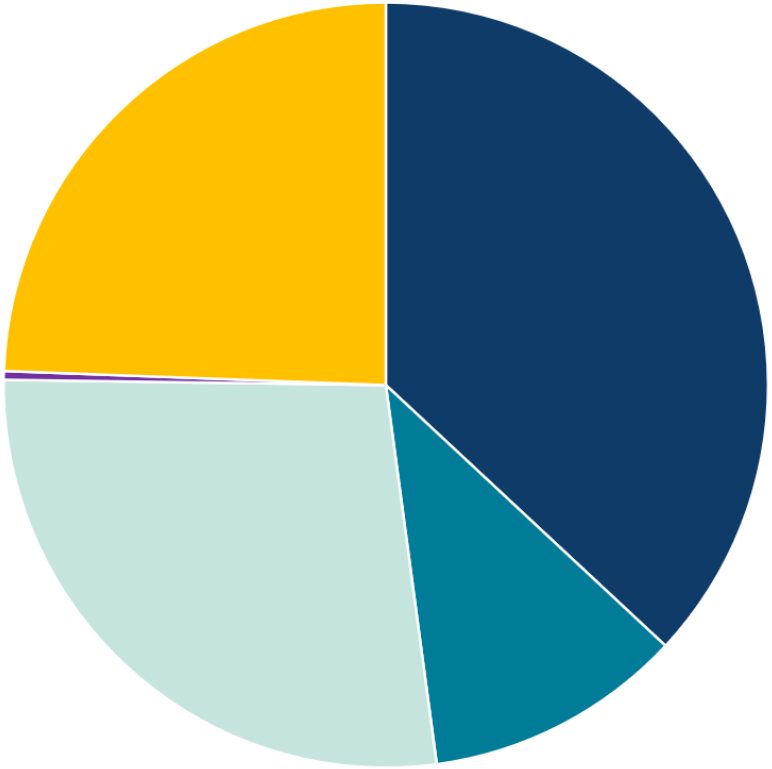
Capital Cost ($)	Water Purchase Cost ($)	O&M Cost of New Projects ($/year)	Unit Cost ($/AF)
$320.5M	$10M	$7.7M	$3,400

Preferred Alternative Portfolio – Alternative 11

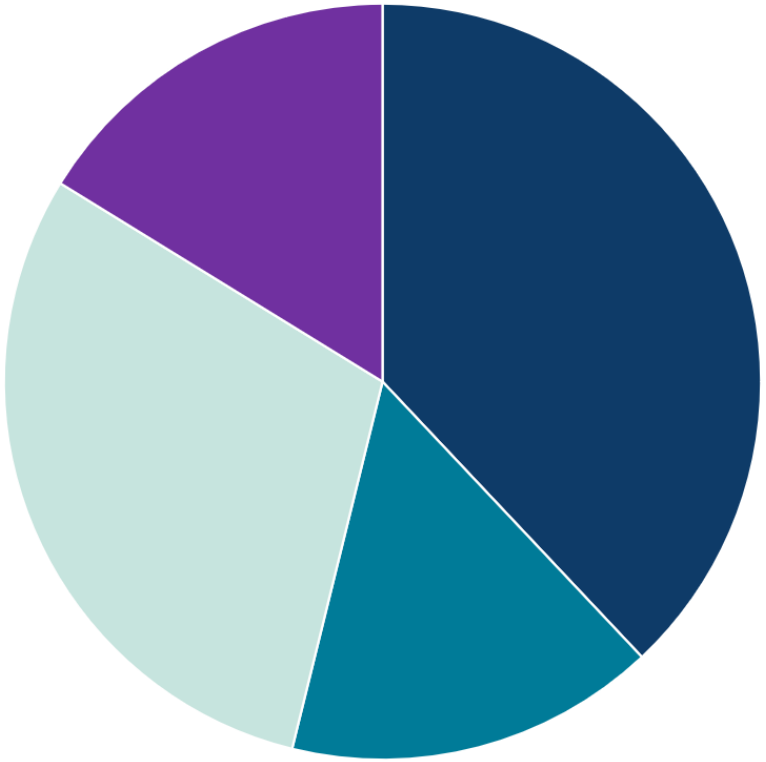


Preferred Alternative Portfolio – Alternative 11

Projected Baseline Water Supply (2050)



Projected Alt 11 Water Supply (2050)



Imported Water Local Surface Water Groundwater Recycled Water Unmet Demand

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Preferred Alternative Portfolio – Alternative 11

Projected Water Supply Shortage Frequency and Depth of Unmet Demand – 2050

	Baseline	Alternative 11
Shortage Probability	100%	3%
Average Annual Shortage (AF)	6,700	5
Average Annual Shortage (% of demand)	28%	0%
Maximum Annual Shortage (AF)	10,416	77
Maximum Annual Shortage (% of demand)	40%	0.3%

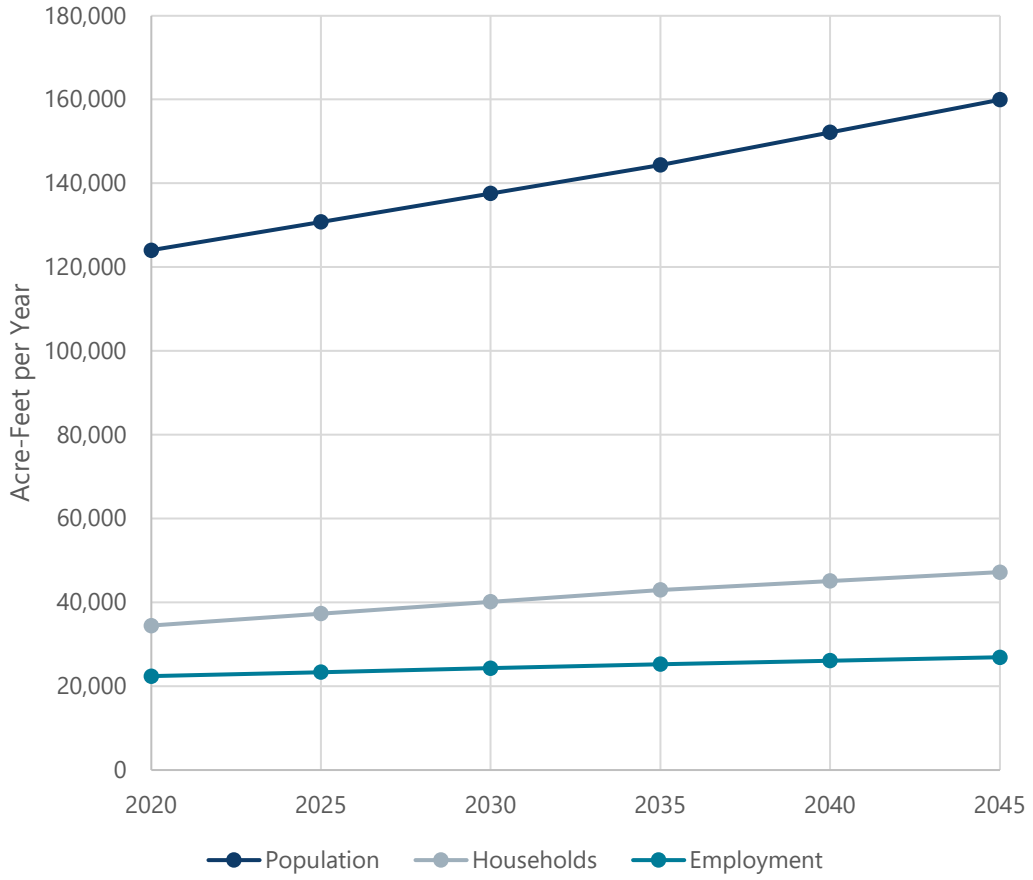
Plan Document

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Plan Contents

- Executive Summary
- Introduction
- Demand Forecast
- Baseline Supply Forecast
- Options Development and Descriptions
- Alternative Descriptions and Evaluation
- Implementation
- Financing Plan
- References

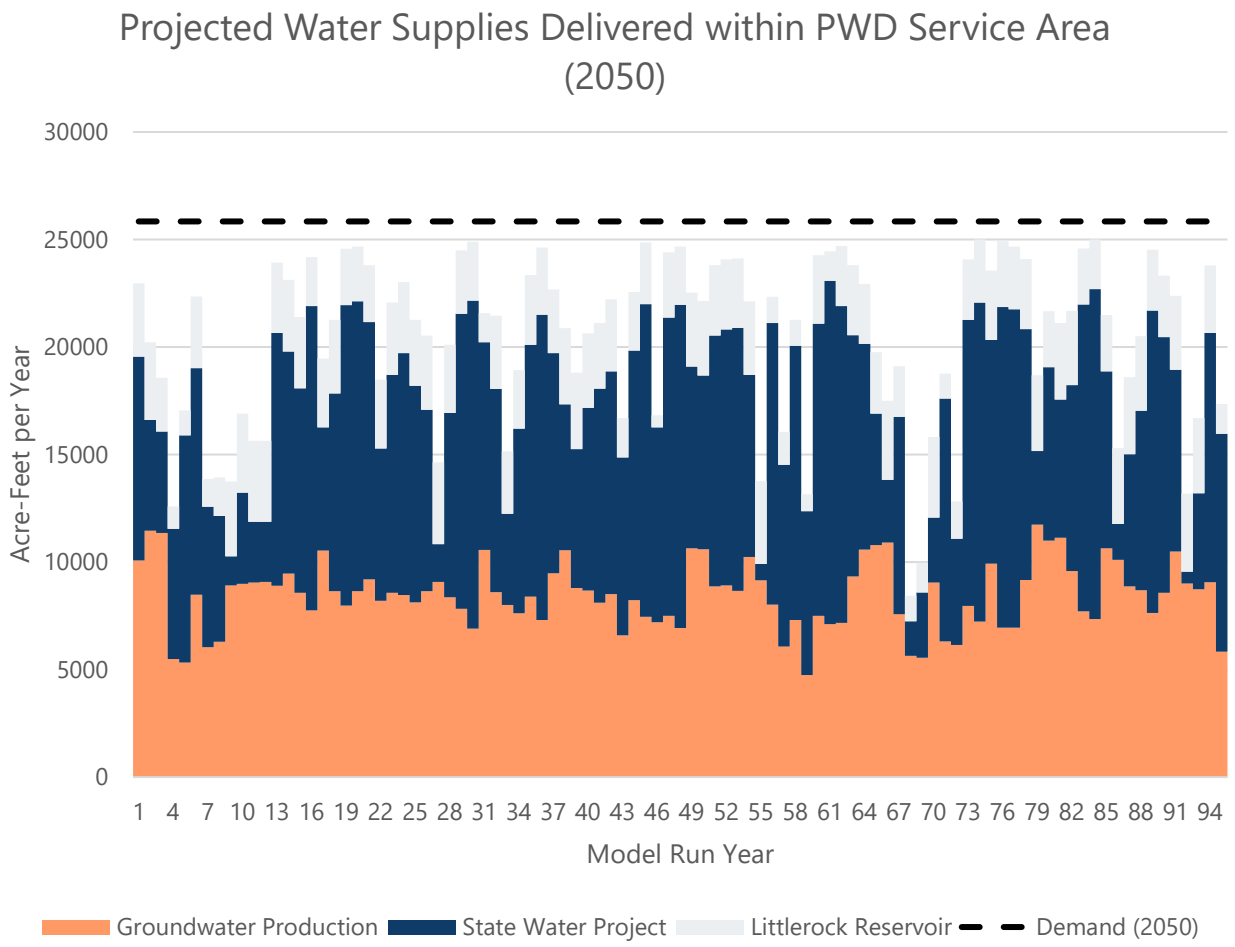
Demand Forecast



- Historic Trends
- Service Area Growth
- Demand Forecast Methodology
- Demand Forecast

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Baseline Supply Forecast



- Supply Overview
  - Imported Water
  - Groundwater
  - Local Surface Water
  - Recycled Water
  - Baseline Supply Projections
- Baseline Supply and Demand Comparison
  - Analysis Methodology
  - Baseline Supply vs. Demand Results

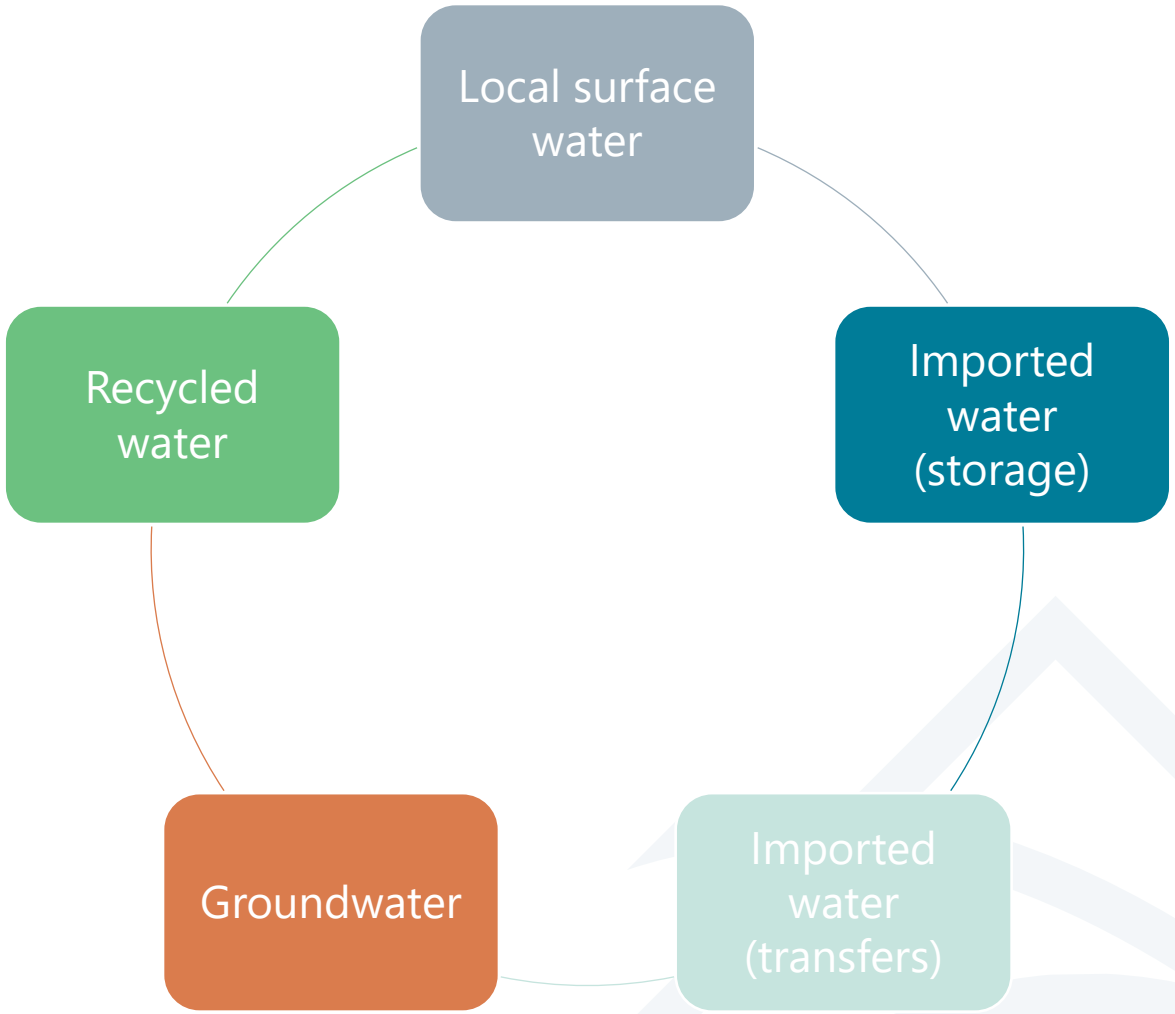
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Options Development and Descriptions

Options Development

Options Descriptions

- Imported Water Options
- Local Groundwater Options
- Local Surface Water Options
- Recharge/Banking Options
- Recycled Water Options
- Demand Management Options



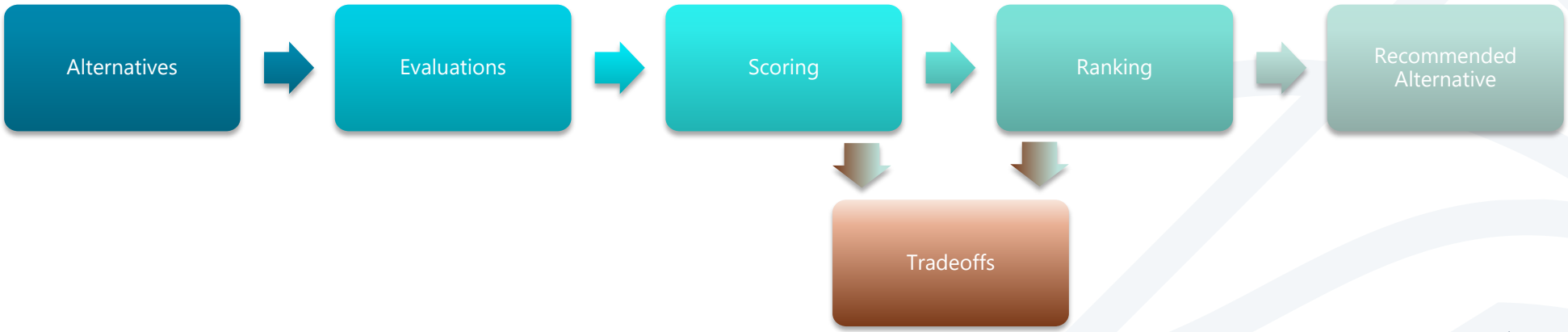
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Alternative Descriptions and Evaluation

- Alternatives Development
  - Alternative 1 – Imported Water
  - Alternative 2 – Imported Water
  - Alternative 3 – Recycled Water (Groundwater Injection)
  - Alternative 4 – Recycled Water (Surface Water Augmentation)
  - Alternative 5 – Hybrid Imported Water/Recycled Water (External Banking and Recycled Water Injection)
  - Alternative 6 – Hybrid Imported Water/Recycled Water (Internal Banking and Surface Water Augmentation)
  - Alternative 7 – Hybrid Surface Water/Recycled Water
  - Alternative 8 – Hybrid Groundwater/Recycled Water
  - Alternative 9 – Hybrid Imported Water/Recycled Water
  - Alternative 10 – Recycled Water Injection and Surface Water Augmentation
  - Alternative 11 – Hybrid Groundwater/Recycled Water/Surface Water

Alternative Descriptions and Evaluation

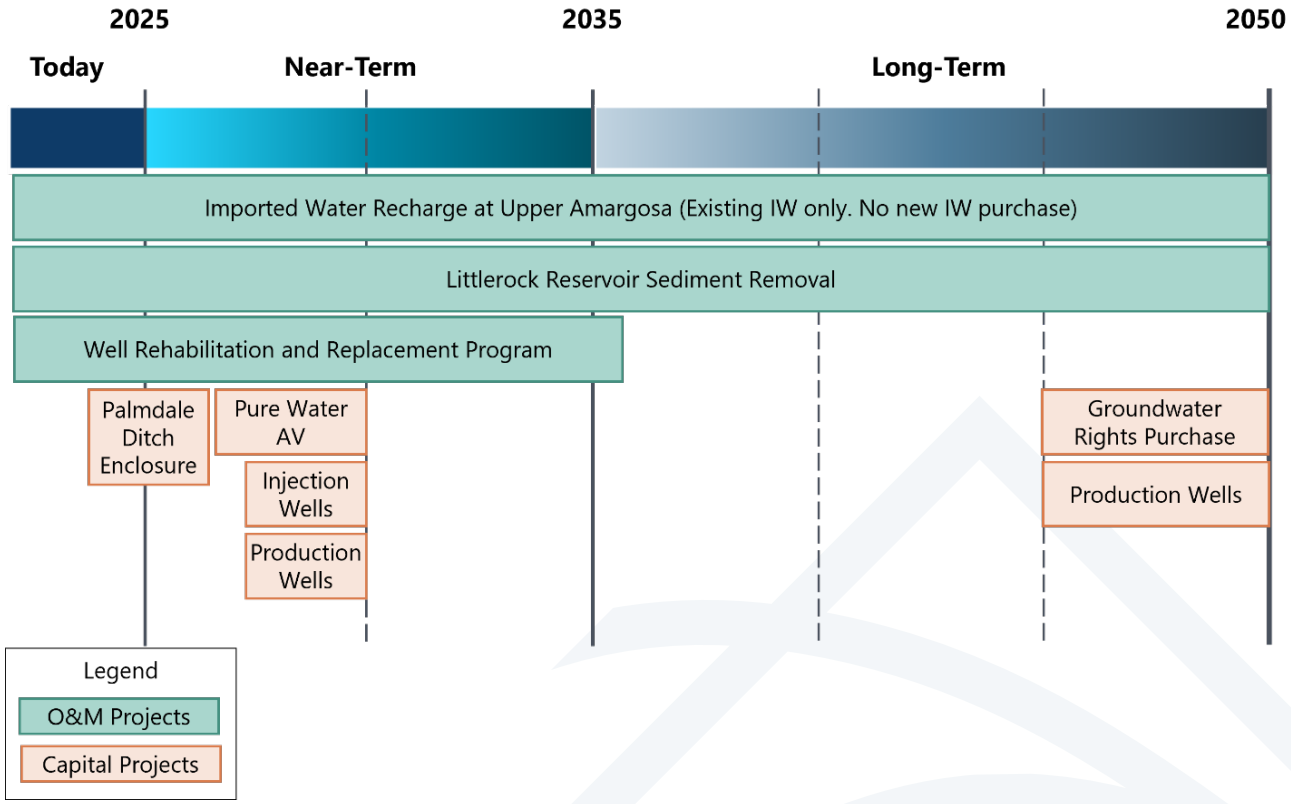
- Summary of Water Supply Shortages and Unmet Demands
  - Alternatives Evaluation
  - Evaluation Criteria
  - Alternative Evaluation
  - Alternative Summary Scores
  - Alternative Ranking Results and Selection of Preferred Alternative
  - Analysis of Preferred Alternative with Delta Conveyance Project



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Implementation

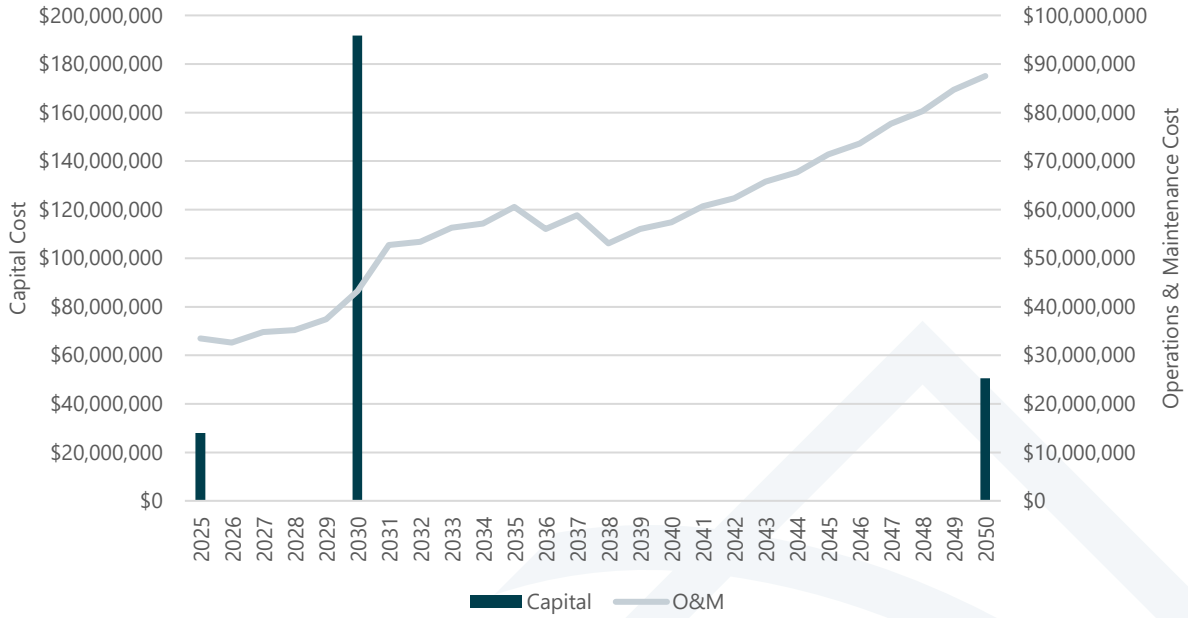
- Preferred Alternative Summary
  - Implementation Plan
  - Imported Water
  - Groundwater
  - Recycled Water
  - Littlerock Reservoir
  - Conservation
- Implementation Schedule
- Projected Costs
- Adaptive Management



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Financing Plan

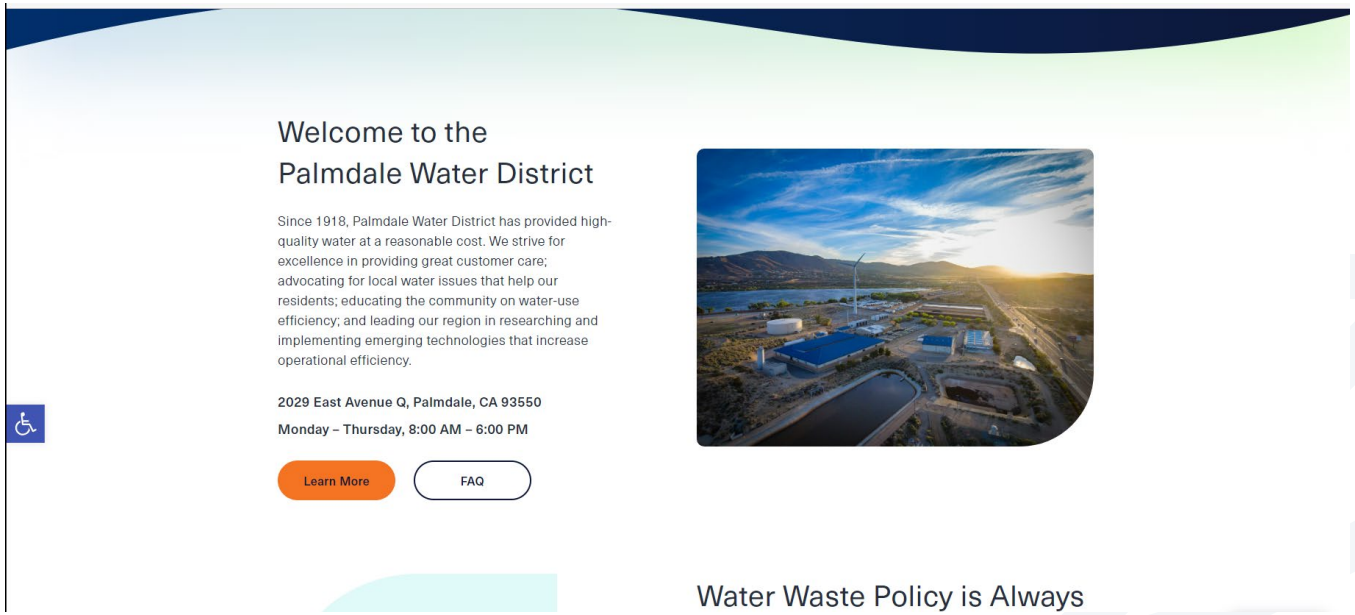
- SWRP Financing Principles
- Financing Options
- Projected Cash Flow Requirements
- Financing Strategies
  - Water Supply Connection Fee
  - Water Rates
- Financing Plan Summary



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How to Review/Comment on the Plan

- The Plan will be available on palmdalewater.org by the end of July
  - We will email this group of attendees when it is available
- Written comments can be submitted to mvallarta@woodardcurran.com
  - Please use “Palmdale WD SWRP” in the subject line



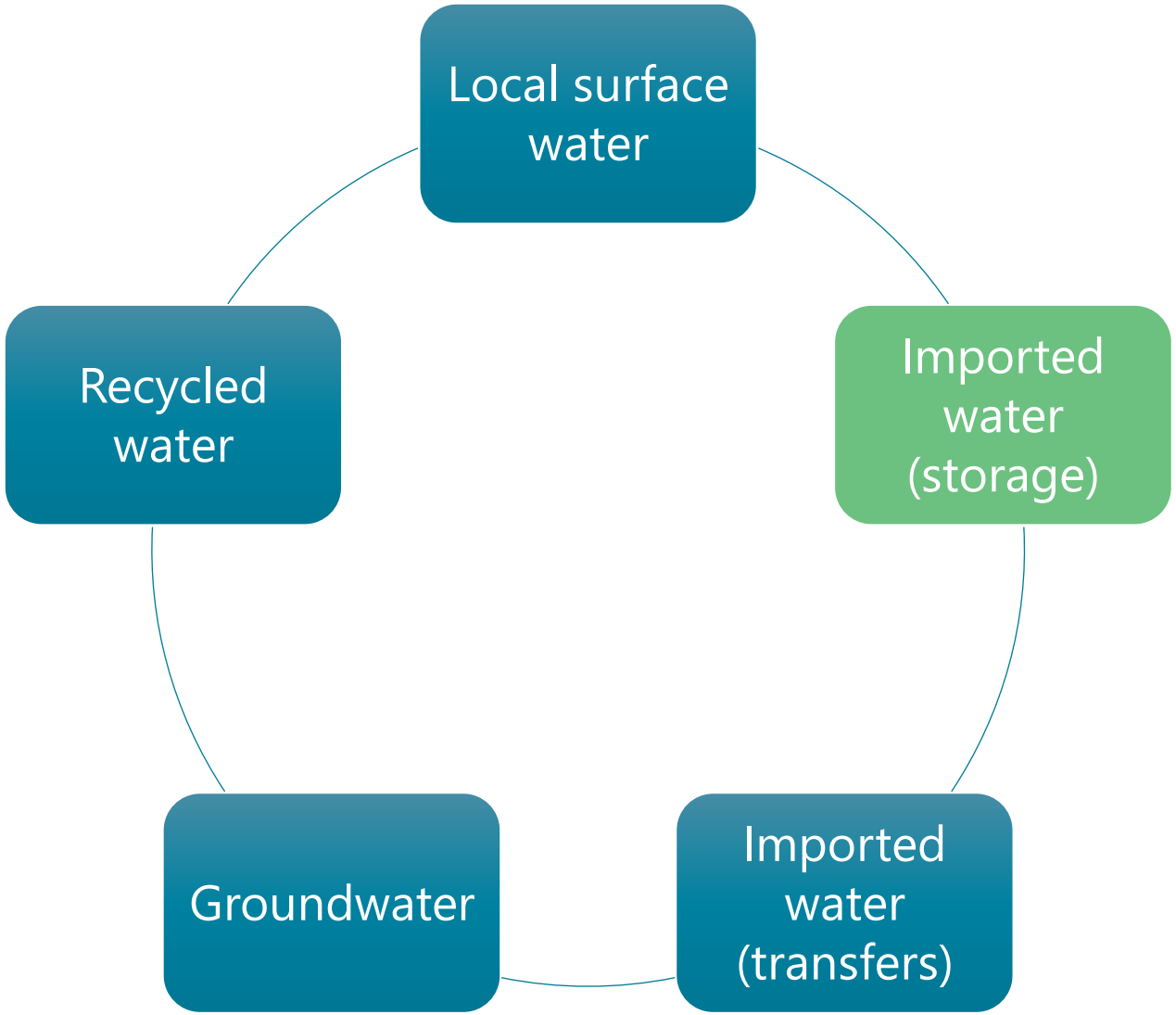
Additional Discussion

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Thank you!



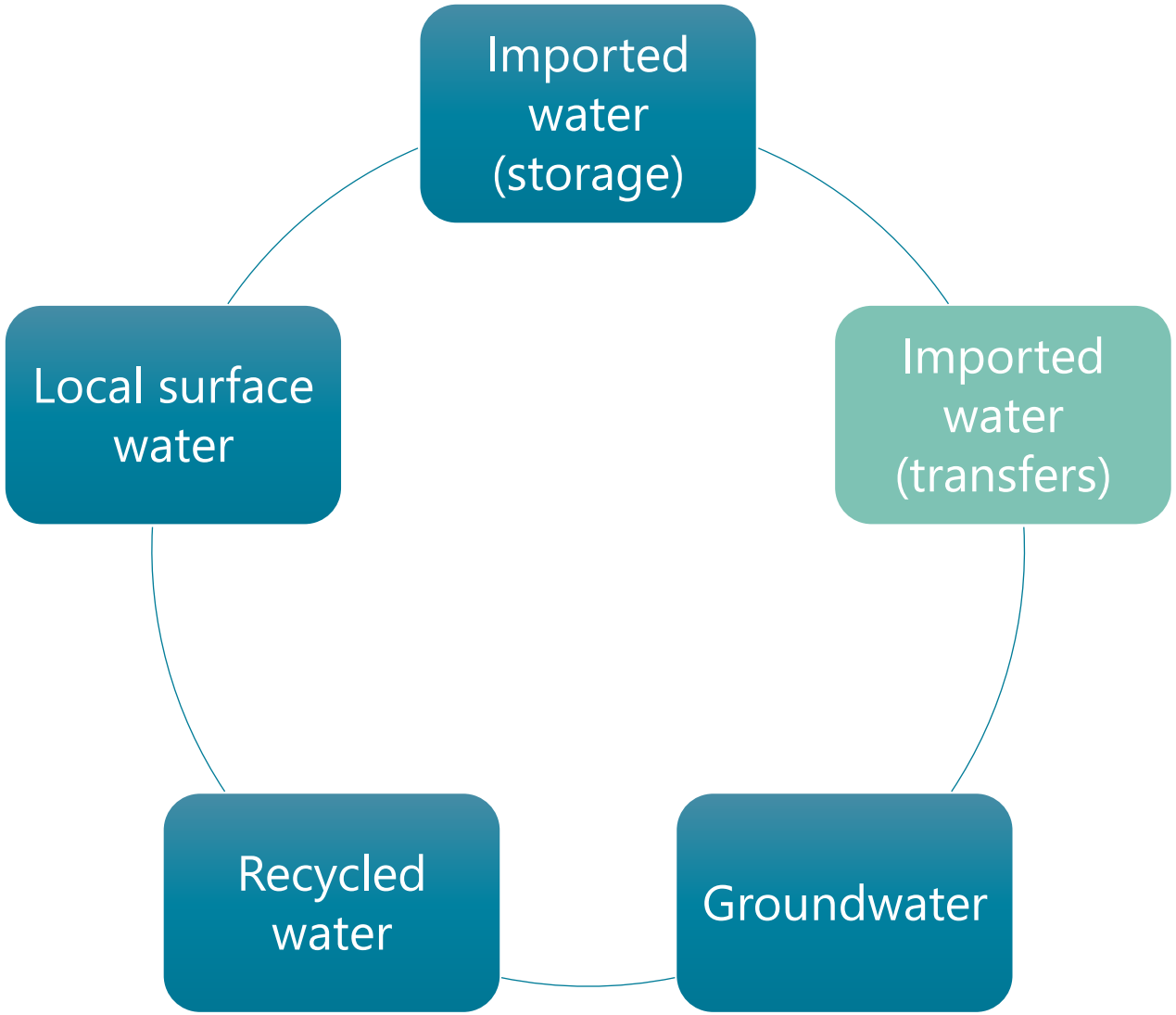
Water Supply Options



- SWP storage north of Delta
- SWP storage in San Joaquin Valley
- SWP storage in Antelope Valley
- SWP storage south of PWD
- Recharge imported water in Big Rock Creek area

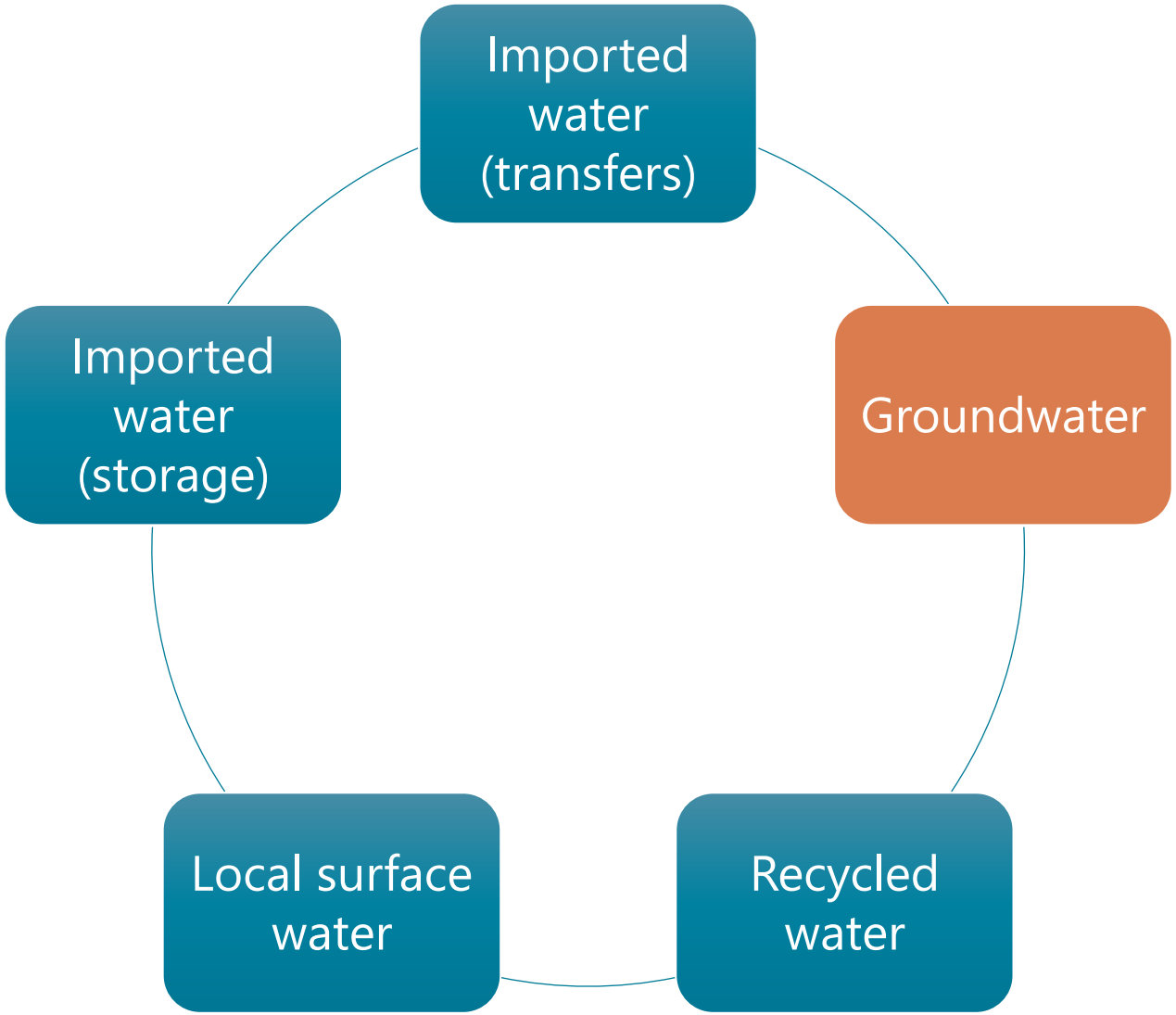
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Water Supply Options



- SWP transfers with UWCD
- Renegotiate with Butte County for Table A SWP Water
- Excess wet year water (Article 21)
- SWP Wet-Year (1 Year)
- SWP Long-Term Lease
- Permanent Transfer SWP/CVP Water
- Table A SWP Water
- CVP Water
- Non-SWP Water PRE-14
- Seawater desalination

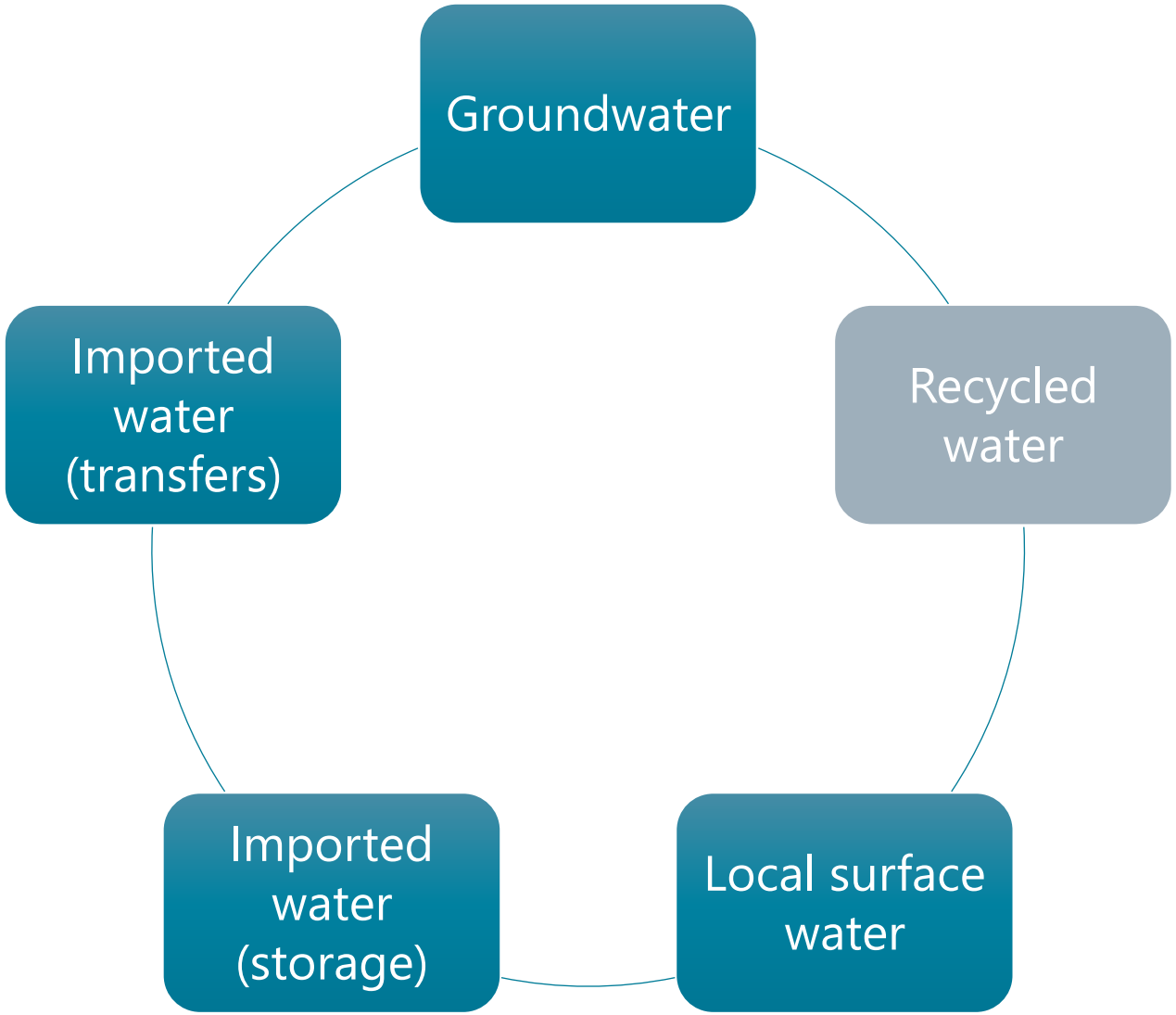
Water Supply Options



- Well replacements

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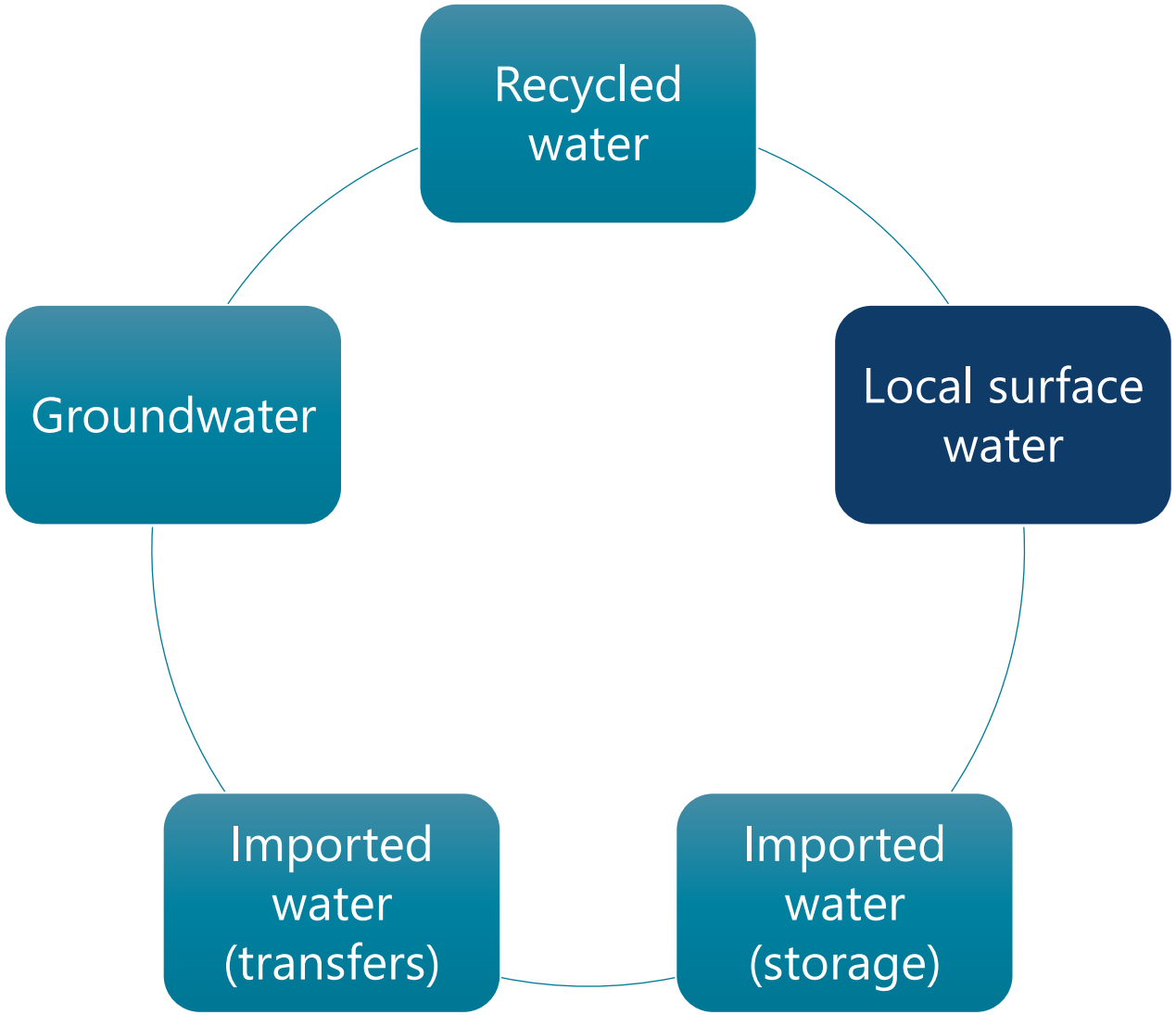
Water Supply Options



- Partner with LACSD to develop recycled water
- PWRP deliveries for nonpotable use
- PWRP recharge in Palmdale Lake
- PWRP recharge in groundwater

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Water Supply Options



- Sediment removal at Littlerock Creek Dam
- Pipe water from Littlerock Dam to Lake Palmdale

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