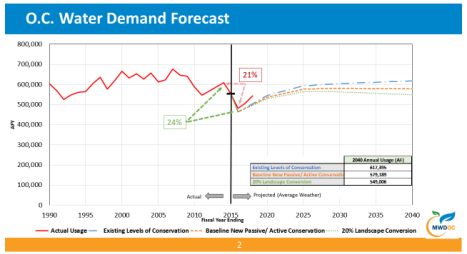
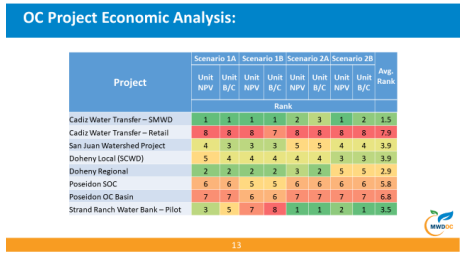
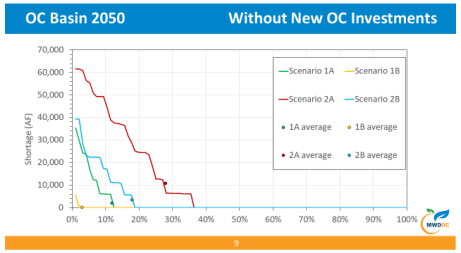
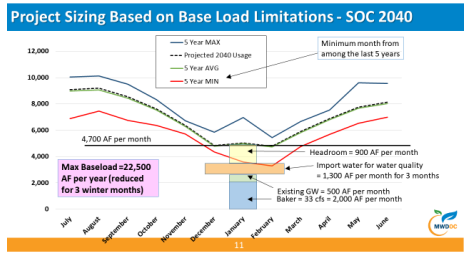
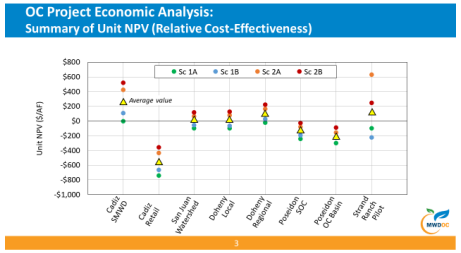










Briefing for Santa Ana Regional Water Quality Control Board

Workshop for Permit Renewal for Poseidon Resources

May 15, 2020

Karl Seckel, AGM

Municipal Water District of Orange County (MWDOC)

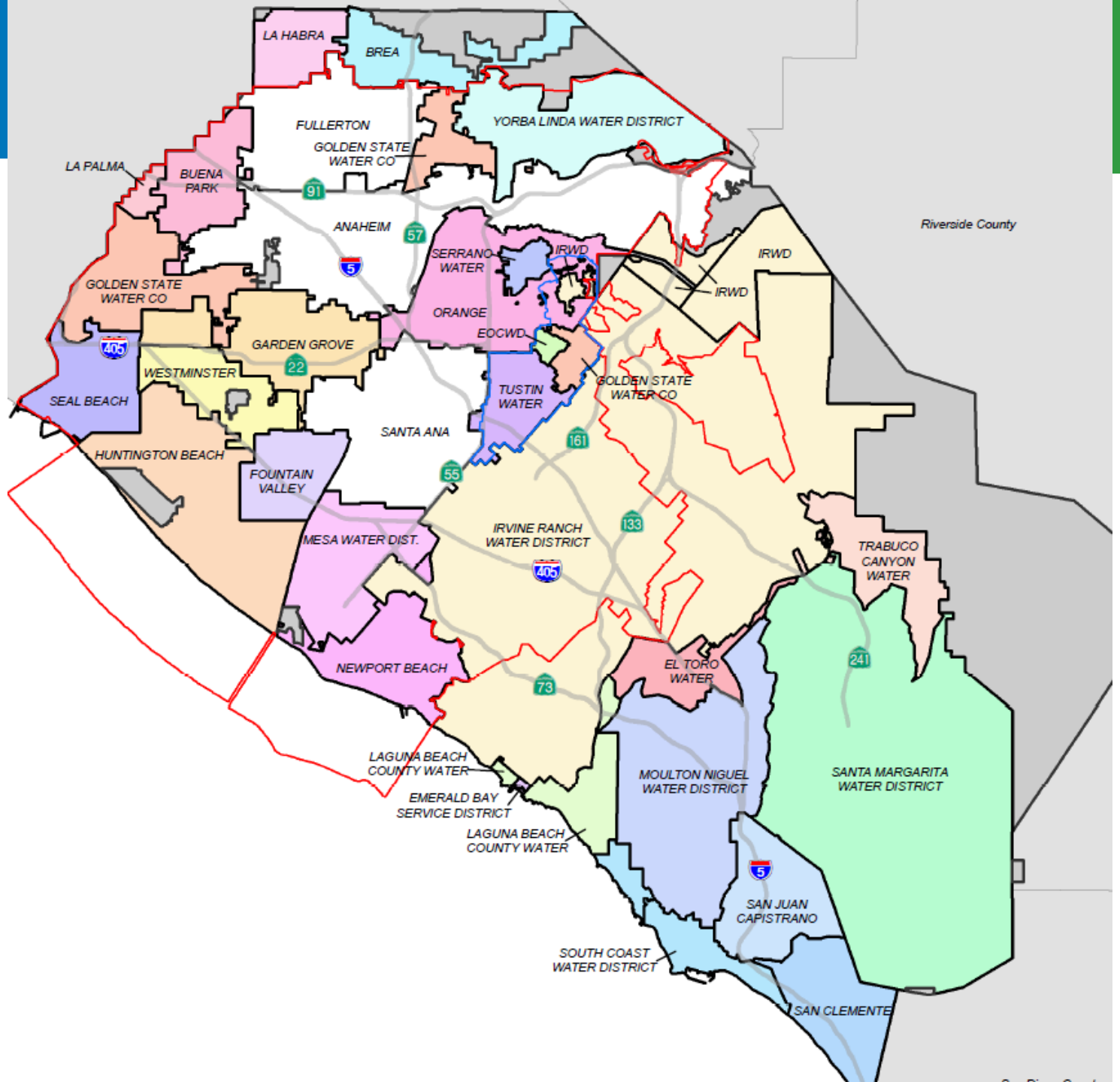
Presentation Follows the Letter Submitted to the Regional Water Board on March 4, 2020

- MWDOC's Role in Orange County
- Alternative Definitions of "Need" for a Water Supply Project and the Role of Water Agencies
- Urban Water Management Plans are State Mandated
- Non-Mandated Planning Documents
- Alternative Project Evaluations and Ranking
- 2018 OC Water Reliability Study
- Changed conditions are part of Planning
- Role of Water Agencies Closing

MWDOC

MWDOC

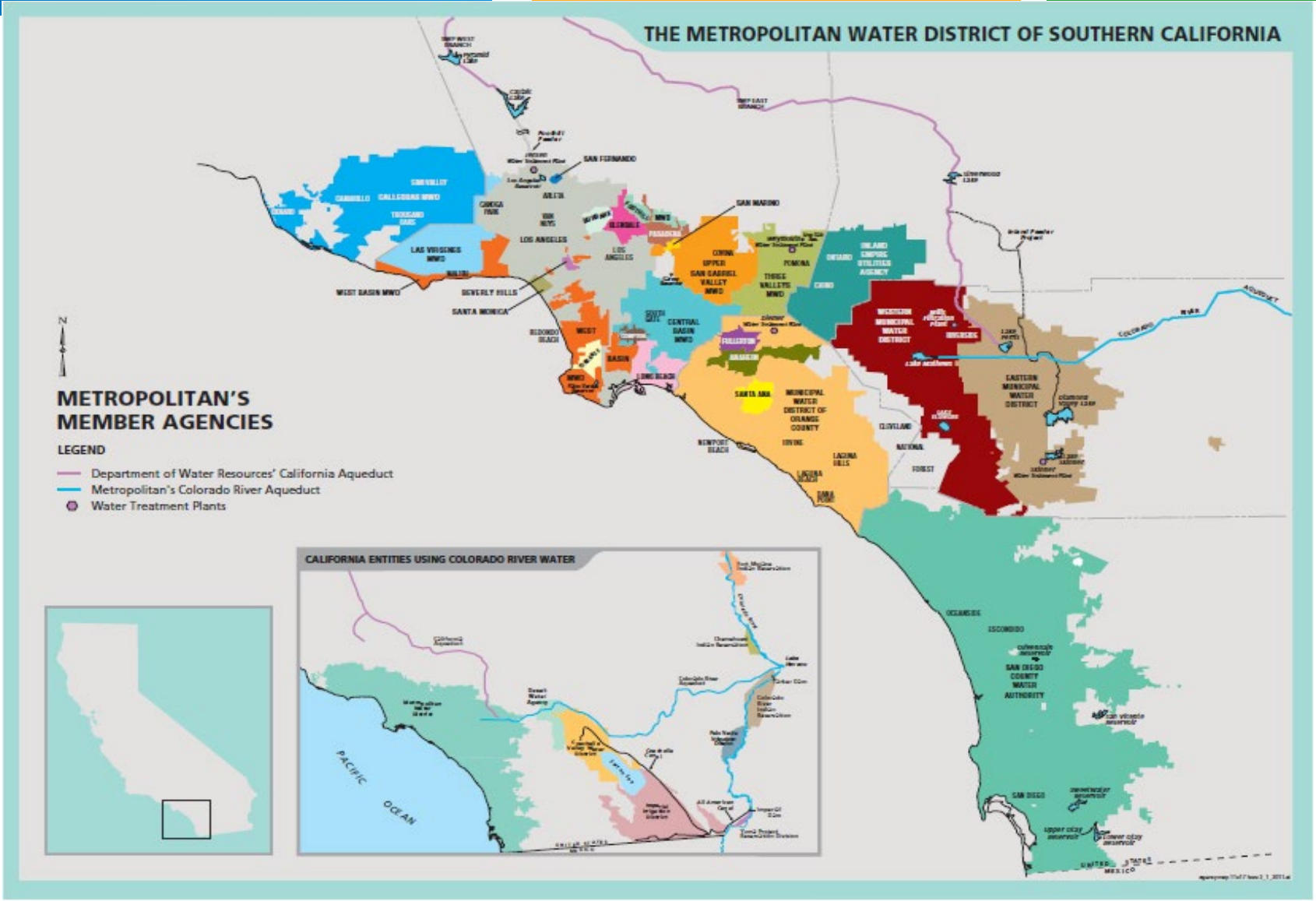
- Wholesale imported water provider
- 3rd largest MET member agency (out of 26)
- Covers all of OC except Anaheim, Fullerton and Santa Ana
- Serves 28 member agencies and a population of 2.4 million



MET's Integrated Resources Plan (IRP)

Municipal Water District Of Orange County (MWDOC)

One of Metropolitan Water District of Southern California (MET) Member Agencies - Appoint 4 of 37 directors to the MET Board which serves 19 million residents



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MWDOC's Role in Orange County

PRIMARY RESPONSIBILITIES

- Imported Water Supply
- Water Supply Development
- Water Reliability
- Emergency Response
- Water Use Efficiency
- Water Loss Program
- School Program
- Public Information and Water Edu
- Legislative Advocacy

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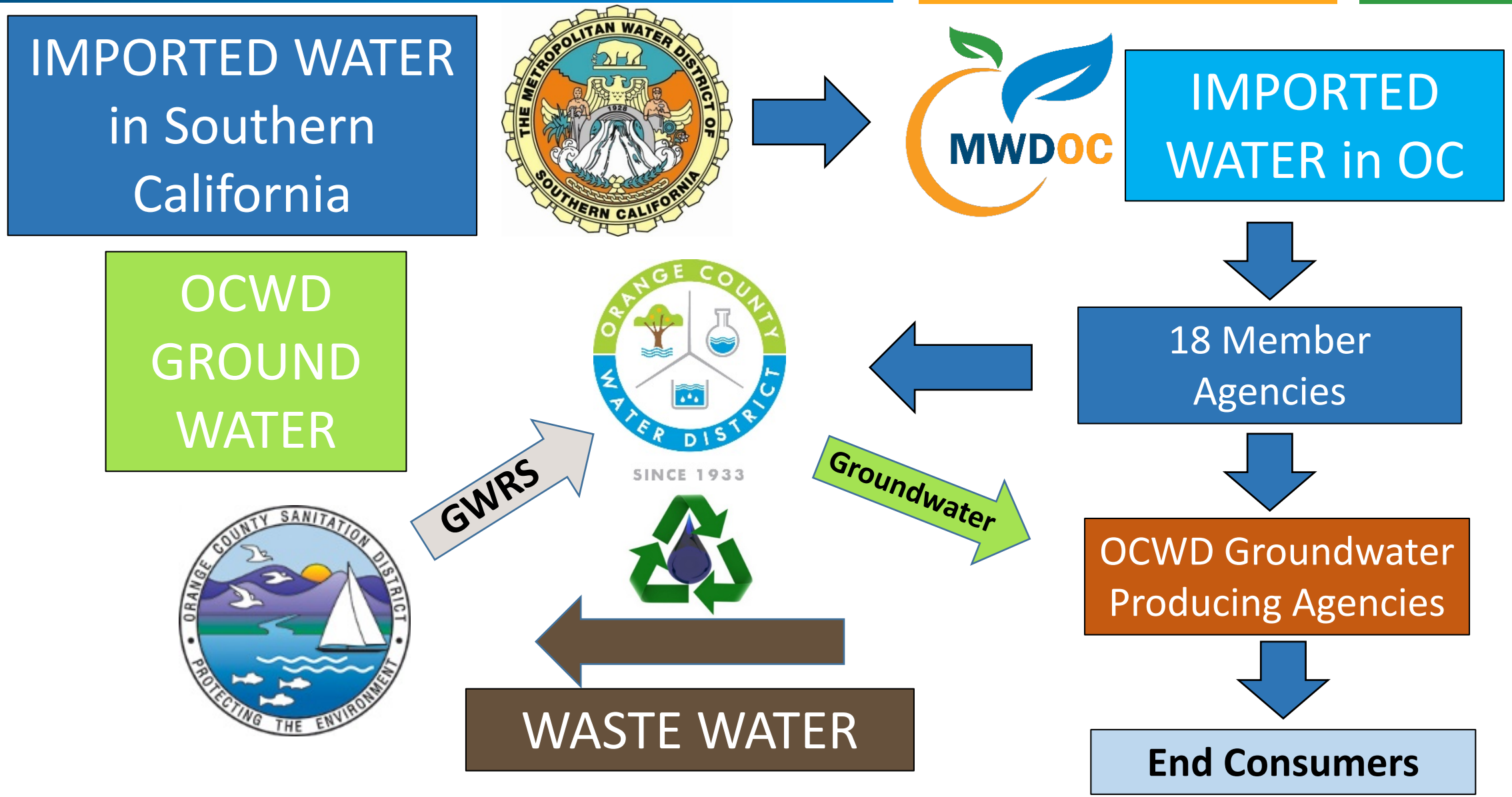
Orange County Water Flows (OC Basin)



Orange County Water Flows (South Orange County + Brea & La Habra)

IMPORTED WATER in Southern California

MWDOC

IMPORTED WATER in OC

Local Supplies including Recycled Water

10 Member Agencies

End Consumers

Alternative Definitions of "Need" for a Water Supply Project

1. Regional Board Finding – need is demonstrated by inclusion of the Poseidon Project in MWDOC's UWMP and other documents; definition developed during the Ocean Plan Amendment process in 2015; we believe it was intended as a low threshold.
2. California Coastal Commission January 21, 2020 letter to the Regional Board – definition included therein supplants the authority and responsibility of water agencies to develop new supplies beyond those specifically listed in the UWMP. MWDOC does not support such a definition.
3. OCWD Definition – reduced reliance on imported water – a substitution of one water supply for another water supply to improve reliability. Not recognized in CCC letter. Water agencies are authorized and obligated to provide reliable supplies to their customers.

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Alternative Definitions of "Need" for a Water Supply Project (continued)

4. Conventional definition – requiring something because it is essential.
5. MWDOC Reliability Study –
   a. Need for additional supplies to reduce the frequency and severity of water shortage allocation events (drought related).
   b. Need for emergency supplies to meet emergency needs typically due to facility outages from earthquakes or other events.
6. Other

No matter what definition is used by the SARWQCB, litigation is likely

MWDOC

Urban Water Management Plans

- A State-mandated document for water agencies with more than 3,000 end-users or who provide more than 3,000 AF per year in wholesale water.
- Water Code 10631 requires that the contents of the UWMP describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- MWDOC's 2015 UWMP:
  - Annual use of water will increase by 16,305 AF of water per year; there will be significant variations around this estimate based on the economy and climate
  - The future supply of water will be both increased and decreased based on the changing yield of existing and new projects over time.
  - Concluded that additional water supply projects will be necessary in Orange County and that the Huntington Beach Desalination Project is only one of several projects that can meet that need - the 2018 OC Reliability Study came to a similar conclusion.

MWDOC

MWDOC Comments on Urban Water Management Plans

- Provides a Framework for long-term planning to inform the public of a supplier's plans for long-term resource planning to ensure adequate supplies to meet existing and future demands.
  - UWMP's are not specific plans but are an indication of what might transpire in the future; a snapshot every five years
  - UWMP's are completed because they are mandated – they generally do not serve as the strategic plans evaluating existing and new sources of supply
  - MWDOC's opinion is that it is not of great relevance whether a project is included in an UWMP plan or not
  - Other documents and decisions at the local level typically control whether or not a water supply project is implemented
    - Plans for new water supplies typically start at the conceptual level and develop into specific plans or stop, as conditions warrant
    - Plans can change as projects and conditions change

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Discretionary Management Plans

- MWDOC's Reliability Studies – to be discussed further
- OCWD Groundwater Management Plan – references the Poseidon Project
- OCWD's Long Term Facilities Plan – references the Poseidon Project
- Sustainable Groundwater Management Act (SGMA) Basin 8-1 Alternative (OCWD) – references 53,000 AF of desalinated ocean water as a future supply

Plans turn into reality through detailed feasibility work and a final Go-No Go decision by the governing Board(s) or Council(s)

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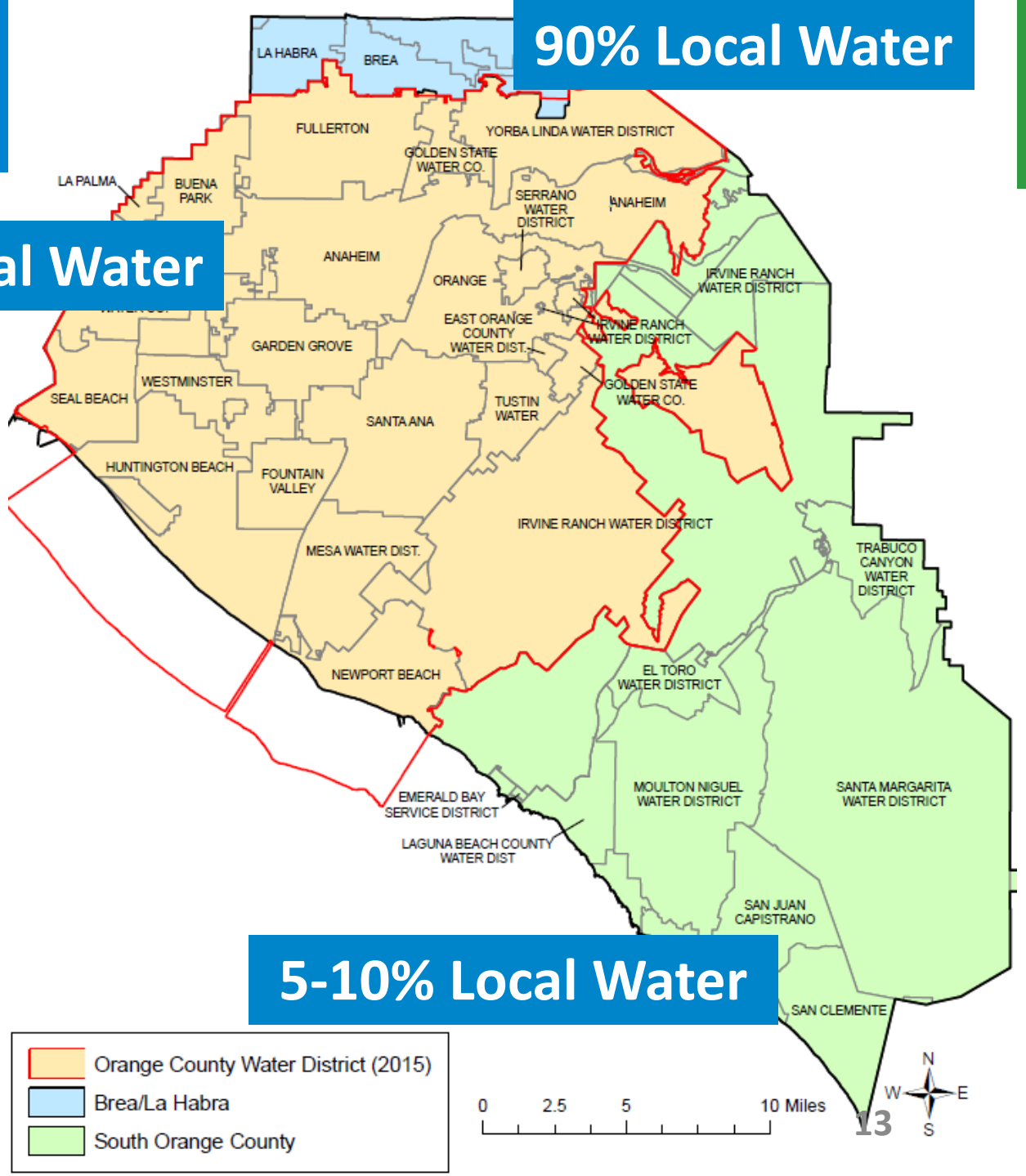
Alternative Project Evaluations and Ranking

- The Reliability Study divided the County into three service areas based on the level of local supplies
- Supply and emergency needs were analyzed in each of the three areas



Alternative Project Evaluations and Ranking

- **Correct the Record:** MWDOC did NOT rank the Poseidon Project within the OC Basin – OCWD requested us not to do so and we complied. The study assumed Poseidon water would flow to both north and south Orange County and the portion flowing to South Orange County was ranked against other projects serving South Orange County.
- Other Projects within OCWD were listed; these projects have the ability to fill the shortage need identified by the Reliability Study.

MWDOC suggested these projects had the ability to meet the future needs within OCWD along with demand curtailment during severe droughts.

Potential Local Projects for the OC Basin NOT included in the Modeling	
Project	Amount (AFY)
CADIZ for OCWD supplies	5,000 to 10,000
West Orange County Well Field	3,000 to 6,000
Prado Dam Operations to 505' year-round	~7,000
Purchasing Upper SAR Watershed Supplies	?
Silting up of Prado Dam (loss of storage)	?
GWRS RO Brine Recovery	5,000 to 10,000
Purchase Land for Additional Replenishment Basins	?
SARCCUP – dry year yield	12,000

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Objectives for 2018 OC Study

1) Provide unbiased, factual analysis of projects and the benefits they provide for decision-making purposes.

2) Intent for information to be used by a broad audience to form fact-based policies and make informed decisions – the goal was not to dictate decisions, as every city and water agency has the authority and responsibility to make their own decisions.

3) Evaluate needs for both droughts and emergency situations (earthquakes).

NOT DICTATING MEMBER AGENCY DECISIONS

MWDOC

2018 OC Reliability Study Findings:

OCWD Basin:

1) The study indicated only a small supply reliability gap for the OC Basin, 0 to 22,000 AF out to 2050. It was recommended that OCWD evaluate all available supply options before they move forward with future investments.

2) MET's Carson Potable Reuse Project may be the next least-cost supply available to the OC Basin, pending the final terms and conditions. MWDOC and OCWD should work together to fully evaluate the opportunities this project provides to the OC Basin.

3) OCWD is pursuing the Santa Ana River Conservation & Conjunctive Use Project (SARCCUP) which could provide significant benefits in the form of extraordinary supplies (drought protection) for the OC Basin. If not fully needed by the OC Basin, the utilization of the supplies by others in OC should be evaluated. MWDOC and OCWD should work together on this effort.

4) The study indicated minimal system (emergency) supply needs for the OC Basin, but recommends that all retail agencies review their needs for backup generators for emergency response throughout Orange County.

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2018 OC Reliability Study Findings:

Brea/La Habra:

1) The potential supply shortages identified were deemed small enough to be managed by enhanced groundwater management or additional conservation.

2) The study recommends that all retail agencies review their needs for backup generators for emergency response throughout Orange County.

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2018 OC Reliability Study Findings:

South Orange County:

1) The study indicated that the San Juan Watershed Project and the Doheny Project both provide cost-effective annual supplies and emergency supplies. These two projects should make up the core reliability improvement strategy for SOC, and should be augmented by other projects evaluated in this study.

2) Additional study is recommended to determine the appropriate timing and sizing of phases of the Doheny and San Juan Watershed Projects, to better understand system integration issues with water quality and stranding of assets, operational issues during winter months and operational issues to enable water to be moved through various pipelines in SOC to deal with emergency situations.

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Changed Conditions to 2018 Study

1) Although the 2018 Reliability Study was the most comprehensive study ever for Orange County, studies become dated once new information becomes available.

   A. MET now has over 3.3 MAF in dry-year storage, the most in their history. In 2016, MET had only 1.3 MAF in dry-year supplies.

   B. Demands have remained low coming out of the 2012 to 2016 drought.

   C. The WaterFix is now called the Delta Conveyance Project and is at least 3 to 5 years behind where it was in 2018.

   D. MET is proceeding with the CEQA work on the Carson Water Reuse Project to produce up to 150 mgd (the MET Board has not yet approved the project)

Adaptive Management is a key aspect in decision-making

MWDOC

Role of Water Agencies

1) Water investment decisions should remain vested with the water agencies – this is their main charge.
2) Water agencies have the responsibility to the public they serve to complete the planning, implementation and operation of projects in the way they deem appropriate for their constituents.
3) Water agencies are held accountable for these decisions by their ratepayers.
4) Making investment decisions is not necessarily easy, but is a core responsibility of water agencies.

MWDOC

Questions???

Table 4-2. Summary of Maximum Water Supply Needs for OC Basin

Scenario	2030 Max Supply Need (AFY)	2040 Max Supply Need (AFY)	2050 Max Supply Need (AFY)	Max Supply Need Over Entire Period (AFY)	Assumed 10% Demand Curtailment (AFY)	Remaining Supply Need (AFY)
1 A) Minimal Climate Impacts with Low-Cost MET Investments	56,000	35,000	41,000	56,000	40,000	16,000
1 B) Minimal Climate Impacts with High-Cost MET Investments	22,000	0	5,000	22,000	40,000	0
2 A) Significant Climate Impacts with Low-Cost MET Investments	62,000	62,000	62,000	62,000	40,000	22,000
2 B) Significant Climate Impacts with High-Cost MET Investments	56,000	28,000	39,000	56,000	40,000	16,000
					Average of Four Scenarios	**13,500**
				Range of Four Scenarios after Demand Curtailment: 0 to 22,000 AFY		

MWDOC

Shortage Curves for the OC Basin for 2050

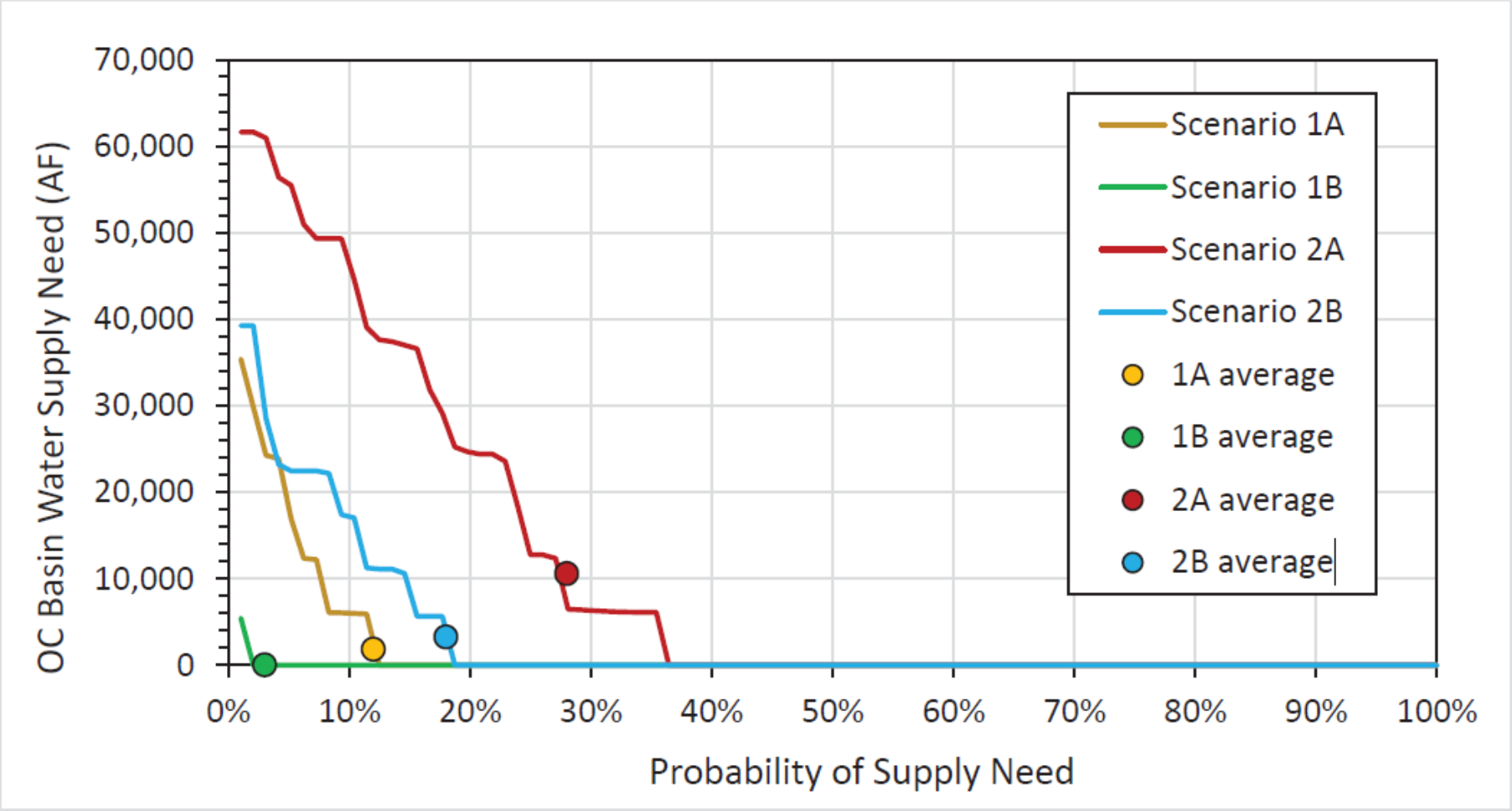

Figure 4-6. Projected Water Supply Need for OC Basin in Year 2050

Meeting the Reliability Needs of the OC Basin in 2050

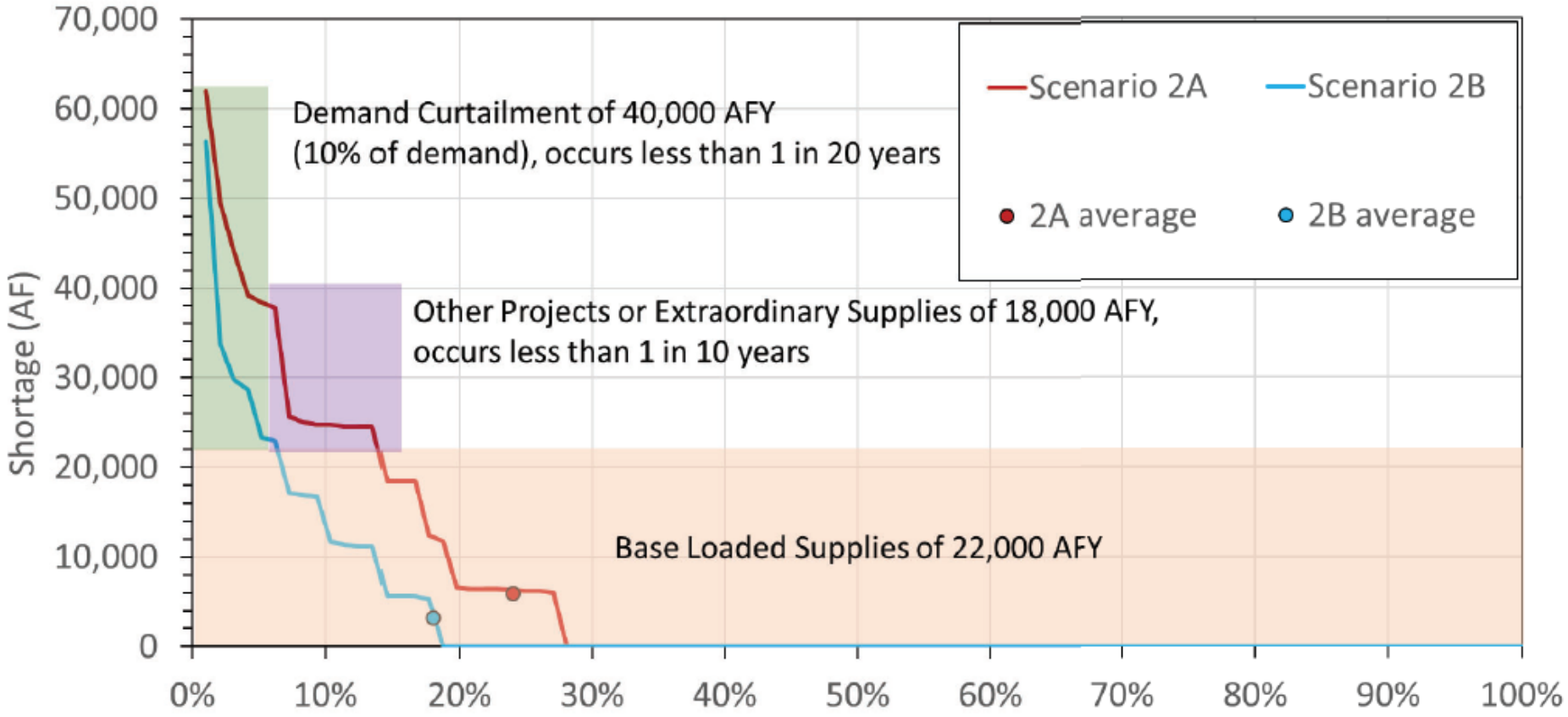

Figure 6-5. Concept for Meeting Water Supply Needs in OC Basin Under Scenarios 2A and 2B

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Ranking of SOC Local Projects for System Reliability

Project	Max Capacity (MGD)	EM [2] 1A	EM 1B	EM 2A	EM 2B	Average EM	Project Ranking [3]
Doheny Local (SCWD)	4.75	-$5.9	-$2.8	-$5.6	-$1.0	-$3.8	**4**
Doheny Regional	9.50	-$3.0	**$0.3**	-$2.7	**$2.3**	-$0.8	**1**
San Juan Watershed Project	8.50	-$5.1	-$2.3	-$4.9	-$0.6	-$3.2	**3**
Poseidon SOC	14.25	-$10.3	-$7.0	-$10.0	-$5.0	-$8.1	**5**
Emergency Groundwater [1]	9.70	-$2.3	-$2.3	-$2.3	-$2.4	-$2.3	**2**

1) This project is scalable to fill remaining system reliability need.
2) Represents avoided discounted MET water purchases for different water rate scenarios LESS discounted project costs, DIVIDED by emergency capacity (MGD) = $/MGD. Positive numbers indicate that project is cheaper than purchasing MET water over the life of project. Negative numbers indicate that project is more expensive than purchasing MET water.
3) Ranking is based on average EM between four scenarios, converted to a rank score from 1 (best) to 5 (worst).

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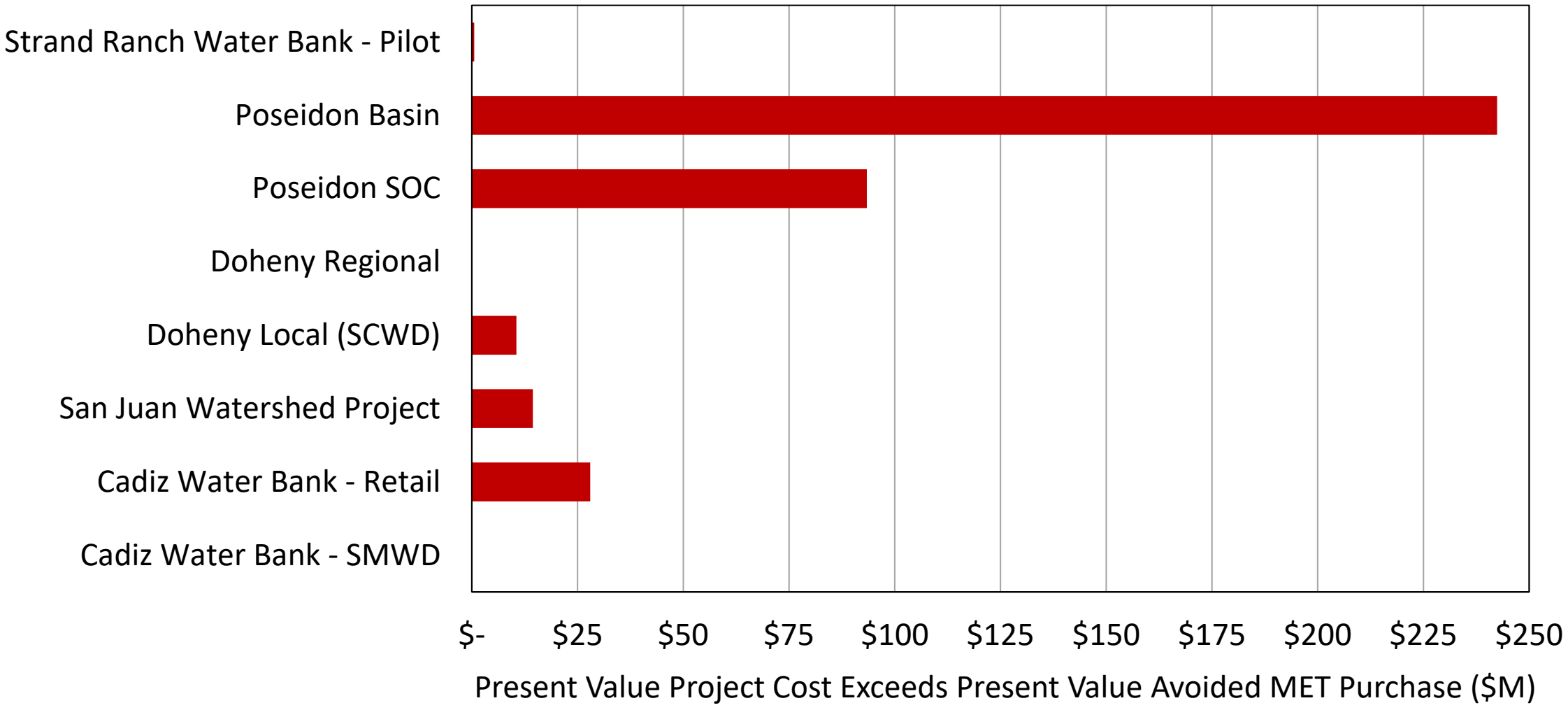
OC Projects Supply Economic Ranking:

NPV = Net Present Value
EM = Evaluation Metric

Project	Scenario 1A		Scenario 1B		Scenario 2A		Scenario 2B		Average
	NPV	EM	NPV	EM	NPV	EM	NPV	EM	
	Rank								
Cadiz Water Transfer – SMWD	1	1	2	1	2	3	2	3	**1.9**
Cadiz Water Transfer – Additional	6	6	6	5	6	6	6	6	**5.9**
San Juan Watershed Project	5	3	5	3	3	5	3	5	**4.0**
Doheny Local (SCWD)	4	4	4	4	4	4	4	4	**4.0**
Doheny Regional	3	2	1	2	1	2	1	2	**1.8**
Poseidon SOC	7	7	7	6	7	7	7	7	**6.9**
Poseidon OC Basin	8	8	8	7	8	8	8	8	**7.9**
Strand Ranch Water Bank – Pilot	2	5	3	8	5	1	5	1	**3.8**

Potential Downside Financial Risk for Supplies

Local investment is made, but supply reliability turns out to be good (Scenario 1B)