



Charting Local Waters:

San Dieguito Groundwater Study

An OMWD Sustainable Supplies Project

Presented by: OMWD Project Team

September 7, 2023





Agenda

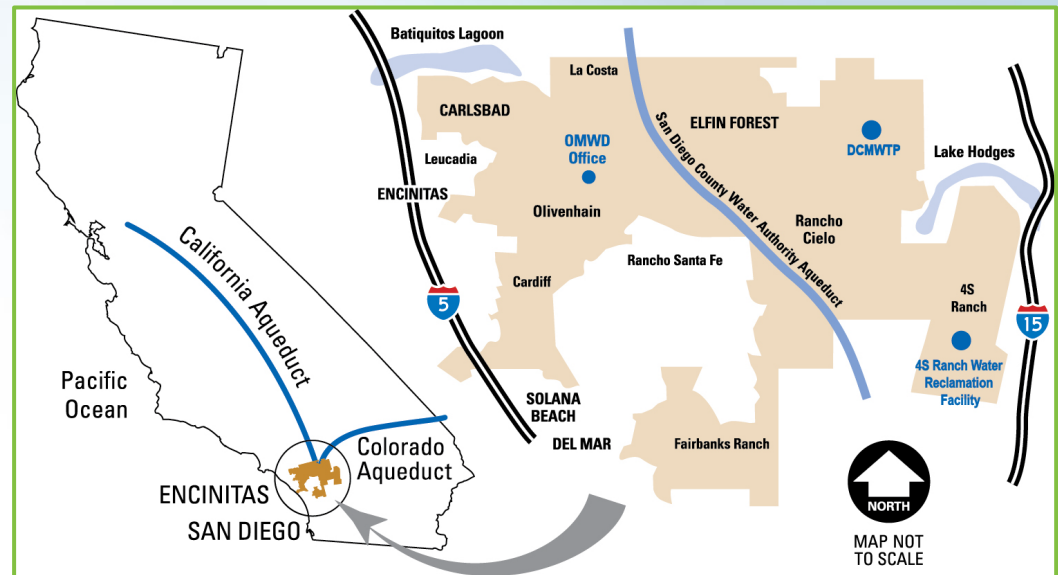
- About OMWD
- San Dieguito Project Background
- Hydrogeologic Update
- Economic Analysis
- Next Steps
- Questions





Olivenhain Municipal Water District

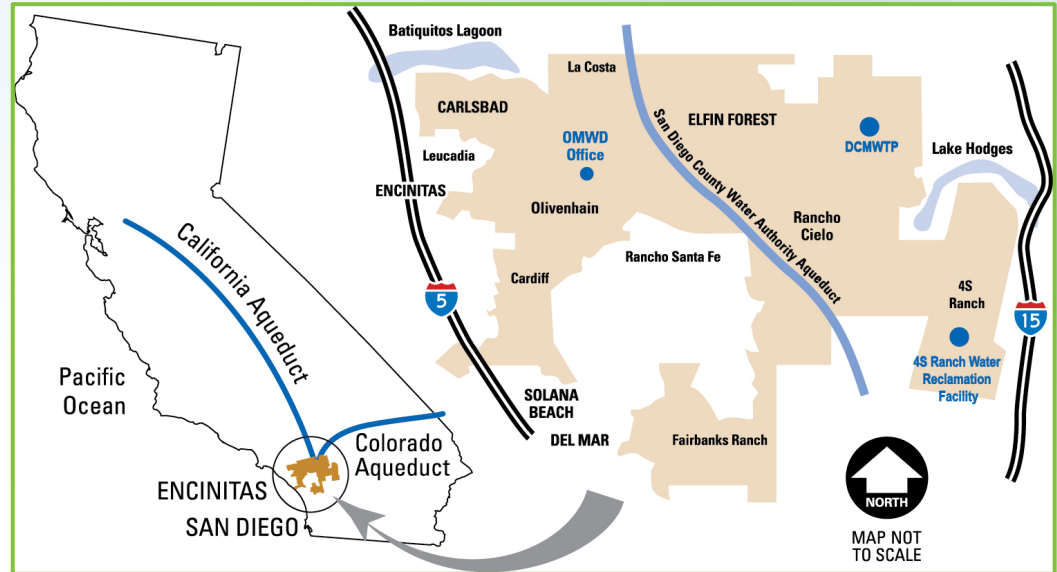
- Potable water
- Wastewater treatment
- Recycled water
- Parks & recreation
- Hydroelectricity





Olivenhain Municipal Water District

- Incorporated in 1959
- 48-square-mile service area
- Over 87,000 customers
- 90% built out
- 466 miles of potable pipeline
- 67 miles of recycled water pipeline
- 17 reservoirs provide a total storage capacity of 80 million gallons
- Deliver over 18 million gallons to customers daily





State of Water in California

- California's "3 Seasons"
 - Fire
 - Flood
 - Drought
- OMWD reliant on imported water
- Imported water increasingly expensive
- Imported water more vulnerable
- OMWD goal- 1/3 local supply
- Groundwater
 - Drought-resilient
 - Reliable
 - Cost-competitive
 - Local control
- OMWD 1 of 7 SD water agencies without local potable supplies





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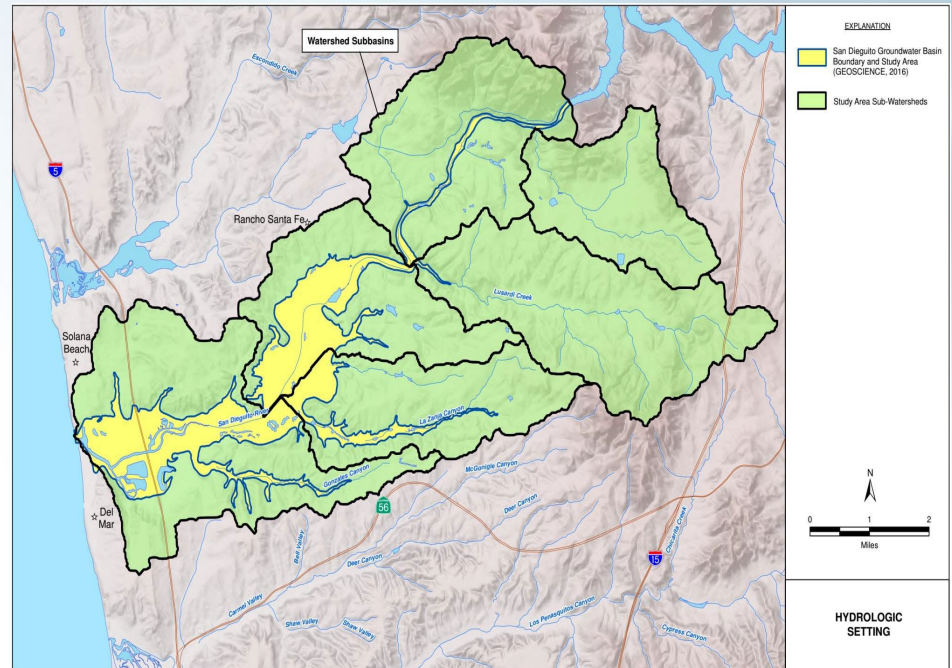
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Project Background (2008-2016)

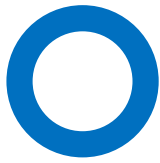
- 2008 board direction - brackish groundwater, rather than Carlsbad Desalination
- 2010 Opportunities & Constraints
 - San Elijo GW
 - San Dieguito GW
- 2012 San Elijo - potentially feasible (USBR funding)
- 2014 San Dieguito- potentially feasible (DWR funding)





Project Timeline

Opportunities & constraints analysis



2010-2013

San Dieguito Valley feasibility study



2014-2017

Test well construction



2018-2019

Long term pump test



2019-2020

GW model update, regulatory strategy, cost analysis



2021-2022

EIR, SGMA, permitting



2022-2023





Study Area

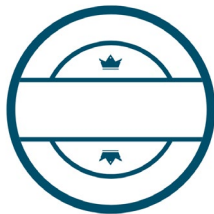




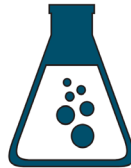
2017 DWR San Dieguito Feasibility Study



Examined
amount of
groundwater
available



Assessed
water quality



Evaluated
treatment
options



Conceptual
Facility
Planning



Developed
cost estimate



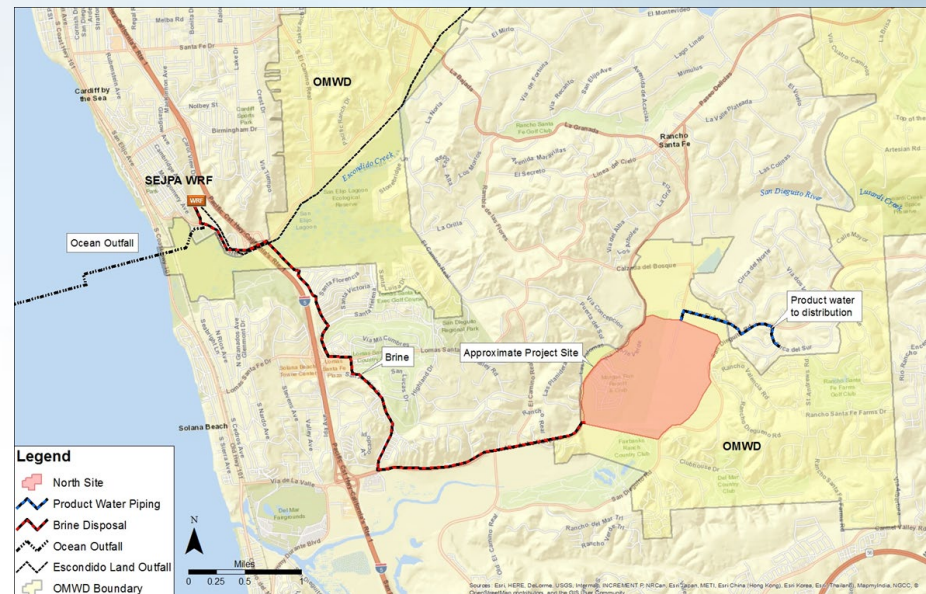
Compared cost
to other
options





2017 DWR San Dieguito Feasibility Study Findings

- Project feasible and sustainable at 1 MGD, or more
- Cost-competitive with imported water, less than desalinated seawater
- North Valley wellfield preferred, Not influenced by surface water
- Meet state and federal drinking water regulations
- Brine disposal via SEJPA ocean outfall, RWQCB preference





2021 Long-Term Pumping Test



- Briefed OMWD board and stakeholders April 2021
- Confirmed feasibility study results
- Minor impacts to basin storage
- Impacts to local wells—mitigable





Summary of Environmental Constraints

- Clear path forward for environmental compliance and permitting
 - Standard suite of environmental studies and permits will be needed
- Difficulty of path depends on size and location of project
 - Proximity to San Dieguito River and its habitats will affect environmental requirements
- Next steps:
 - Siting study to define site alternatives
 - Begin CEQA compliance
 - Precursor to most permit submittals





Summary of Regulatory Strategy

- Clear path forward for regulatory compliance and permitting
 - No insurmountable regulatory hurdles – have identified well siting and treatment design considerations
- Next steps:
 - Siting study with hydrogeologic evaluation to determine:
 - *Optimum location of extraction sites.* Should be selected to provide highest well capacity
 - *Estimate time of travel for effects on shallow aquifer.* Consider distance of well setback from river to avoid classification of wells as GWUDI





Economic Findings & Recommendations



1. Non-Cost Factors: The project provides improved supply reliability, environmental sustainability, and local control



2. Cost Factors: With reasonable assumptions, the project is significantly less costly than the No Project alternative over a 30 period of analysis



3. Next Steps: The Non-Cost and Cost findings support advancing the project to final planning and agency coordination (SGMA et. al.)





Funding Awarded to Date

Year	Agency	Program	Project Phase	Amount
2018	MWD	Future Supply Action	Iron and Manganese Removal Pilot Testing	\$175,000
2017	DWR	Water Desalination Grants Program Round 4	Pilot Test Well	\$650,000
2014	DWR	Water Desalination Grants Program Round 3	San Dieguito Feasibility Study	\$250,000
2012	USBR	WaterSMART (Title XVI)	San Elijo Feasibility Study	\$150,000
2010	DWR	Prop 84/IRWM Round 1	Initial Feasibility Study	\$145,000





Funding Opportunities

- Pursuing Various grant and low-interest loan opportunities
 - Federal
 - State
 - Local





Exploring Potential Partnerships

- Santa Fe ID
- City of San Diego
- City of Del Mar
- Community Services Districts
- Private Entities – Water Supply





Community Outreach

- RSFFPD (3/16/2017) – Feasibility Study Outreach
- Solana Santa Fe Elementary (10/17/2017 + 12/4/2018) – Community Meeting & Public Workshop
- Del Mar City Council (4/1/2019) – Project Summary
- Whispering Palms CSD (10/8/2019) – Project Summary
- Public Webinar (4/27/2021) – Project Status Update
- Met WD Future Supply Actions Program (10/17/21) – Project Summary
- SD River JPA (3/4/2022) – Project Summary
- OMWD (3/30/2022) – Board of Directors Workshop
- SFID (7/21/2022) – Project Status
- OMWD (5/31/2023) – Board of Directors Workshop





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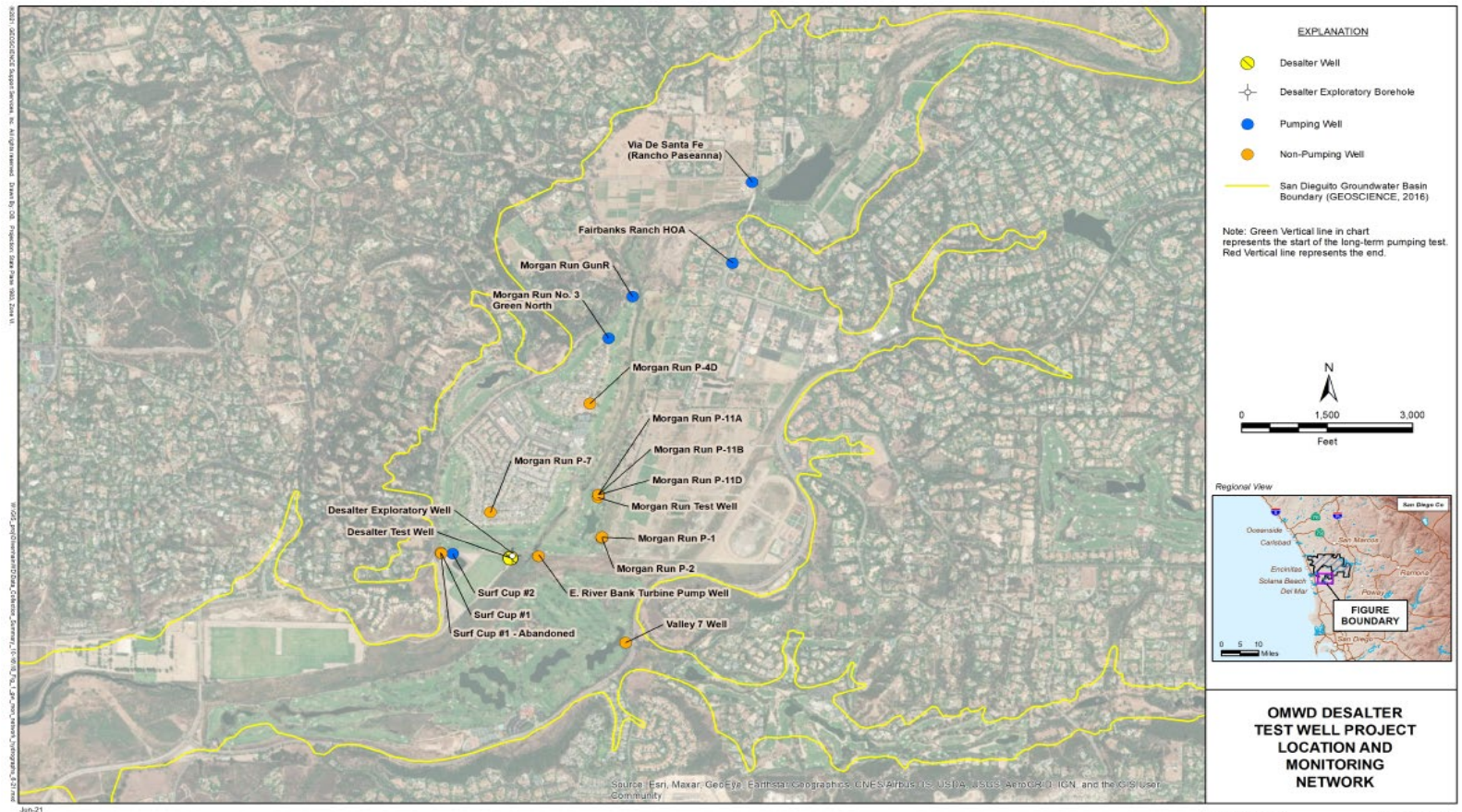
FY 2023 Hydrogeologic Programs

- Continued water level monitoring
- Studies and investigations – optimal well sites
 - Geophysical work completed
- Estimate return flow
 - That portion of imported water supplied by OMWD, SFID, San Diego, and Del Mar to their customers, that flows past the landscape root zone and recharges the groundwater.
 - Agencies have the right to recover.
 - A portion of the project supply.





Groundwater Level and Quality



OLIVENHAIN MUNICIPAL WATER DISTRICT
REPORT OF DESIGN PILOT TESTING FOR THE SAN DIEGUITO VALLEY BRACKISH GROUNDWATER DESALINATION DESIGN PROJECT

DRAFT

FIGURE 1

GEOSCIENCE



OLIVENHAIN
Municipal Water District



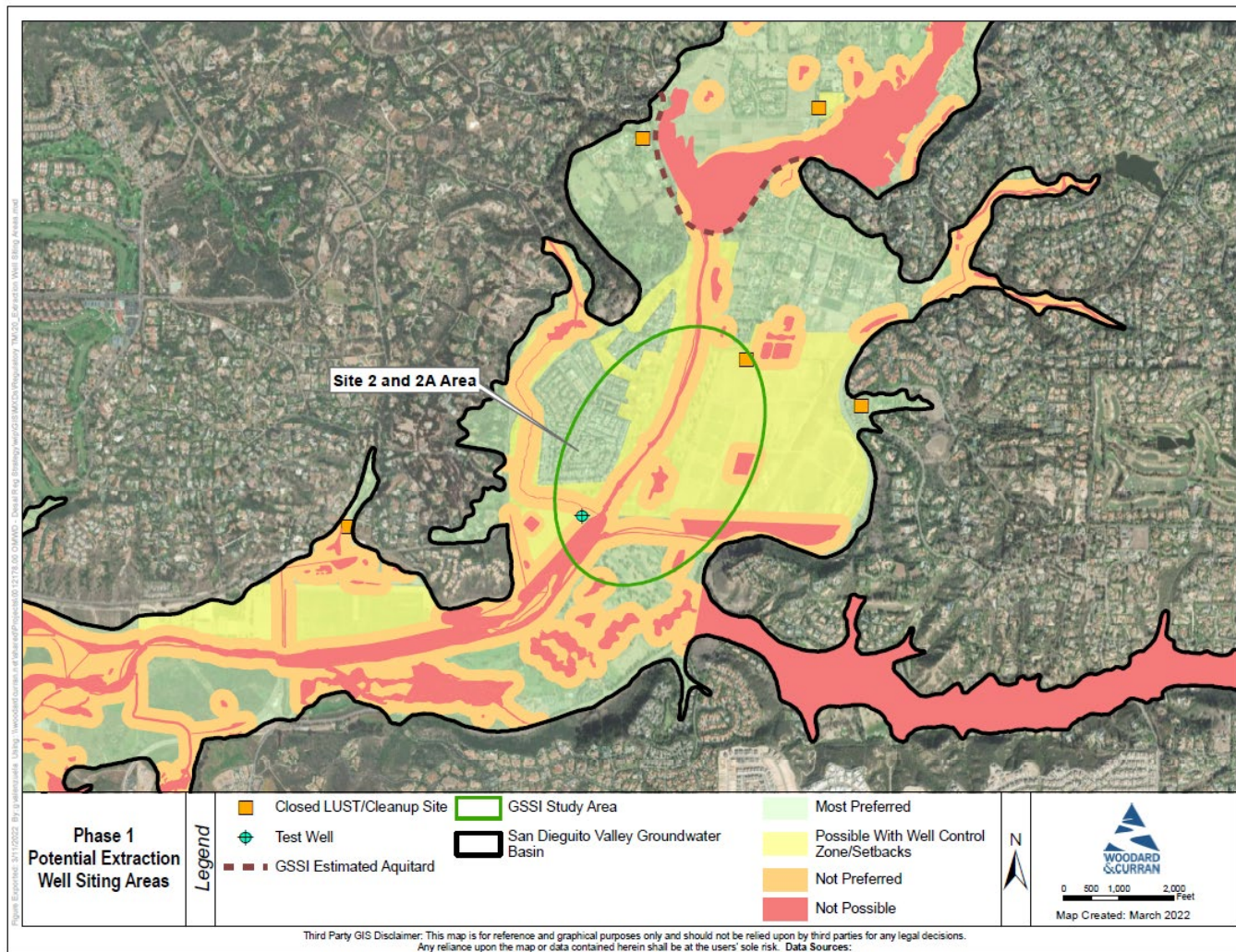
FY 2023 Geophysical Program

- Non-invasive
- Vertical and horizontal extent of the basin
- Seismic reflection
- Sting electrical resistivity tomography



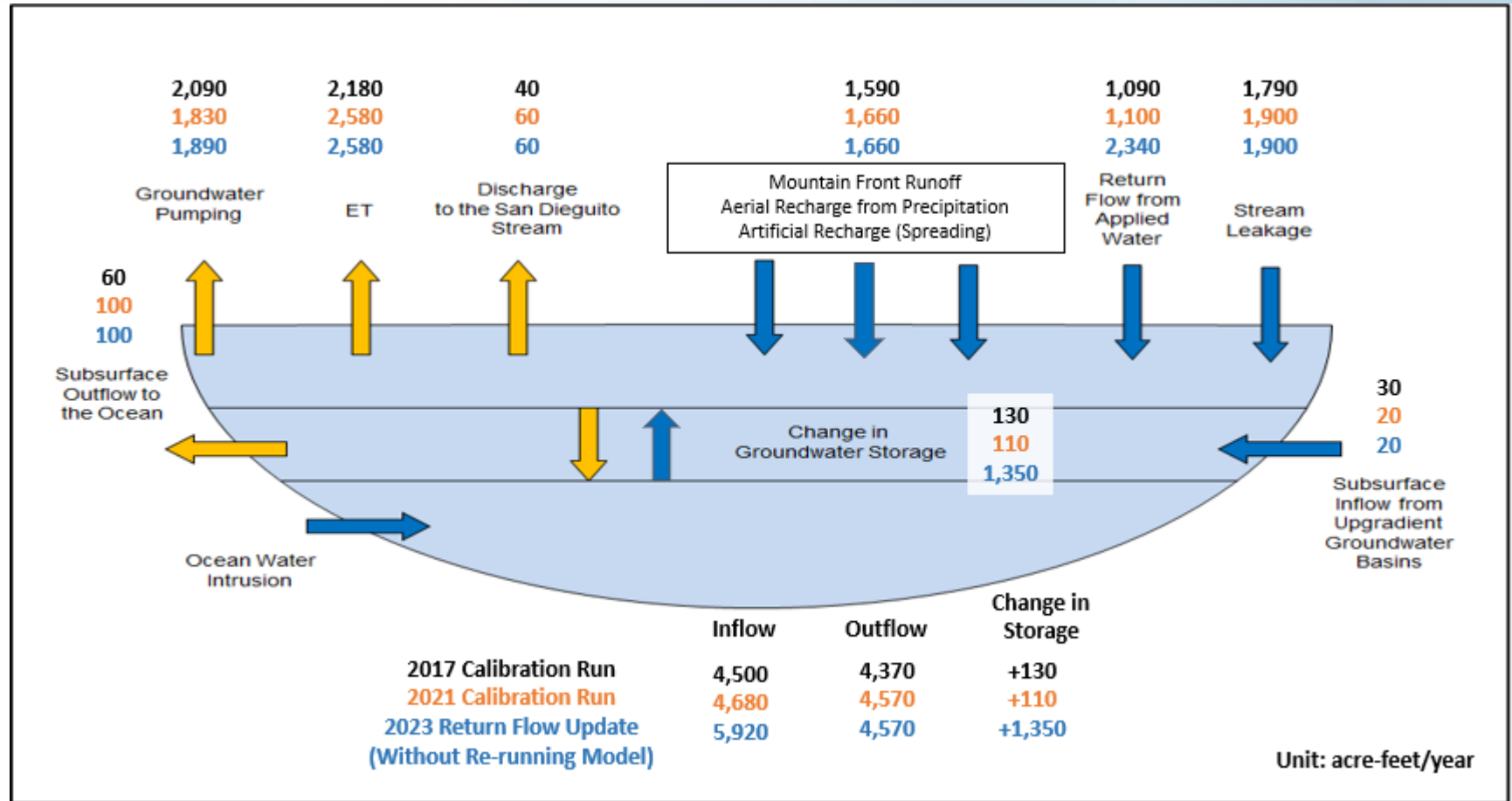


Improved Detail on Geologic Structure, Confirm in 2023-24



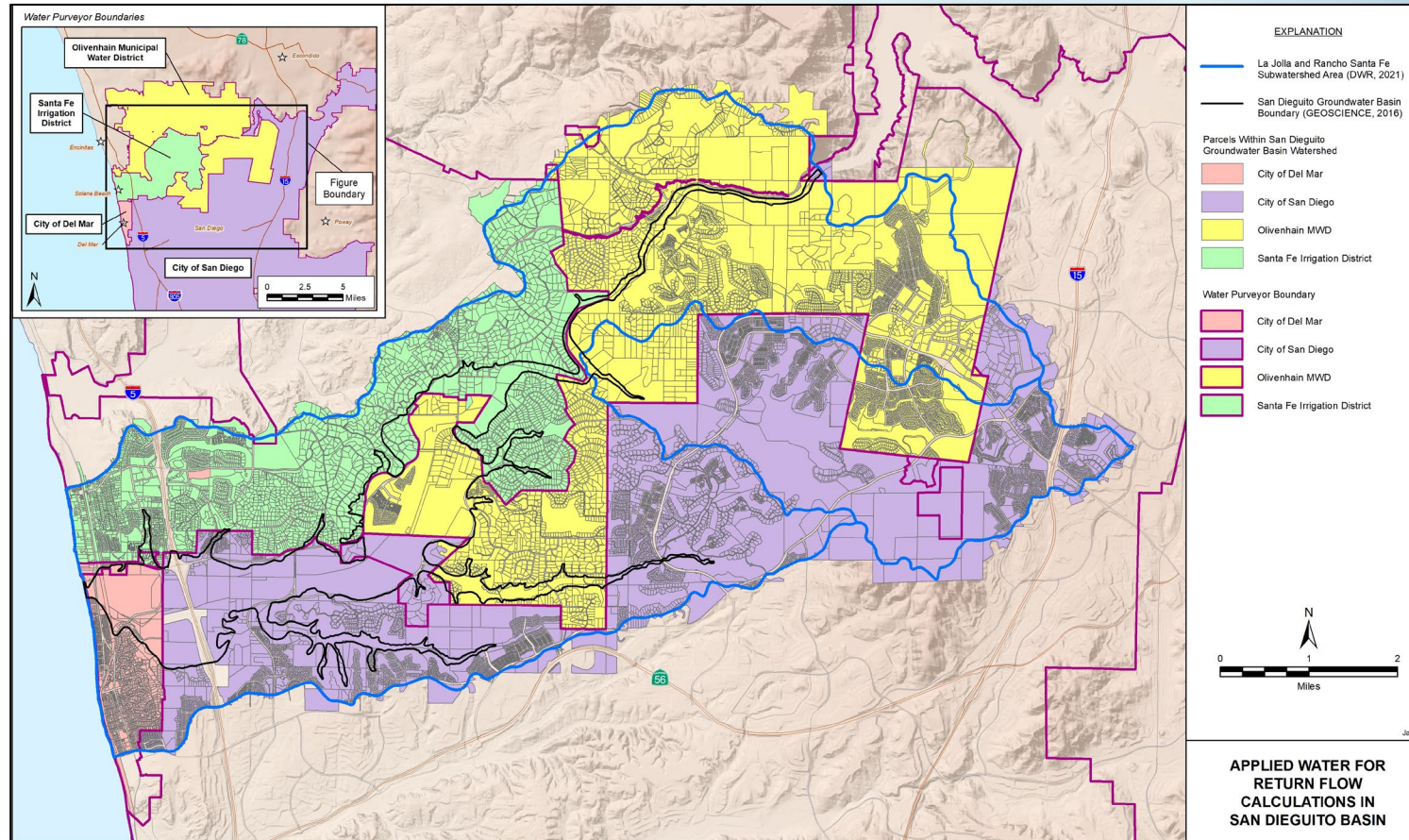


Water Balance Components- Return Flow





Summary of Data Collection – Service Area





Return Flow Calculations

Land Use	OMWD (Jan 2008 - Dec 2021)	City of Del Mar (Jan 2010 - Dec 2020)	SFID (July 2019 - Jun 2021)	City of San Diego	TOTAL
Return Flow (acre-ft/year)					
Agricultural	33	2	31	38	104
Residential	538	40	567	135	1,280
Commercial	105	28	49	83	265
Multi-Family	3	7	25	54	89
Parks/Golf	366	18	132	83	599
TOTAL	1,044	95	804	393	2,337
Average Return Flow Factors (Return Flow / Applied Water)					
	12%	11%	9%	11%	11%

Note: The return flow was calculated based on metered applied water and estimated applied water for unmetered parcels.





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Point of Comparison: Weigh project costs and benefits against those of the No Project alternative

PROJECT vs. NO PROJECT

PROJECT



NO PROJECT





Evaluation Criteria: Consider both cost and non-cost factors

EVALUATION CRITERIA

COST FACTORS (COSTS)

- Water Supply Economy
- Ratepayer Economy
- Supply Diversification (other than SDCWA)

NON-COST FACTORS (BENEFITS)

- Supply Reliability
- Water Quality
- Environmental Sustainability
- Local Control





Results:



1. **Non-Cost Factors:** The project provides improved supply reliability, environmental sustainability, and local control



2. **Cost Factors:** With reasonable assumptions, the project is significantly less costly than the No Project alternative over a 30 period of analysis



3. **Next Steps:** The findings support advancing the project into preliminary design and environmental documentation





Non-Cost Factors: The Project fares very well

CRITERIA	Project vs. No Project
• Supply Reliability	↑
• Water Quality	→
• Local Control	↑ ↑
• Environmental Sustainability	↑
• Reduced Bay-Delta Reliance	↑
• Reduced Colorado River Reliance	↑
• Reduced Energy Footprint / GHG	↑
<u>Legend:</u> Better: ↑ Neutral: → Worse: ↓	





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Plan Moving Forward





Next Steps

Improve Certainty of Supply

- Hydrogeologic analysis
- Risk analysis
- Updated economic and rate impact analysis
- Alternative and preliminary design
- Board workshop spring 2024 (or sooner)
- Community outreach





Project Timeline

Hydrogeologic investigations, alternatives, environmental



2024-2025

Permitting, final design, regulatory approvals



2026

Bidding and award, construction



2027

Construction, startup and commissioning



2028





Q&A

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