While we wait for everyone to join, why did you decide to join tonight's talk about water?

I'm interested in desalination and want to hear what the plan is.

I'm interested in the science behind this project.

To hear about the progress and barriers related to the timeline of possible DESAL especially in costs distribution.

I want to be sure local workers are building the counties projects and keeping local taxes and discretionary dollar's in our own communities

Desalination Executable Solution and Logistics (DESAL) Plan

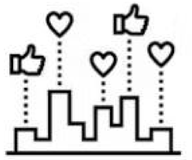
Community Engagement Session - September 15, 2025

www.slocounty.ca.gov/DESAL

Mentimeter

Session Purpose

- Inform and get your input on our region's water resources
- Get your input on ocean desalination
- Share approach to desalination feasibility study and how you can engage



Please note this presentation is being recorded and will be posted at: slocounty.ca.gov/desal

Mentimeter

Tonight's Session Agenda (Approx. 2 hrs.)

- Purpose and how to engage tonight (5 min.)
- History of region's water resources (10 min.)
  - Q&A and Surveys (10 min.)
- Local water resources vulnerabilities/opportunities (10 min.)
- Local partner highlights (6 min.)
  - Q&A and Surveys (10 min.)
- Desalination USBR Feasibility Study (30 min.)
- Next steps (3 min.)
  - Q&A and Surveys (30 min.)

How to Participate in Tonight's Session

We will be engaging you in a few ways tonight

- **Zoom Chat**
- **Zoom Raise Hand Function**
- **Mentimeter engagement**

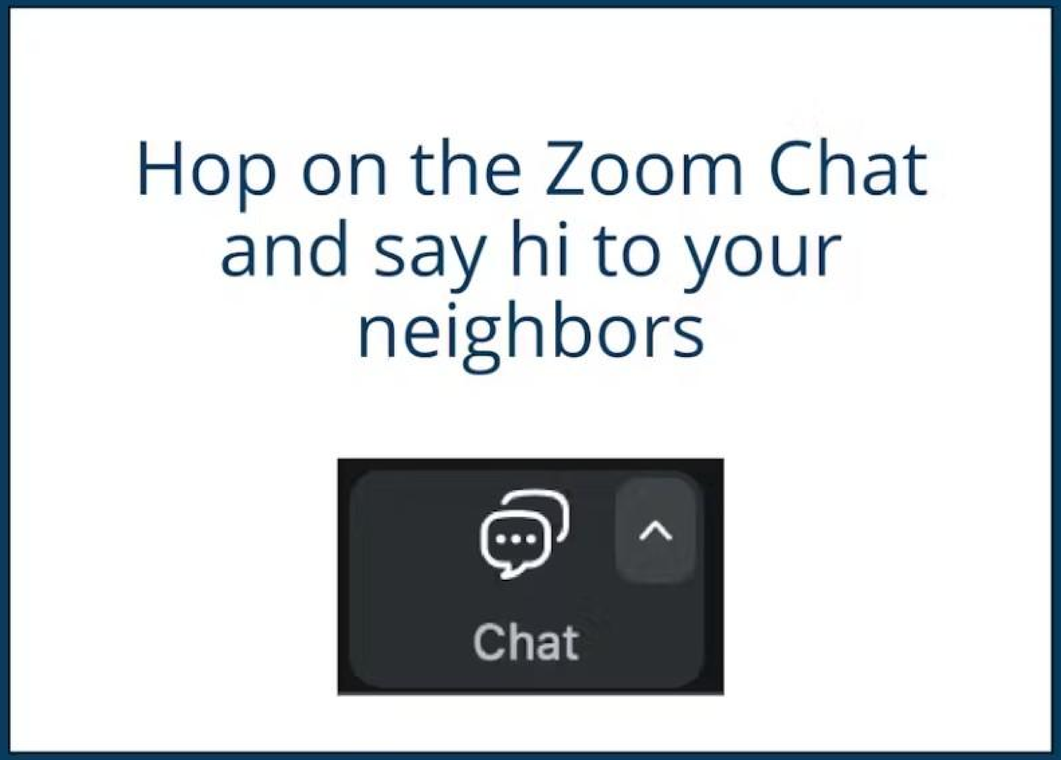
Don't worry, we will give you instructions at each step

**Your Mentimeter responses show up anonymously*

Mentimeter

Your Turn!

- In the chat, say hi to other attendees and include your name and what community you live in.



Mentimeter

Introductions

- **Moderator**:
  - Carolyn Berg, Koble Collaborative
- **Presenters**:
  - Courtney Howard, County of SLO
  - Shawna Scott, City of SLO
  - Bill Robeson, City of AG
  - Ron Munds, Los Osos CSD
  - Mark Zimmer, Golden State Water Co.
  - Lydia Holmes, Carollo Engineers
- ***Technical Team:***
  - *Angela Ford, County of SLO*
  - *Joey Steil, County of SLO*
  - *Anthony Cemo, Carollo Engineers*
  - *Dan Heimel, Confluence Engineering Solutions*
  - *Inge Wiersema, Carollo Engineers*

When you think of water for our region's future, what words come to mind?

Mentimeter

Our Evolving Relationship with Water

- Turn of the Century
  - Distributed electricity
  - Disinfection and community water systems
- 1920s and 30s
  - Submersible pumps
  - Access to more groundwater
- 1940s, 50s and 60s
  - Booming populations
  - Surface storage and distribution

Mentimeter

Our Evolving Relationship with Water

- 1970s and 80s
  - Environmental impacts understood
  - Regulations (including financial) and wastewater treatment improvements
- 1990s to 2000s
  - Increasing water use efficiency technology and practices
  - Recycled water

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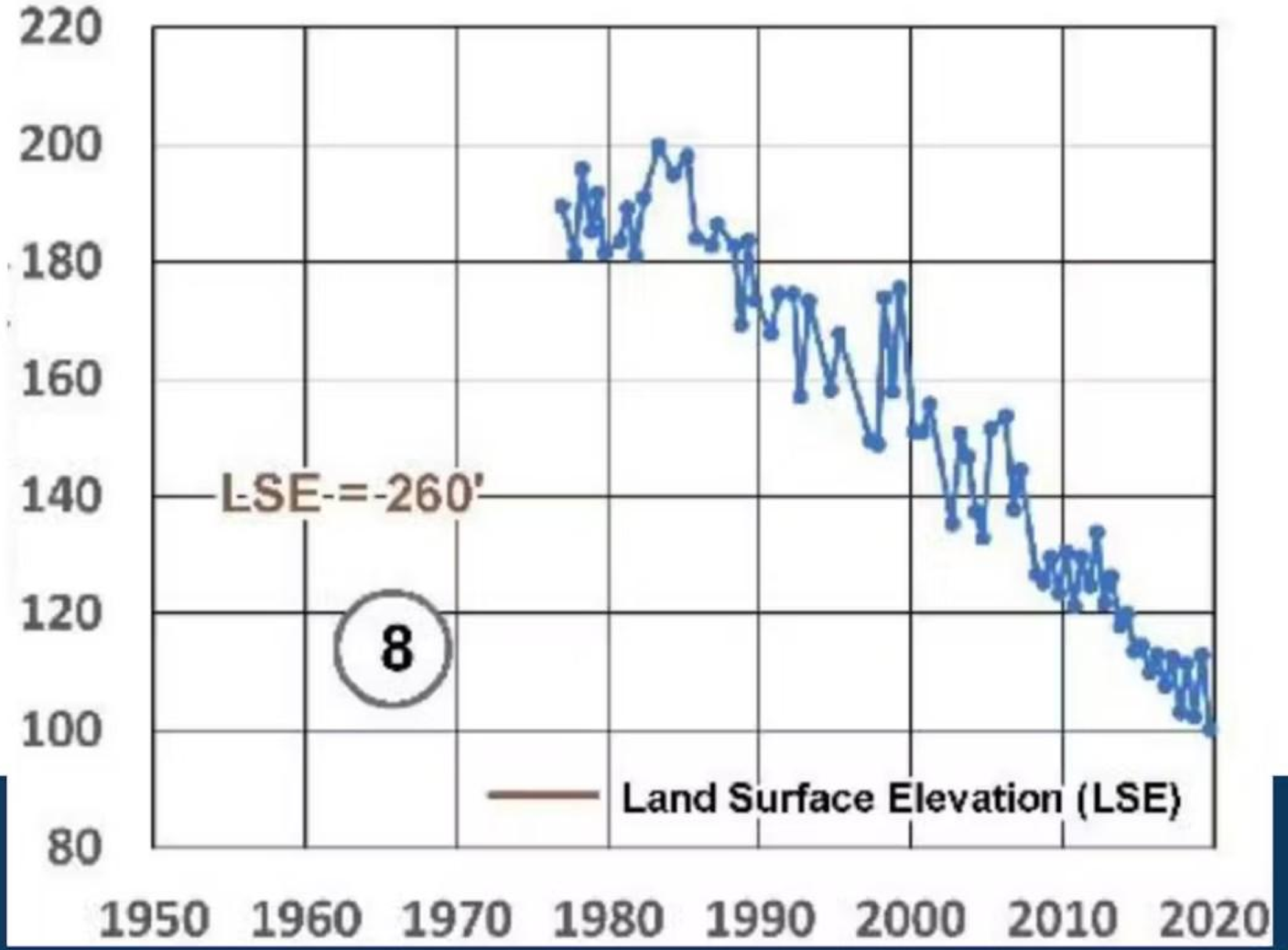
Our Region's Legacy of Building Water Resiliency

- Monitoring conditions
- Planning for the future
- Responding to changes

Mentimeter

Monitoring Conditions – Groundwater



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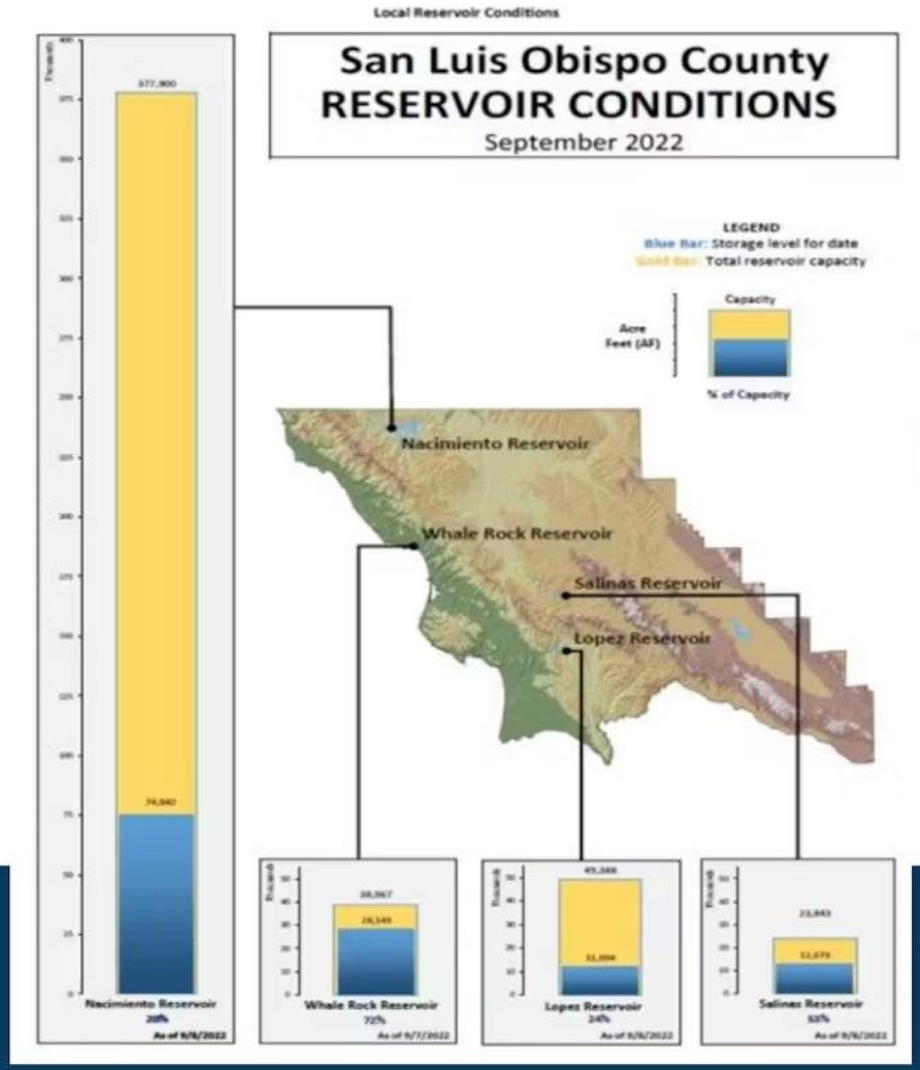
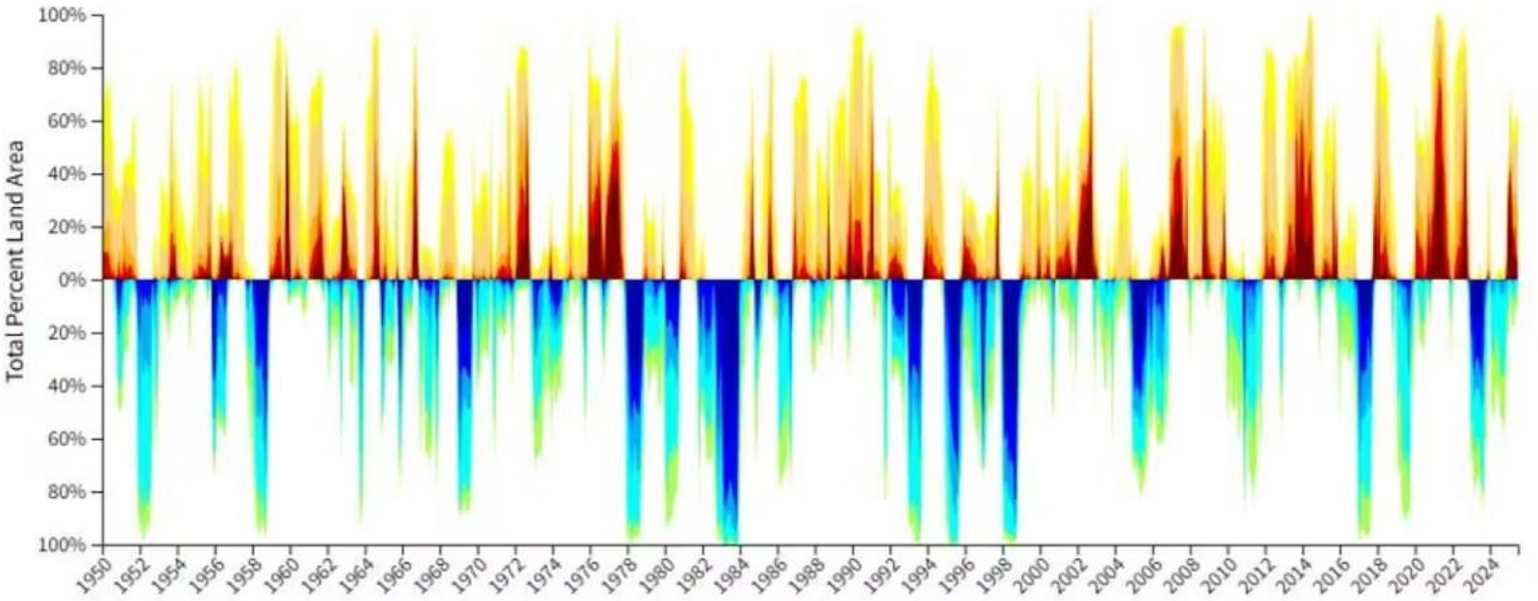
Monitoring Conditions – Drought Cycles





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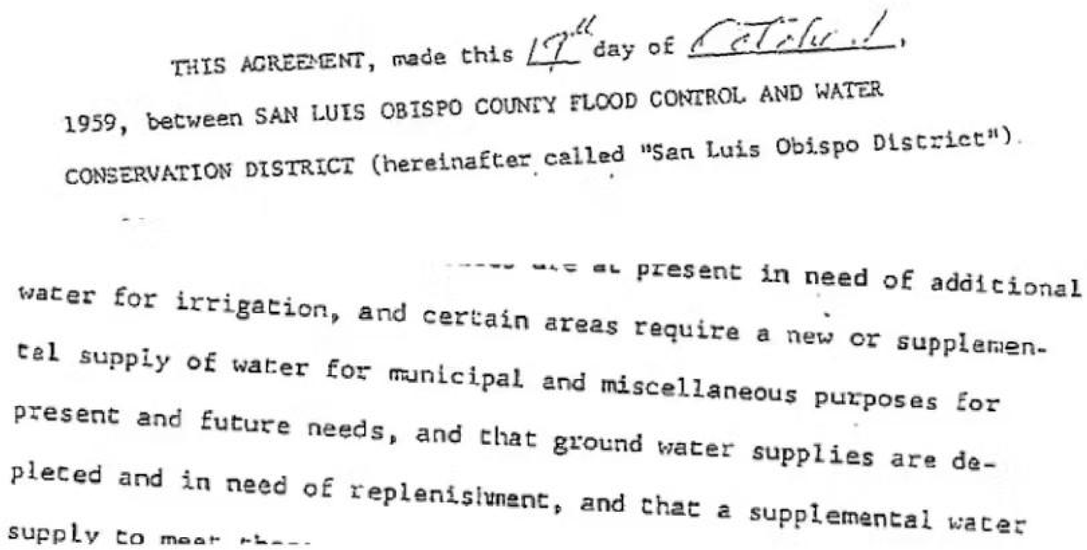
Planning for the Future

- Periodic Evaluations
  - Current and future water needs
  - Conditions of supplies
- Options to address imbalances
  - Water supply enhancement
  - Water use management

Key agreements in the 1950s and 60s secured water that we depend on today.



THIS AGREEMENT, made this 19th day of October,
1959, between SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER
CONSERVATION DISTRICT (hereinafter called "San Luis Obispo District").

[illegible] at present in need of additional water for irrigation, and certain areas require a new or supplemental supply of water for municipal and miscellaneous purposes for present and future needs, and that ground water supplies are depleted and in need of replenishment, and that a supplemental water supply to meet [illegible]

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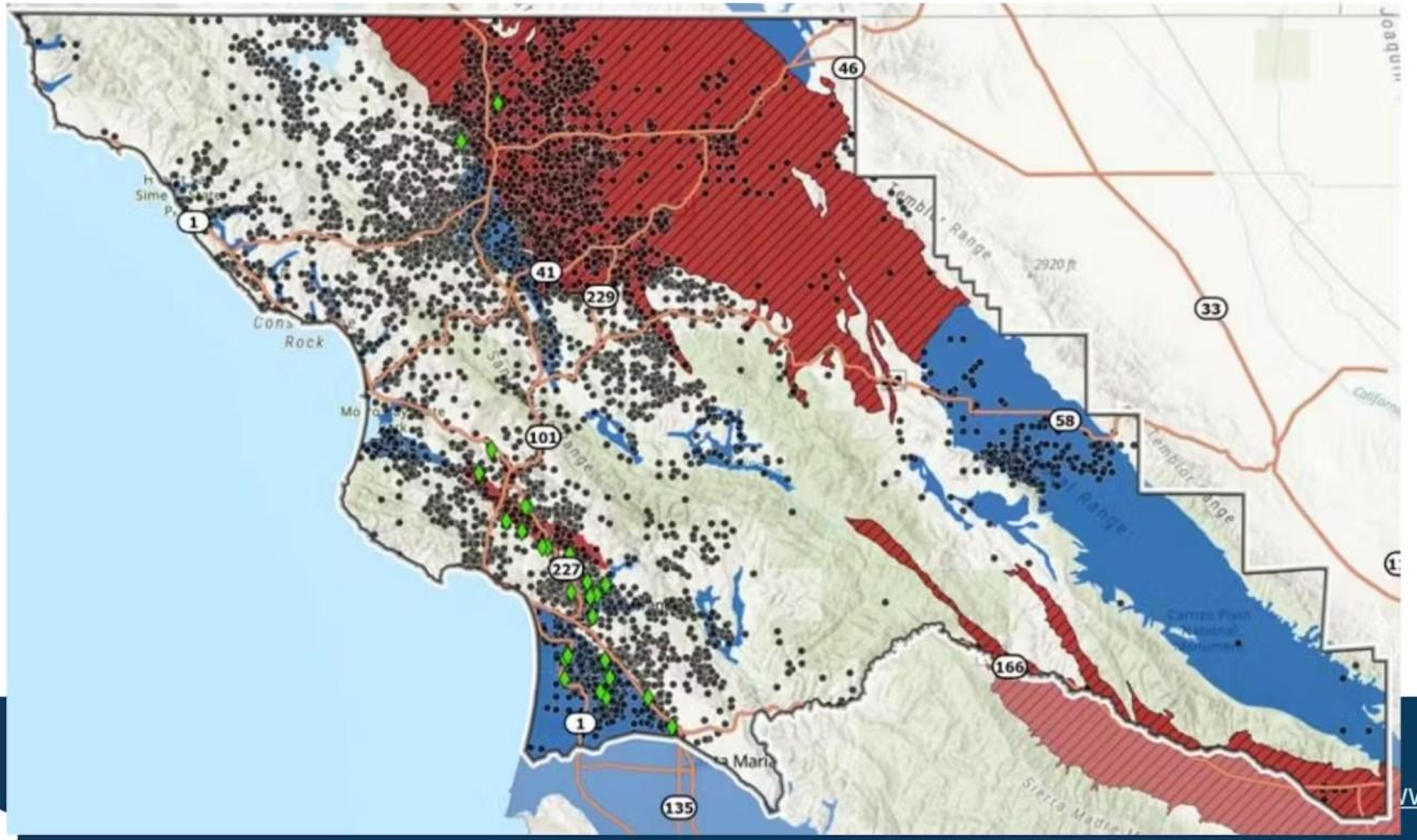
Groundwater is the primary water supply



Mentimeter
Whale Rock Pipeline
Salinas Pipeline
Nacimiento Pipeline
Lopez Pipeline
State Water Project
Groundwater Basins
Nipomo Mesa Management Area
Northern Cities Management Area
Lake Nacimiento
San Miguel
Paso Robles
San Simeon
Cambria
Templeton
Whale Rock Reservoir
Atascadero
Morro Bay
Los Osos
Cal Poly
San Luis Obispo
Santa Margarita Lake
Salinas River
Lopez Lake
Avila Beach
Pismo Beach
Grover Beach
Arroyo Grande
Oceano
Nipomo
Sisquoc River
Water Supply Projects over Time
Salinas
Whale Rock
Lopez System
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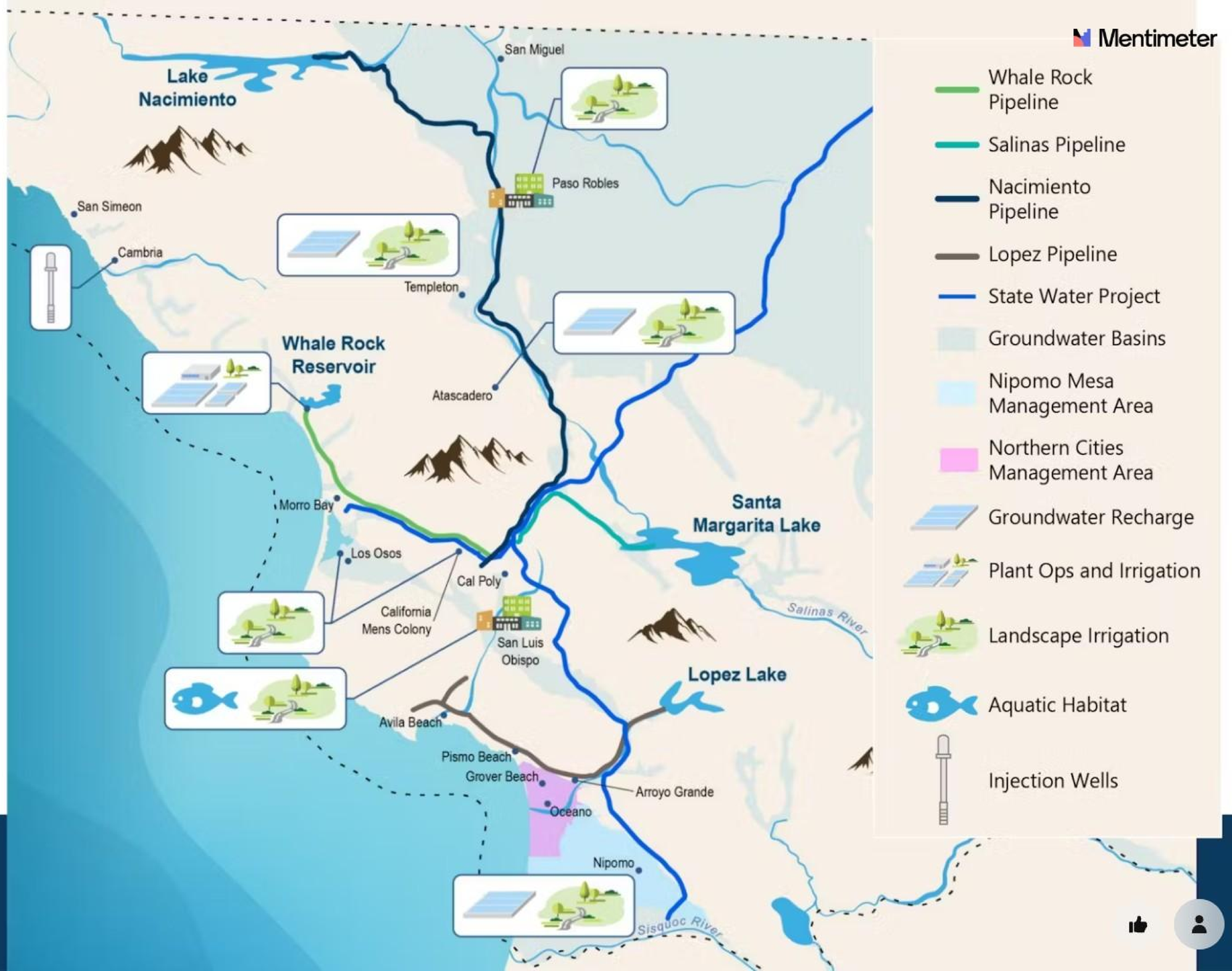
Recycled Water

- Groundwater recharge from septic systems
- Other onsite systems (e.g., grey water)
- About 70% of treated wastewater is/will be reused (current and planned)



COUNTY OF SAN LUIS OBISPO

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Regional Water Supply Projects Take Decades

State Water	1960s	1990s	1997
Nacimiento	1950s	2000s	2011
Los Osos Recycled Water	1980s	2000s	2016

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Lopez Pipeline
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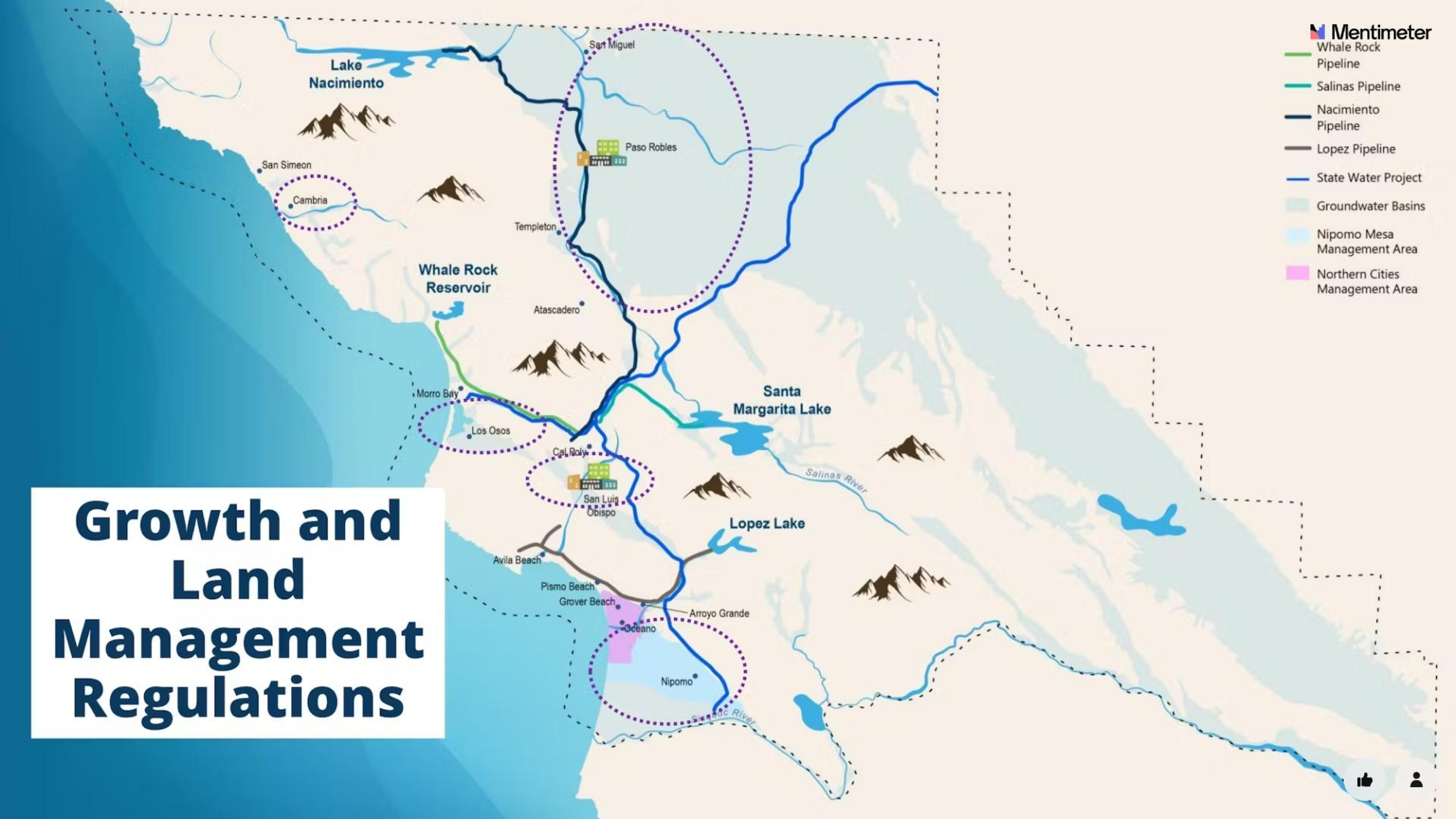
Sisquoc River
Conservation Regulations and Voluntary Actions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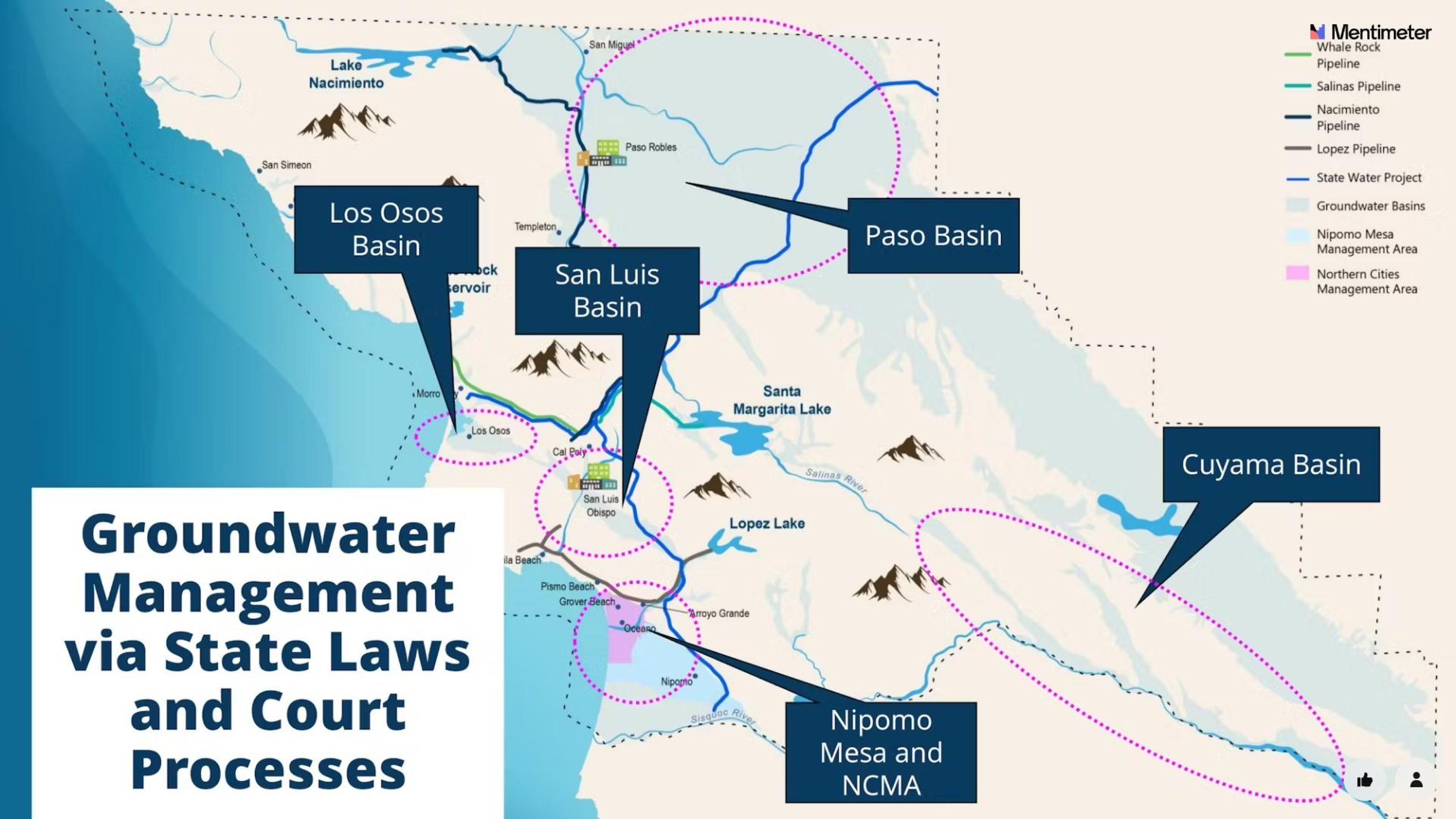
Oceano
Nipomo
Santa Maria River
Growth and Land Management Regulations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Grover Beach
Arroyo Grande
Oceano
Nipomo
Sisquoc River
Nipomo Mesa and NCMA
Groundwater Management via State Laws and Court Processes

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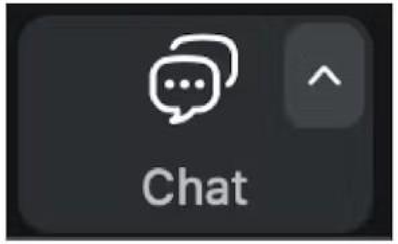
Q&A:
Region's Legacy of Water Resiliency

Click the raise hand icon in the Zoom toolbar and wait to be unmuted

Or drop your question into the Zoom Chat



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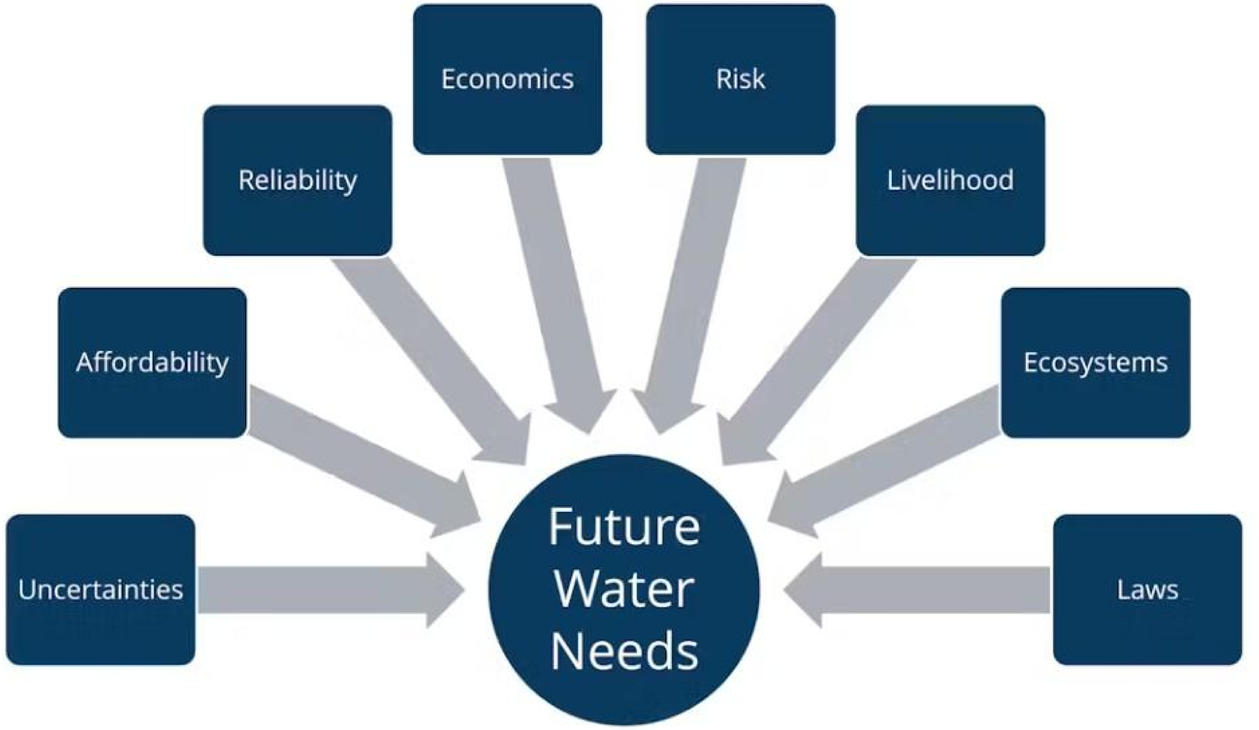
Our Opportunities and Challenges Today

- Water is vital for everyone and everything
- Everyone and everything has their own perspective on water



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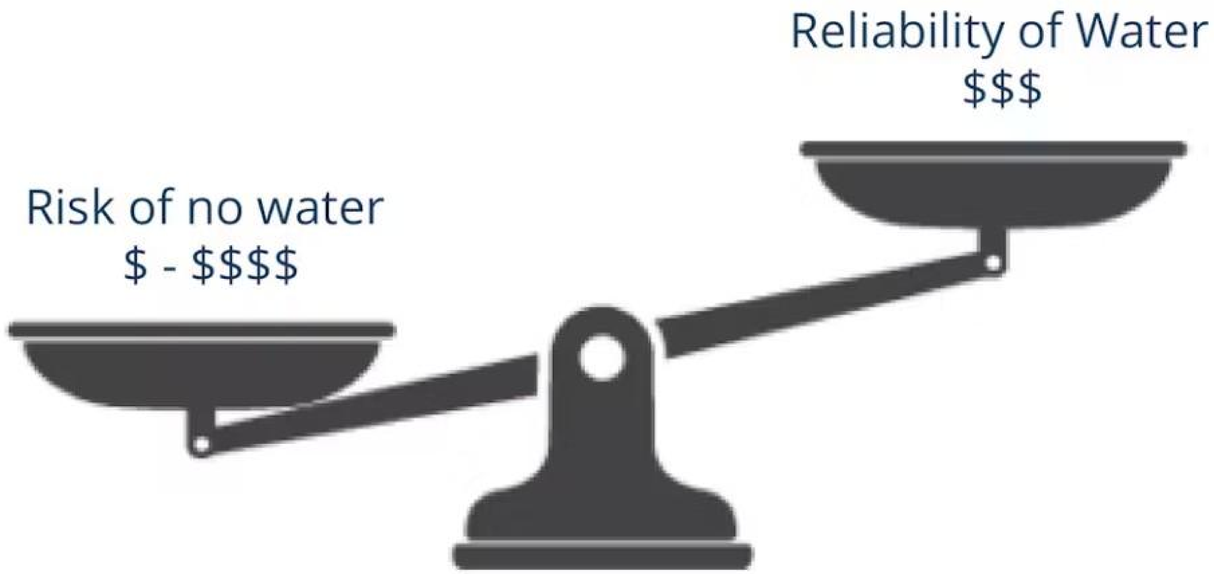
Planning for current and future water needs requires tough decisions and trade-offs



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Planning for current and future water needs requires tough decisions and trade-offs

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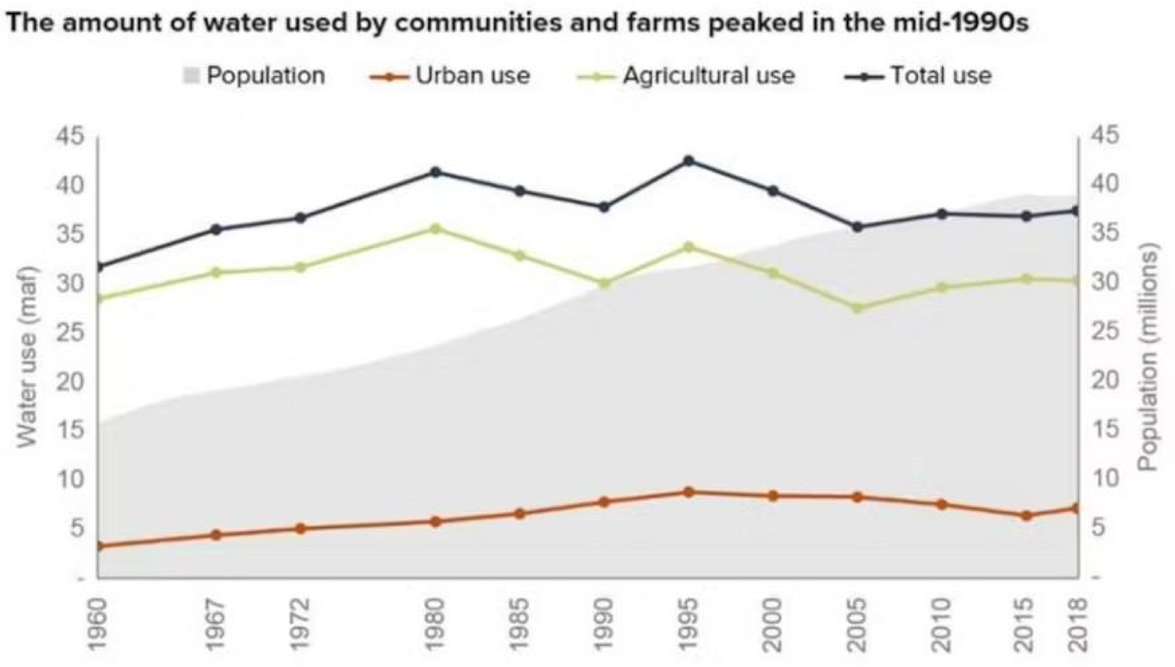
Water Use Efficiency Has Been Successful and Needs to Continue



- Water use remained stable
- Population more than doubled
- Per person use (per capita) has declined

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Water Use Efficiency Has Been Successful and Needs to Continue

- Drought tolerant/low water using landscaping
- Drip irrigation
- Stormwater capture
- Water reuse

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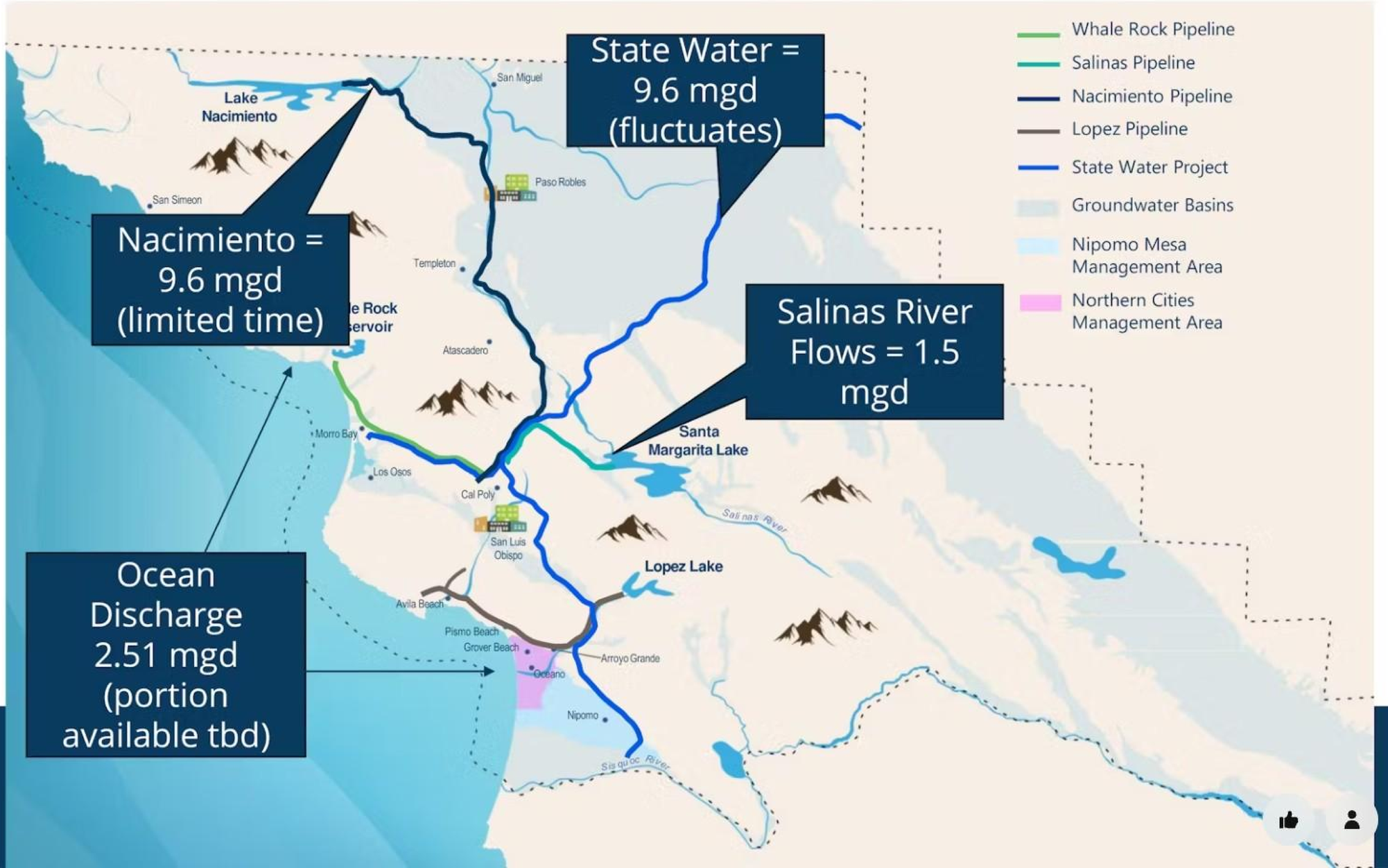
Current Supply Enhancement Opportunities

Average Annual **Estimated** Unused Water

(mgd = million gallons per day)

1 mgd serves about 3500-4500 homes per year



COUNTY OF SAN LUIS OBISPO

Tough decisions to relieve pressure on stressed and vulnerable water supplies in the near term:

- How much should we invest in putting available water to use?
- If voluntary efforts are not enough, how much should we regulate water use?

How to Get Involved:

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Establishing Need

- State Guidance:

> *"... Agencies recommend assessing options for and **optimizing** the use of environmentally and economically sustainable multi-benefit water supplies, such as **conservation, water reuse, and stormwater capture** to the extent feasible, **before** identifying a need for desalinated seawater."*

- What if we still need more? Let's be ready!

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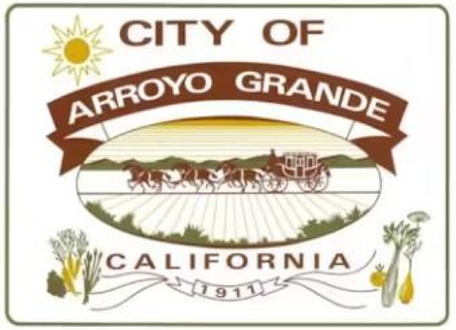
DESAL Plan Partners



Golden State
Water Company

www.slocounty.ca.gov

City of San Luis Obispo

- City Utilities Department's mission
- General Plan Water and Wastewater Element
- Diverse water supply portfolio:
  - Surface reservoirs
  - Groundwater (under development)
  - Recycled water
  - Water conservation programs
- Holistic planning today for future resiliency:
  - Local water supply
  - Drought-proof
  - Regional collaboration

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- City Council Goal:
  - Ongoing proactive assessment of additional water sources

- Current efforts:
  - State Water Ballot Measure 2026: Non-emergency source
  - Continued conservation efforts
  - Interconnection with Golden State Water

- Challenges:
  - Drought conditions - unpredictability
  - Groundwater sustainability
  - Lopez Litigation based on Endangered Species

Golden State Water Company
A Subsidiary of American States Water Company

Los Osos DESAL

Current Conditions

- 100% reliant on groundwater
- Water quality challenges
- Geographically isolated from other sources of water and interconnections

Current Basin Management Efforts

- Adjudicated basin & basin plan implementation
- Future connection to the State Water Project

Benefit of Region DESAL Project

- Reduce dependency on groundwater
- Long term water supply resiliency
- Regional collaboration spreads cost over entire Central Coast area

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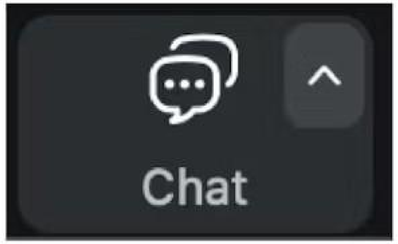
Q&A:
Region's Water Resources

Click the raise hand icon in the Zoom toolbar and wait to be unmuted

Or drop your question into the Zoom Chat



COUNTY OF SAN LUIS OBISPO

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Overview of USBR Feasibility Study

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DESAL Plan Scope

Phase 2: DESAL Plan Development

2024 | 2025 | 2026 | 2027 | 2028 | 2029

Phase 2a

(awarded grant scope)

- District procure consultant & implement Public engagement
- Identify alternatives, vet, cost and rank
- Select short-list to further pursue

Phase 2b

(outside grant scope)

- Conduct more detailed studies and analysis of short-list of projects
- Rank and select preferred project

Go/No Go

USBR Feasibility Study

U.S. Department of the Interior
Bureau of Reclamation
WaterSMART

Water Recycling and Desalination Programs

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Grant from USBR to Prepare Desal Study

(Can be used to position for future funding)

Required Elements:

- Statement of Problem and Needs - next 20 years
- Desalination Opportunities
- Description of Alternatives
- Economic Analysis - with and without project, other alternatives
- Selection of Proposed Project
- Environmental Considerations and Potential Effects
- Legal and Institutional Requirements
- Financial Capability of Sponsor
- Research Needs

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What is Seawater or Ocean Desalination?

Transformation of seawater into drinking water through treatment

COUNTY OF SAN LUIS OBISPO

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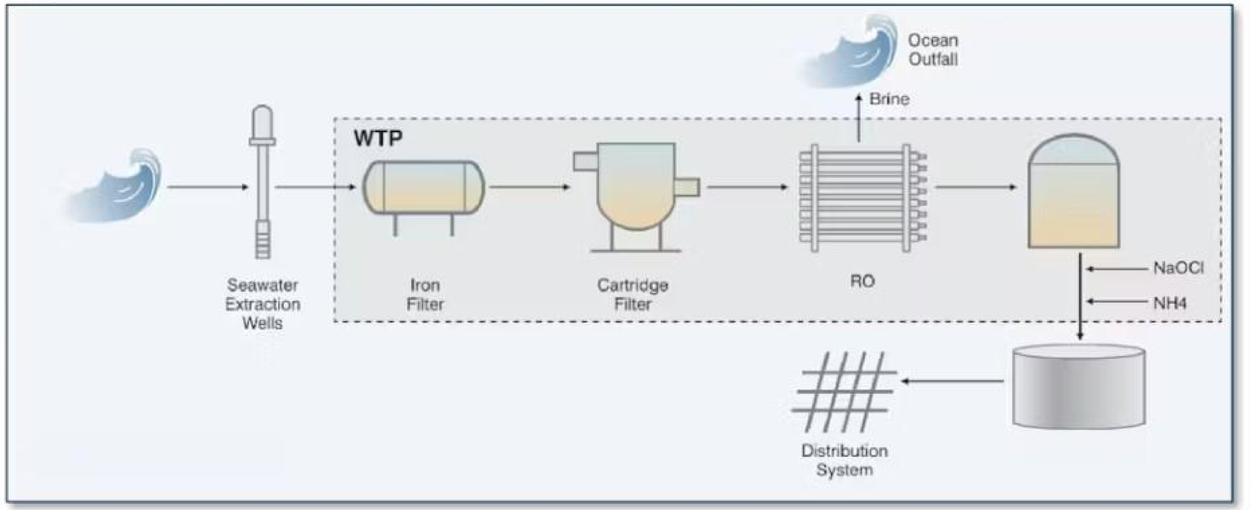
Traditional Ocean Desalination

- Two methods:
  - Reverse Osmosis (RO)
  - Distillation
- Current industry standard ocean desalination is RO.
  - Creates a salty brine that must be discharged back to ocean via an outfall (pipe)
- Alternative 'technologies' exist, however they are alternative configurations of existing technology

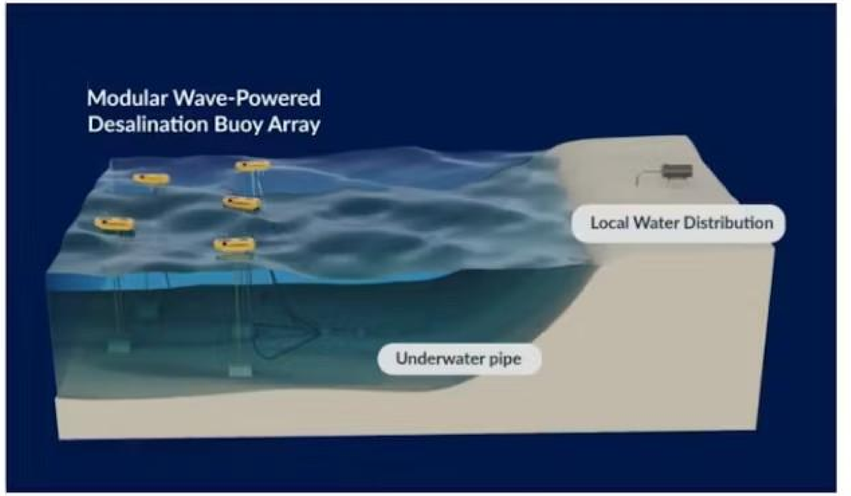
Typical Ocean Desalination Process



Draft – Not for Distribution

Alternative Technologies

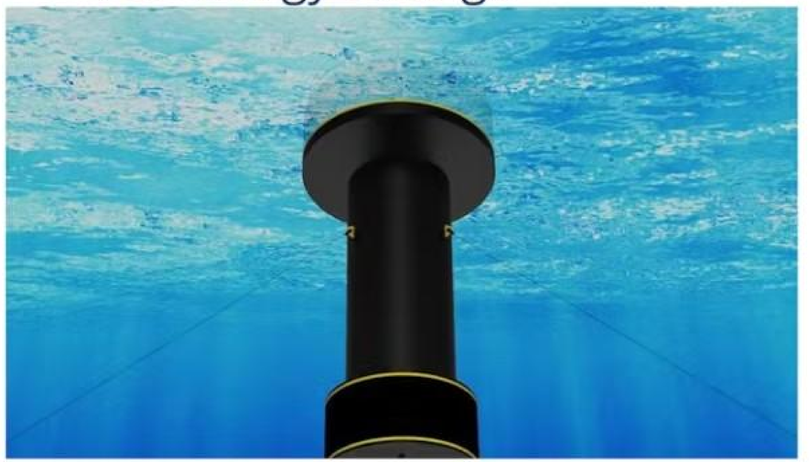
- All Use RO
- None currently permitted in CA
- Not at full scale operation
- Unable to determine costs at this time



Wave Powered Desal Buoys

Deep Sea Plant, using depth for energy savings

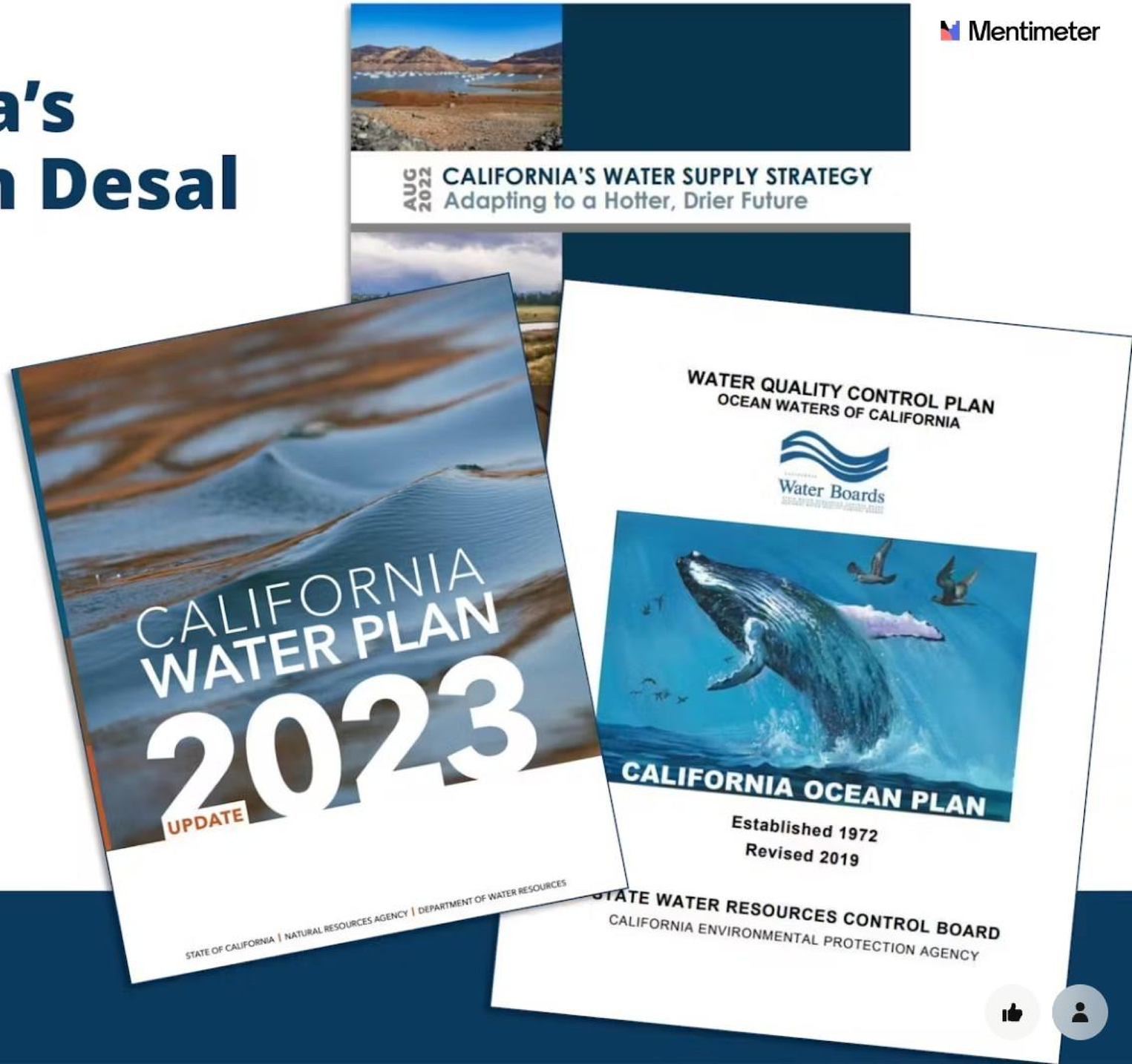
Deep Sea Buoy, using depth for energy savings



Surface Buoy with Low-impact intake

State of California's Position on Ocean Desal

- Important alternative source of potable water
- Goal to increase Desal by 84,000 ac-ft/yr by 2040
- Ocean Plan:
  - Requirements for protection of marine ecosystem
  - Preferred technologies



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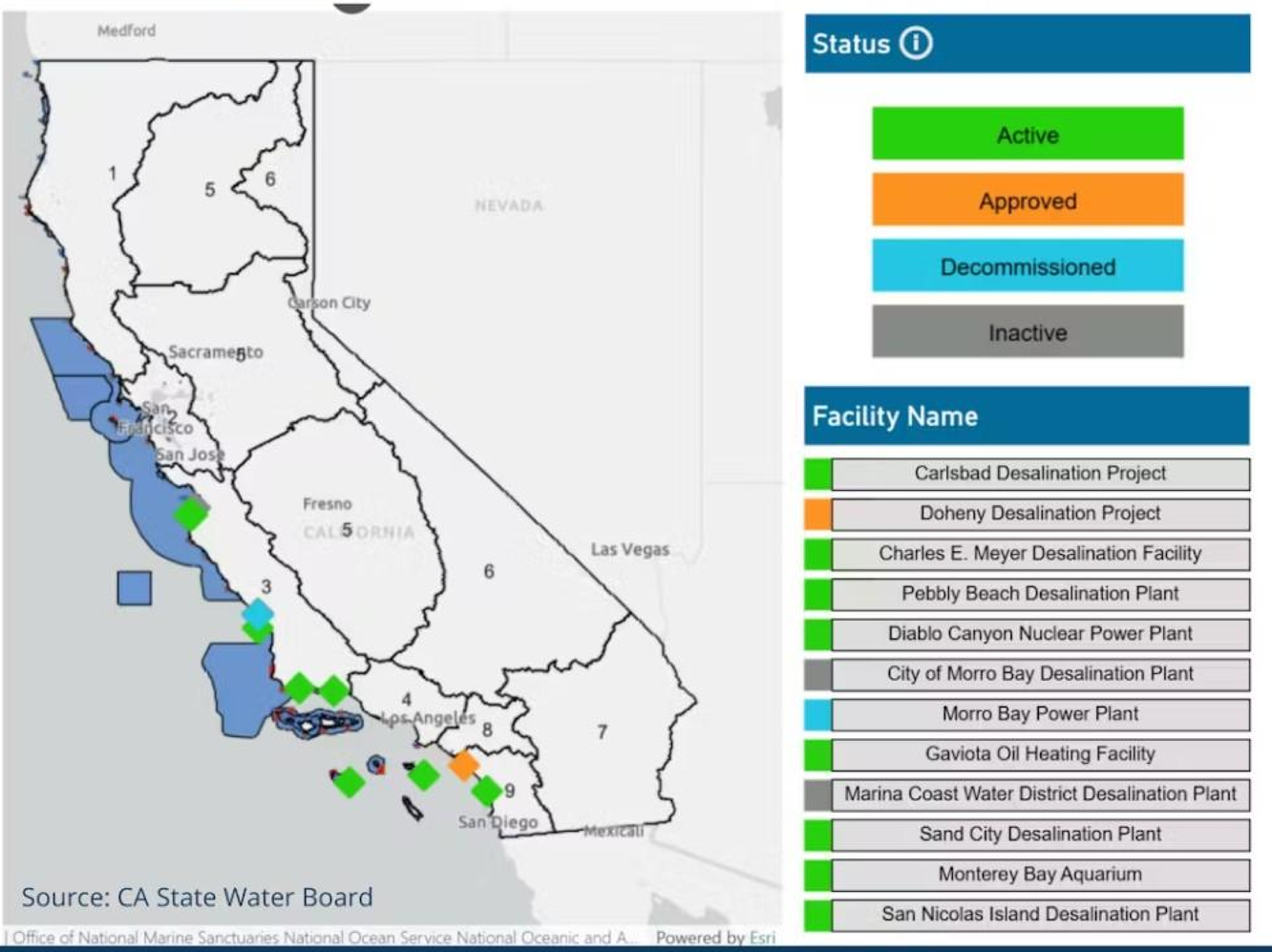
Other Communities Using or Planning for Desal

Larger Facilities In operation:

- Santa Barbara – operating
- Carlsbad (San Diego) - operating

Larger Facilities Under development:

- CalAm (Marina/Monterey)
- Doheney (Dana Point)



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What are the Benefits/Limitations of Desalination?

Benefits	Limitations/Concerns
Provides local, high quality drinking water	Expensive to Construct and Operate (high power use)
Is drought resilient (not tied to hydrologic cycles, surface water flows or wastewater flows)	Difficult to Permit – environmental impacts/mitigation
Can provide a safeguard against unpredictable water shortages	Not flexible to turn off and run only occasionally

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What are the benefits or opportunities of ocean desalination in SLO County?

13

What are your concerns with ocean desalination in SLO County?

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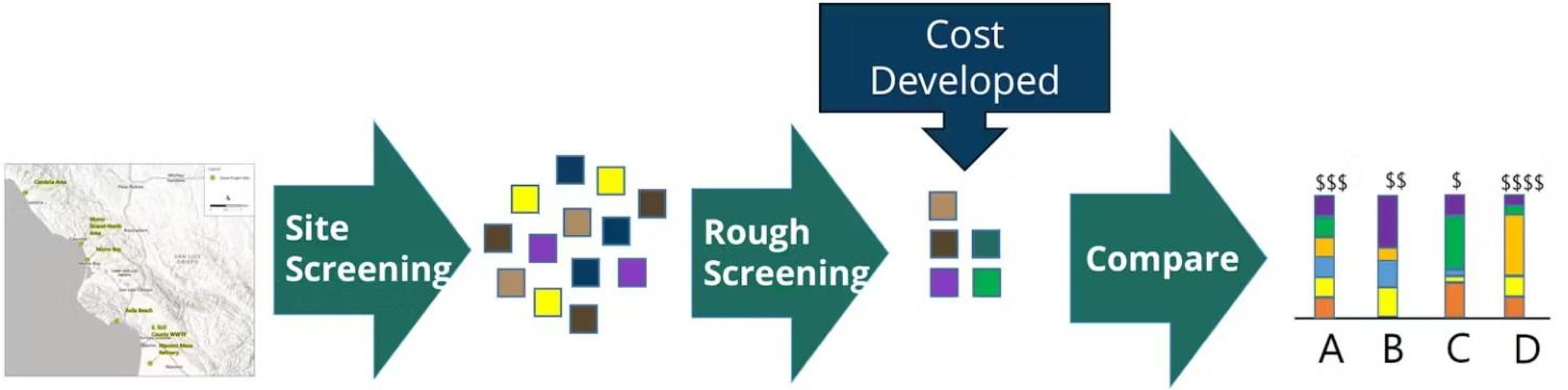
Screening Process to Narrow the Options Down to Viable Projects/Portfolios



Identify Potential Sites

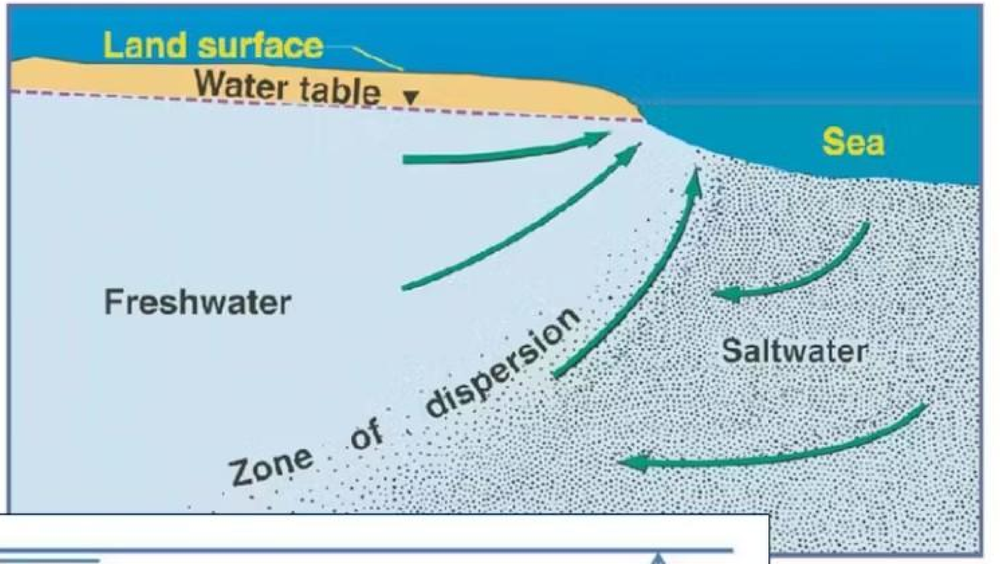
Identify up to 12 Concept Alternatives

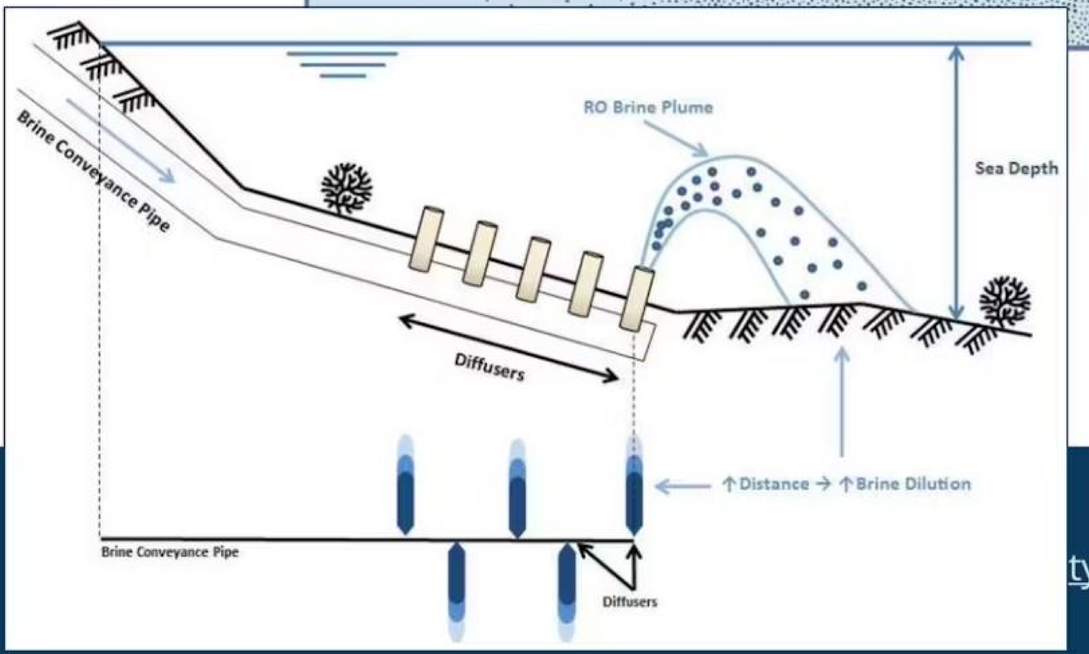
Advance up to 5 Concept Alternatives

Compare Concept Alternatives

What makes a good site for Desal? – Preferred Technologies

1. Subsurface Intake beneath ocean floor or coastal wells
2. Brine discharges to outfall (pipeline into ocean)
   - Dilute with wastewater
   - Multi-diffuser ports for rapid mixing





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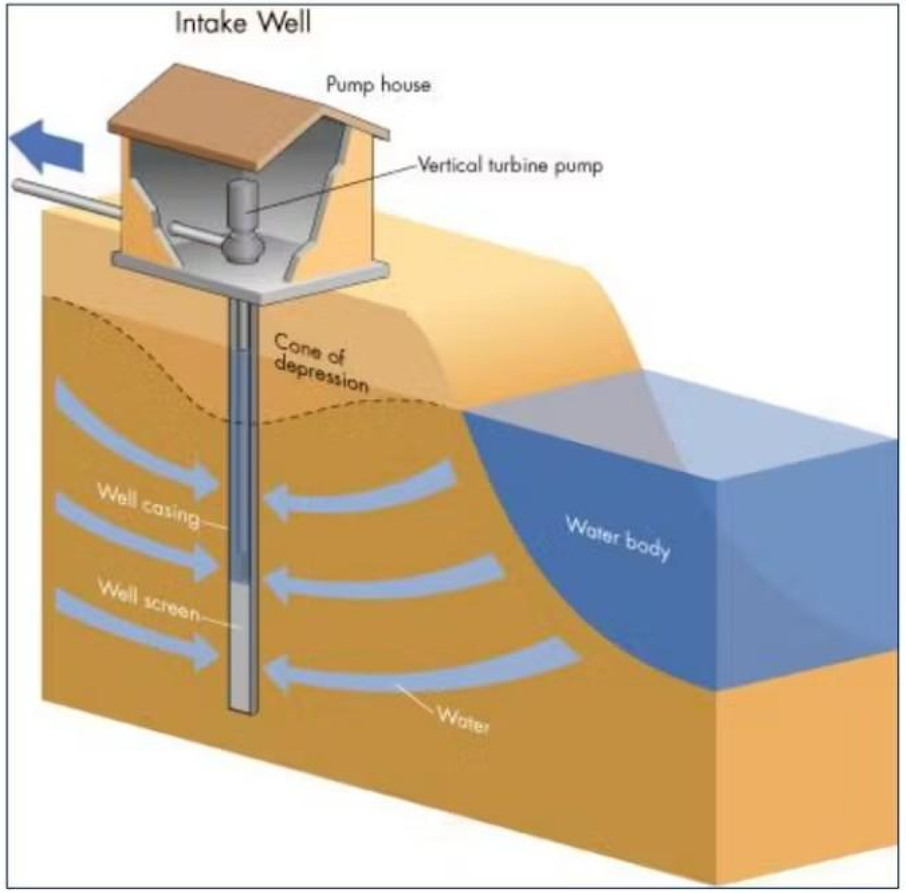
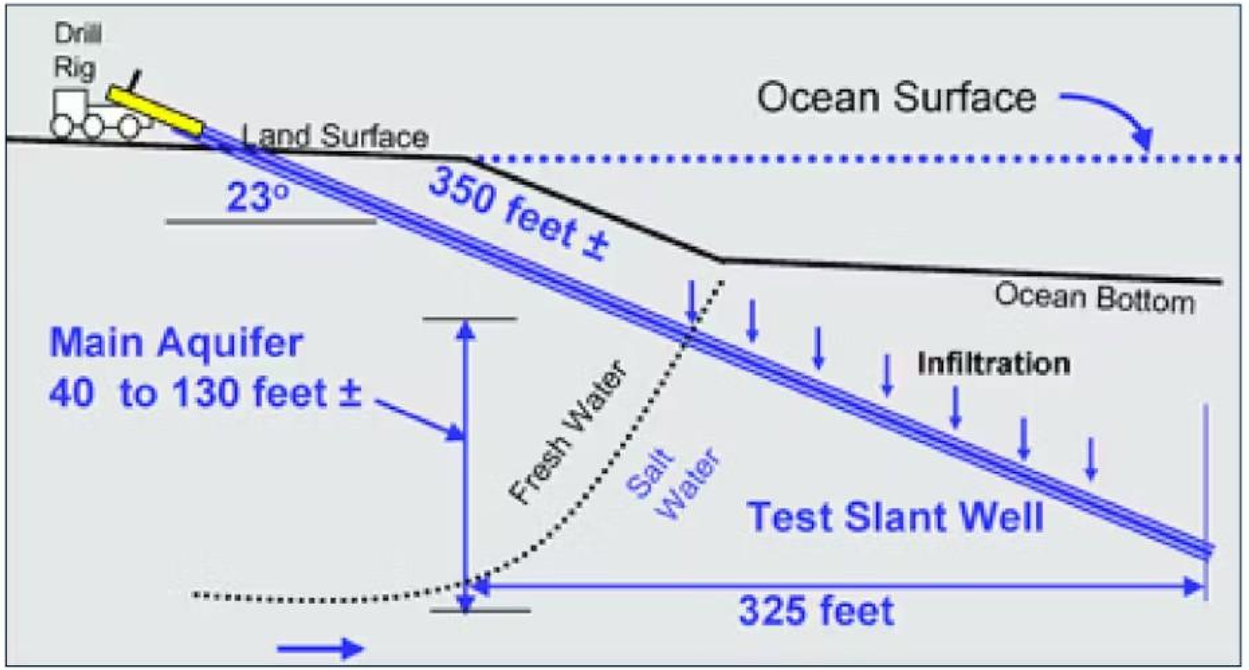
Examples of Subsurface Intakes



Vertical Wells



Slant Wells

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Alternative Sites For Subsurface Intakes

- Offshore Geologic Maps
- Aerial Imagery

San Simeon Creek

Morro Bay

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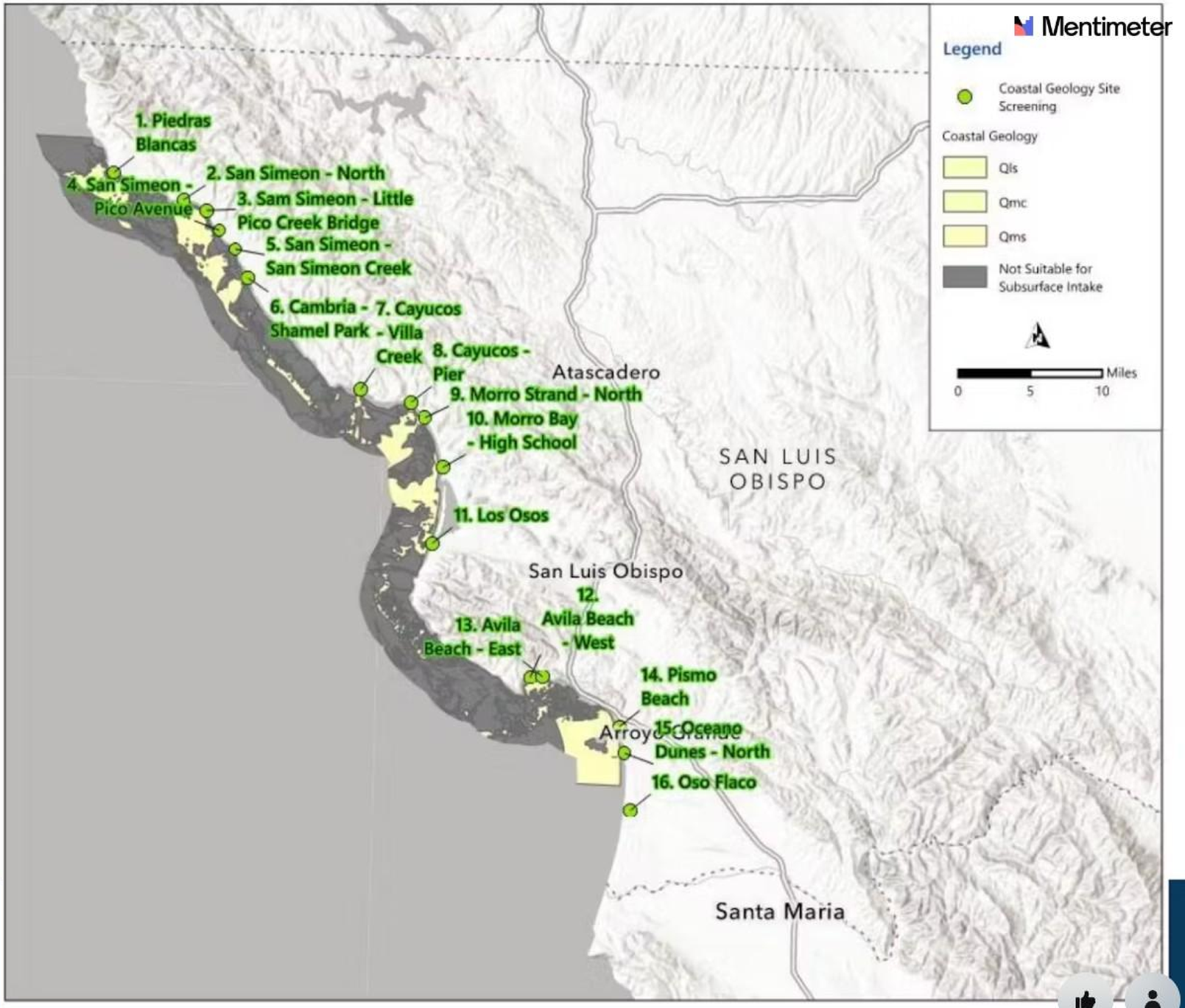
Intake Sites

- 16 sites identified based on suitable coastal hydrogeology



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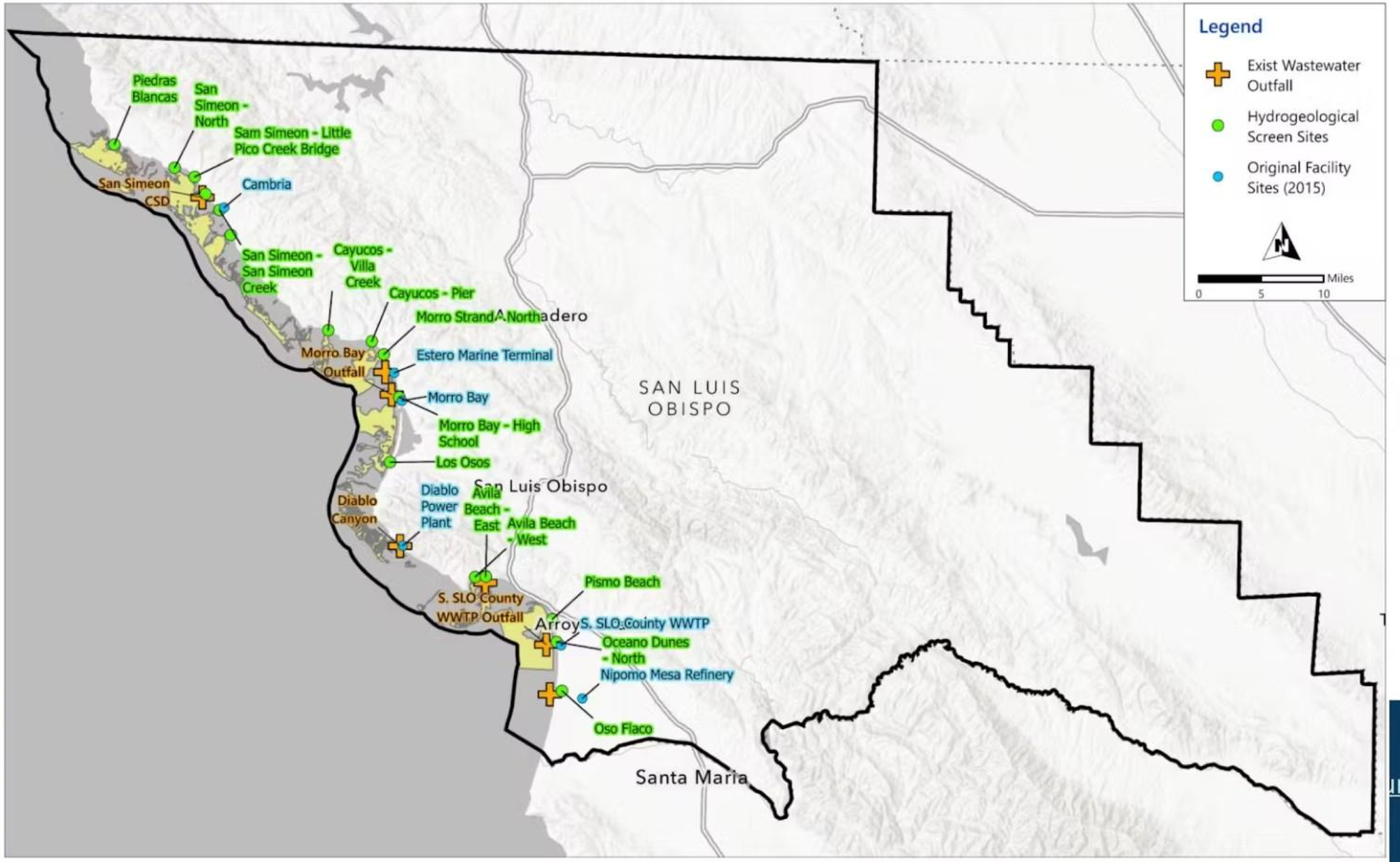
Intakes and Outfalls



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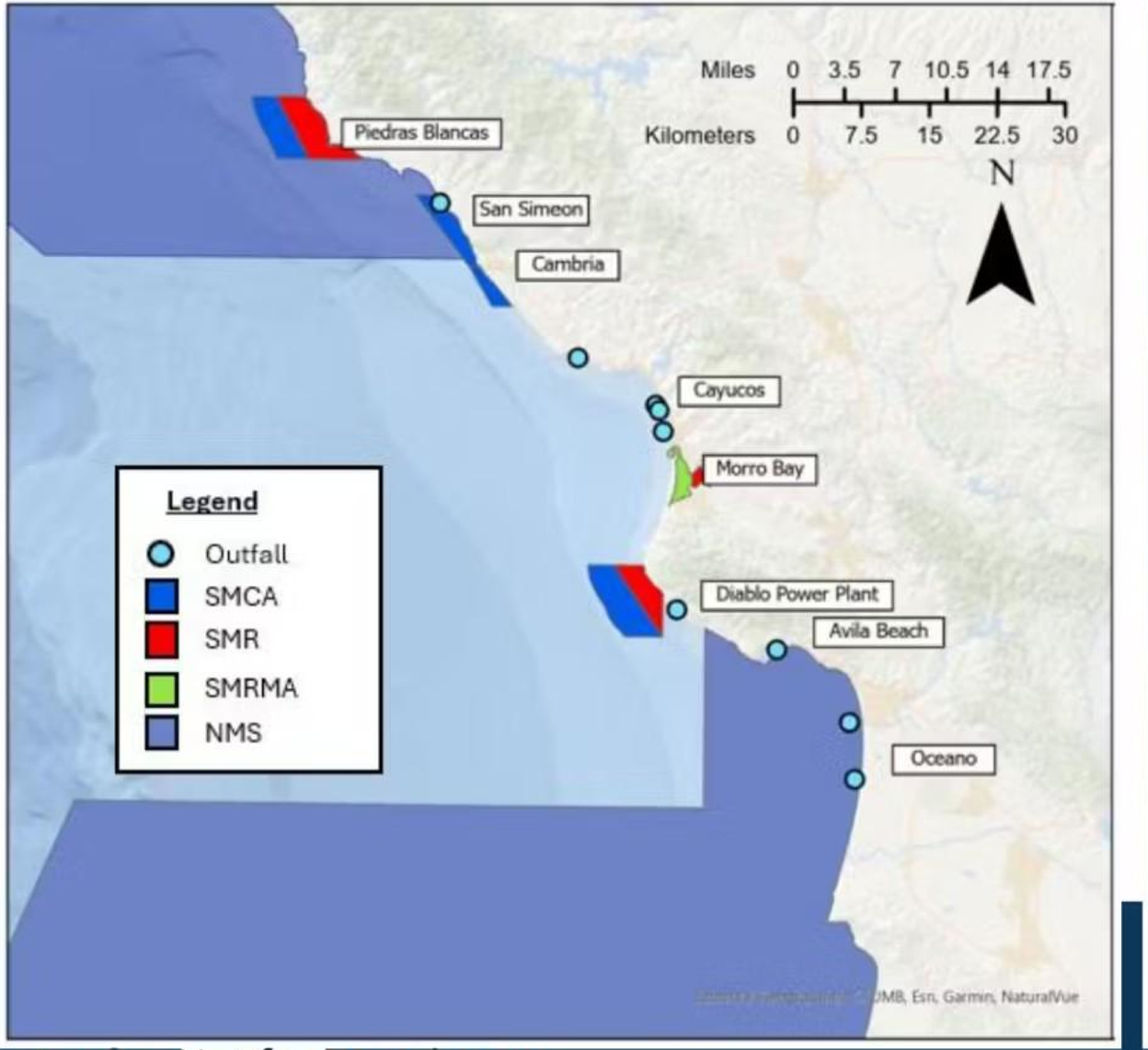
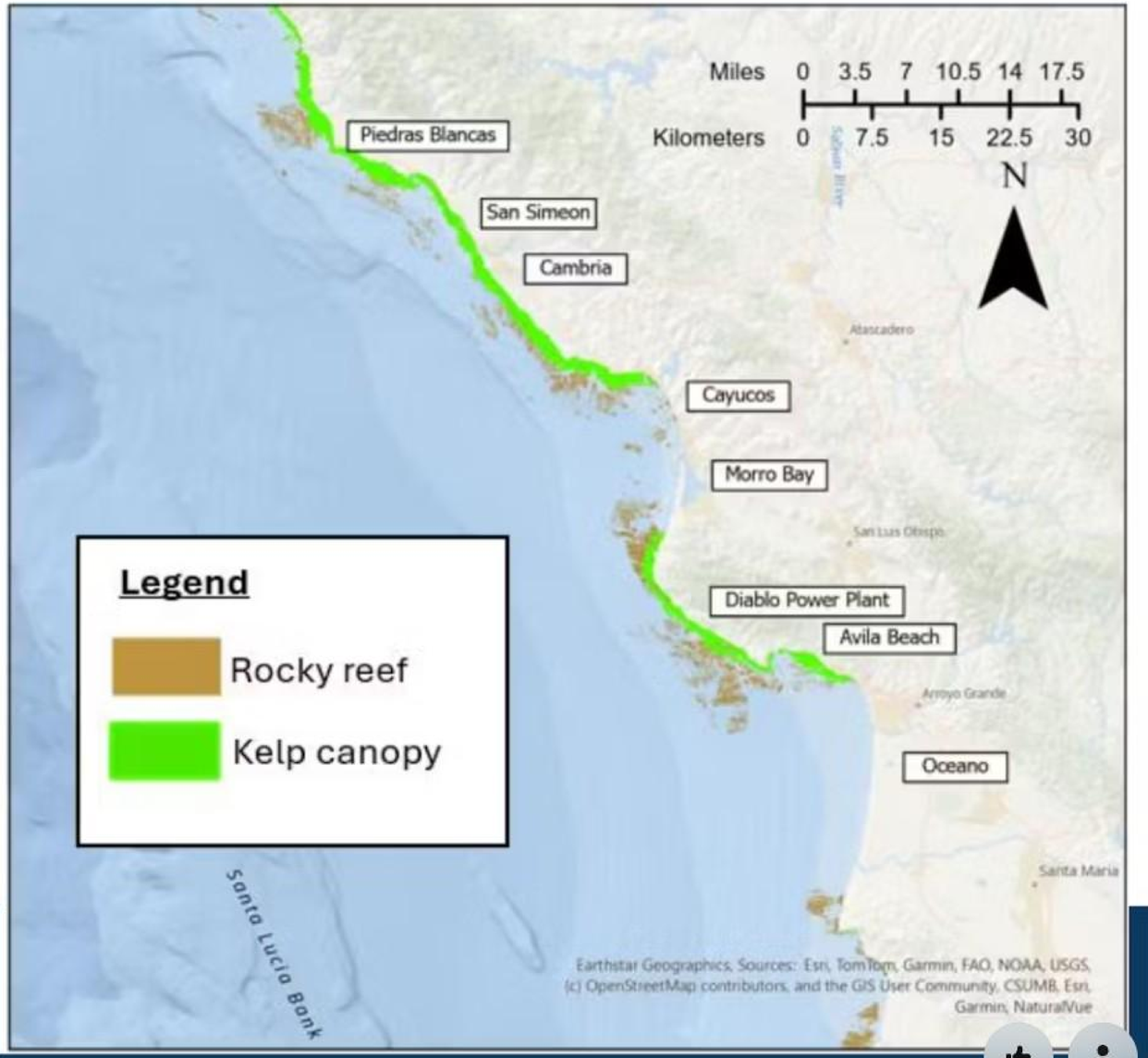
Marine Environment/Protection





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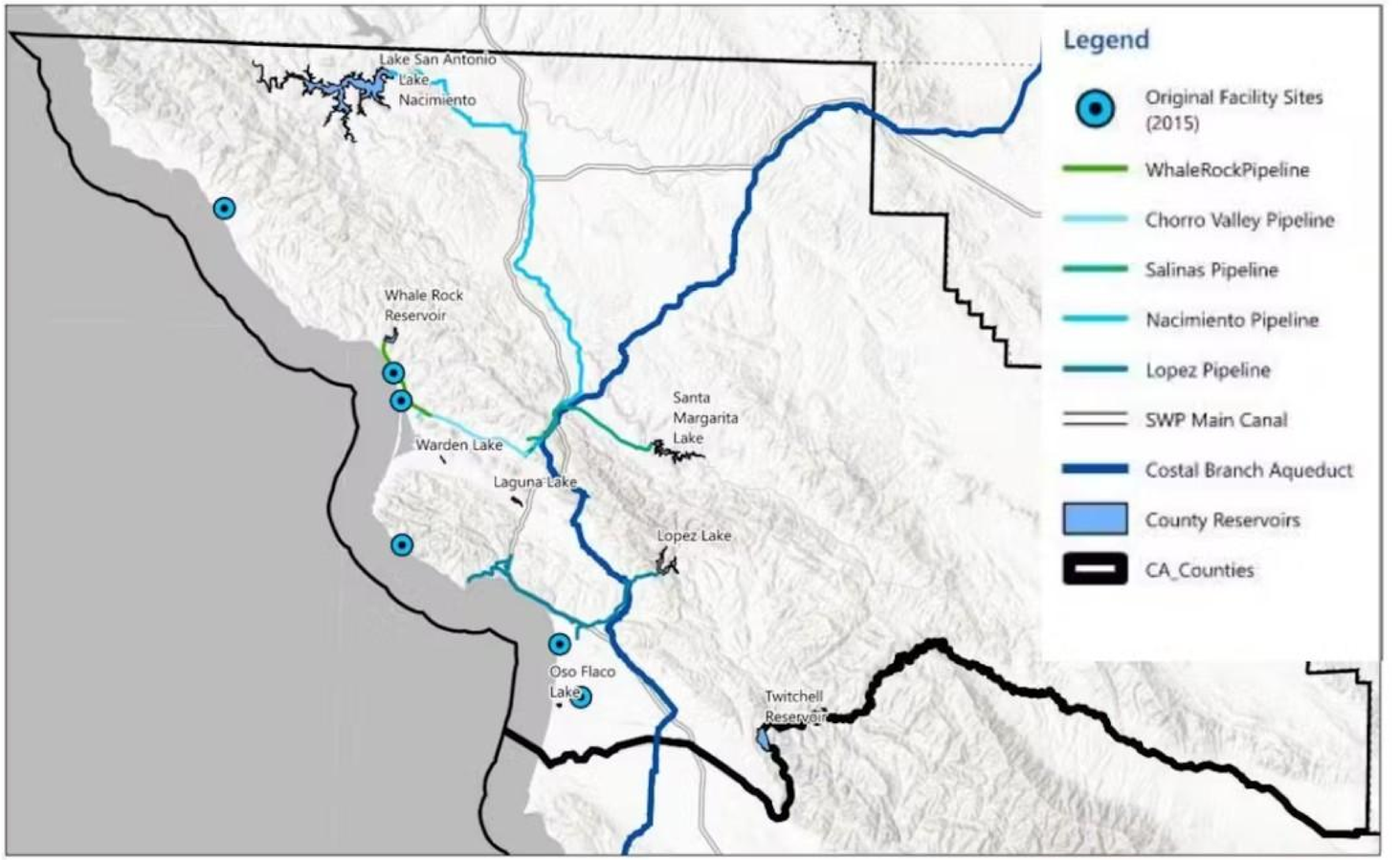
Proximity to Regional Conveyance Infrastructure

- Major Conveyance Infrastructure
- Is there an ability to utilize existing infrastructure?
- Ability to develop partner interties.
- Identify new infrastructure needed.



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Screening Criteria for Site Assessment

- Intake location (suitable soil)
- Outfall location/capacity/flow
- Aquatic Environmental Impacts
- Land Impacts (Environmental, Social, Technical)
- Conveyance Infrastructure Required

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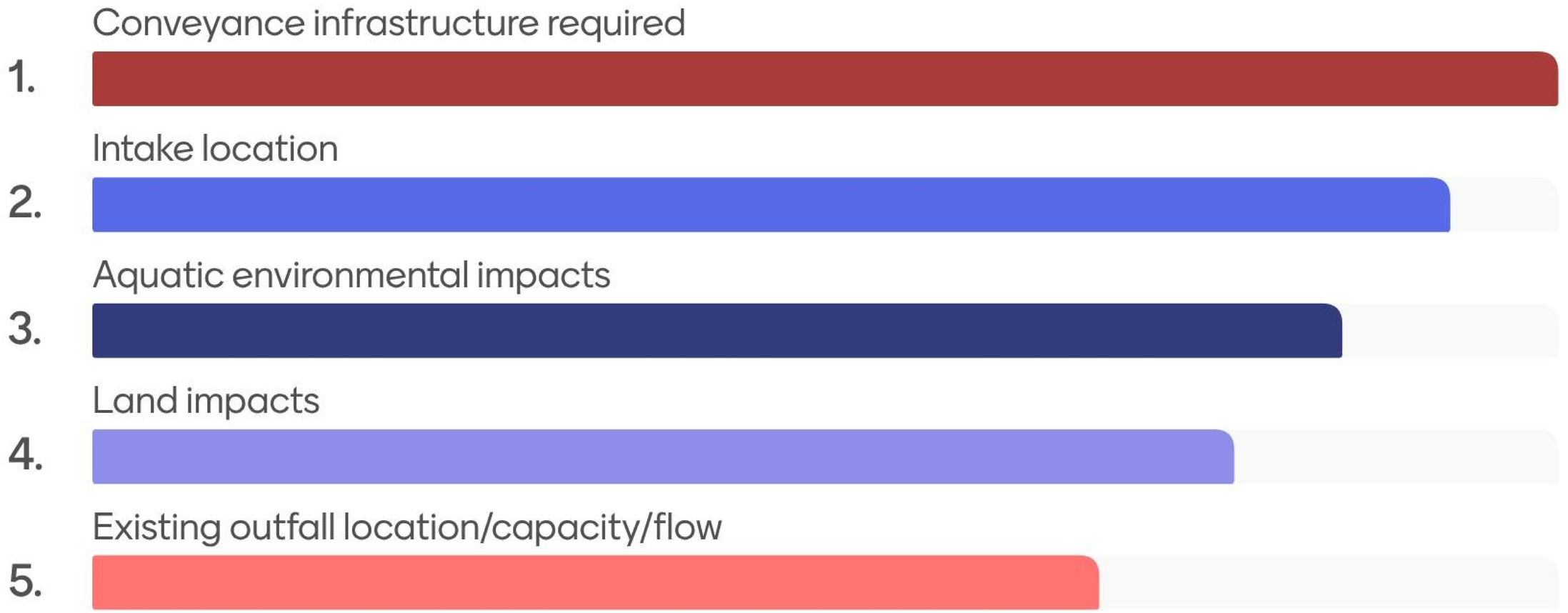
What screening criteria are important to you in thinking about siting?



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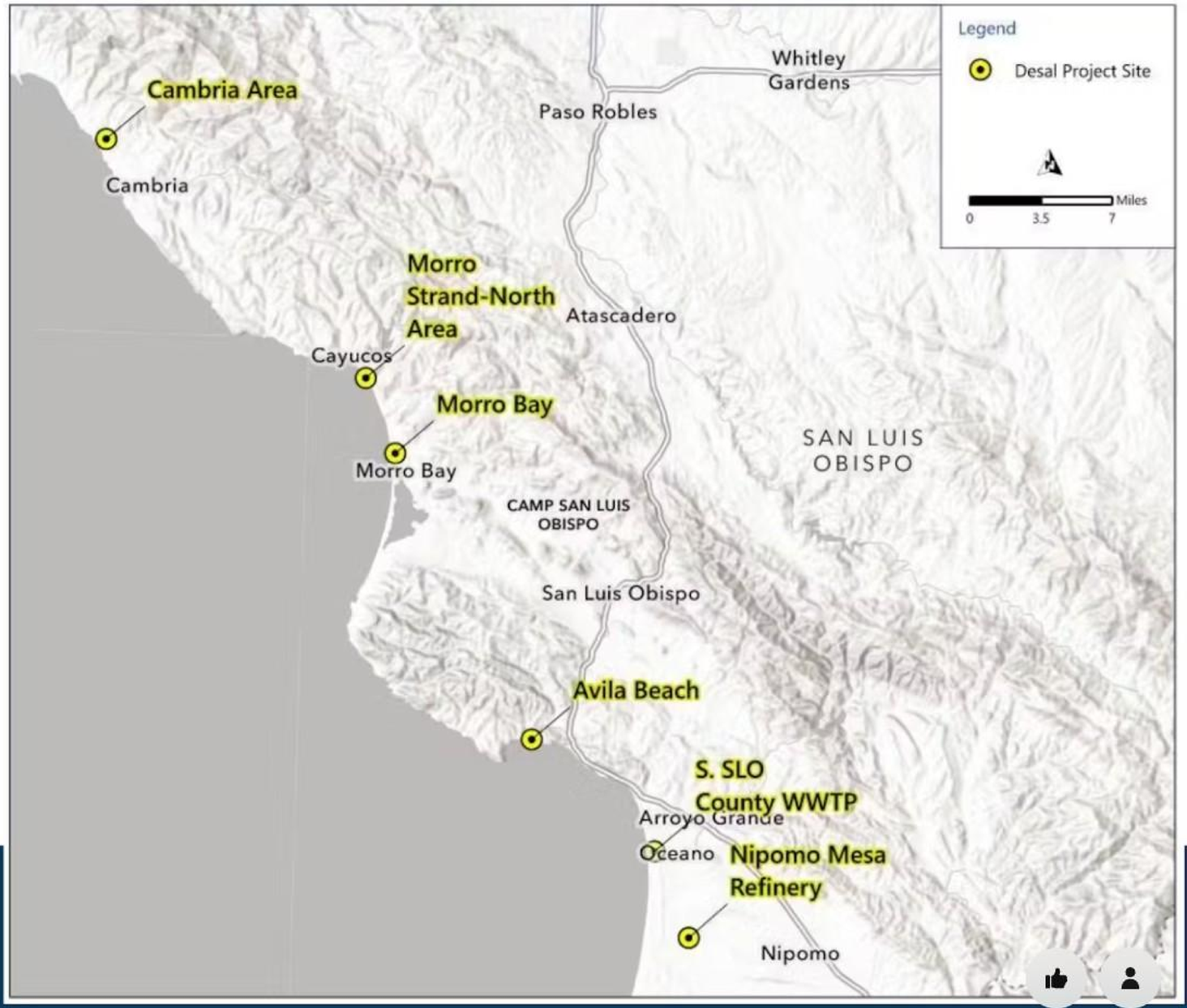
Consolidated Sites for Further Evaluation

- Sites represent geographic areas not exact locations
- Removed sites with unsuitable hydrogeology (e.g. Diablo)
- Using existing outfalls where possible
- Some locations will require new outfall as existing outfalls are too small



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Moving from Sites to Alternative Development

An Alternative =

Site for an ocean intake, outfall, and desal treatment plant

+

Size based on existing outfall capacity limitations

+

End Users (demands for direct deliveries, potential exchanges)

+

Conveyance needed for deliveries/ exchanges

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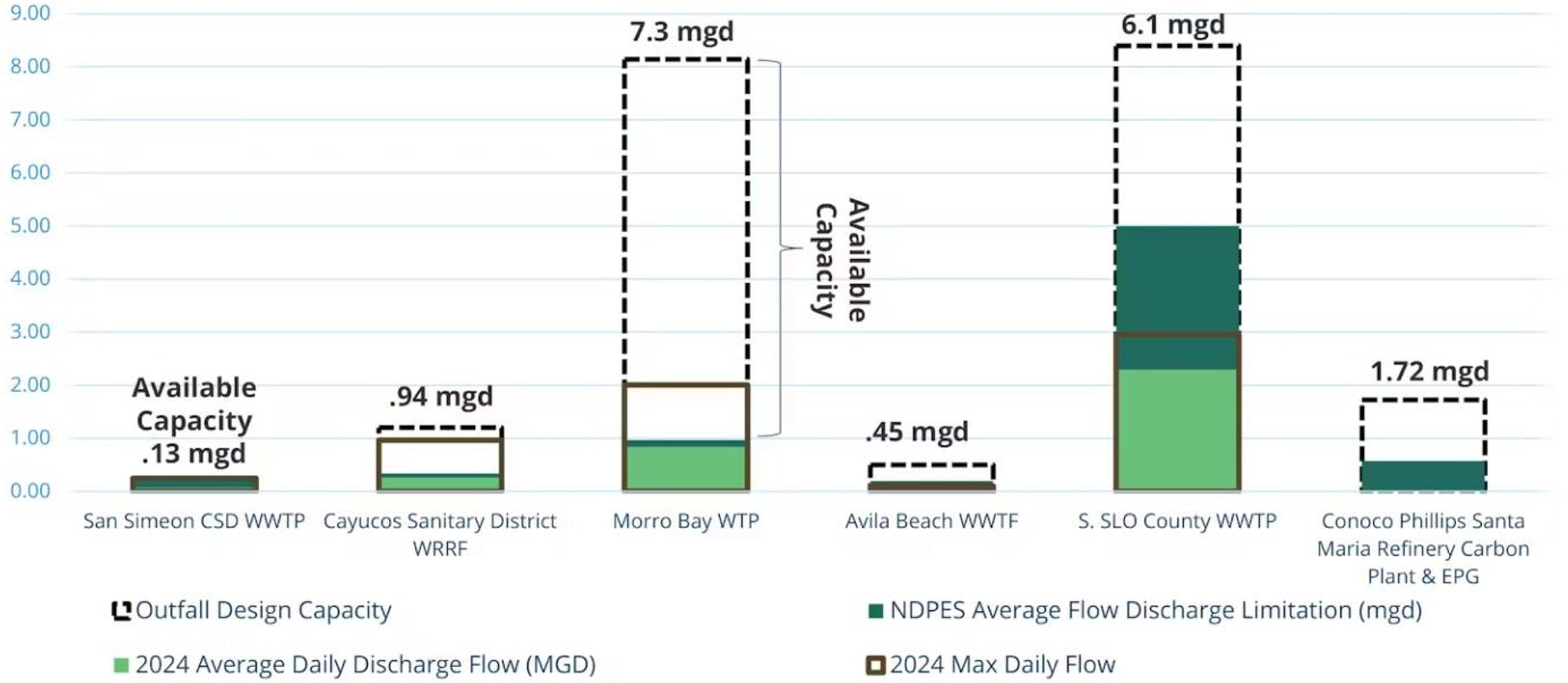
Looking at Existing Outfall Capacity



Notes:
Mgd = million gallons per day

Graph represents existing outfalls, not necessarily willing partners

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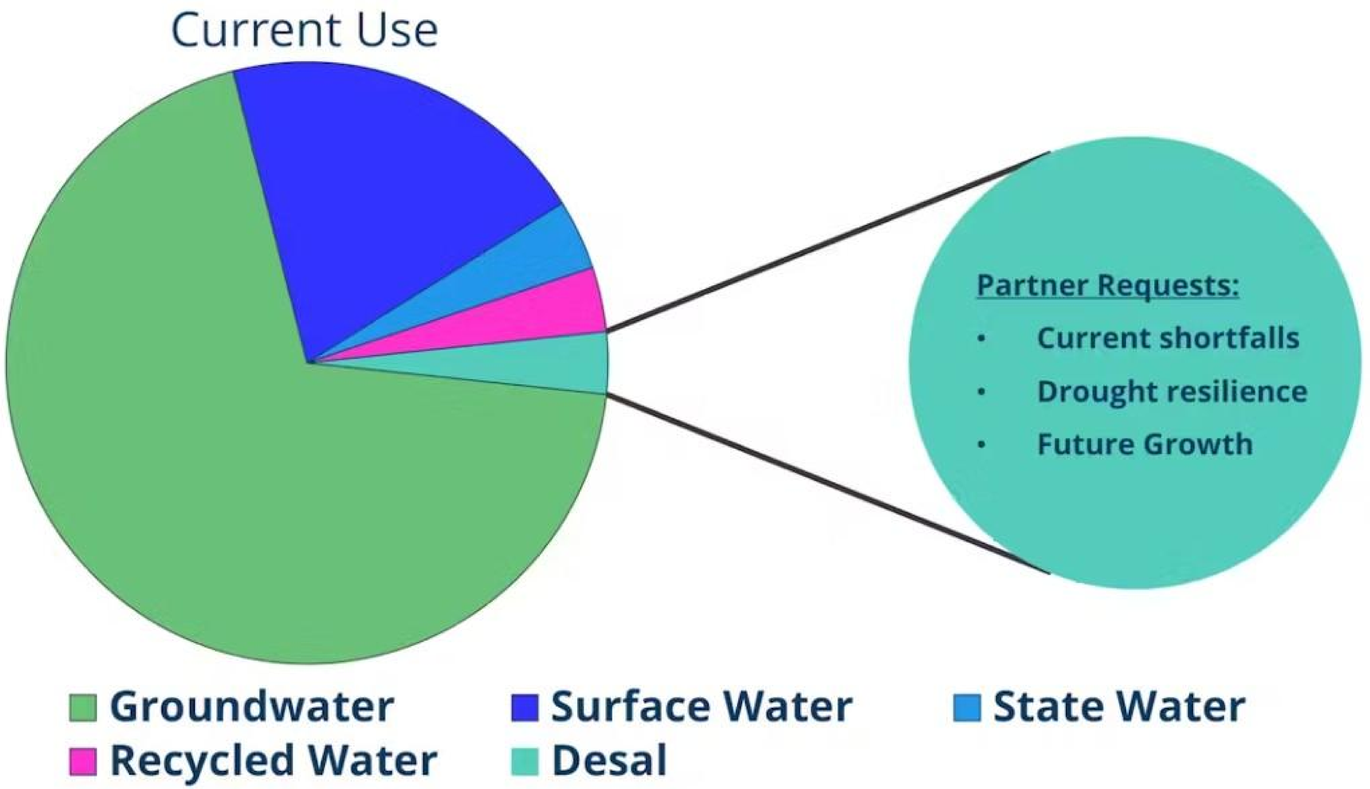
End User Direct Requests

Water use – now and in future

- Develop baseline water use.
- Surveyed 20 County water agencies
- Diverse response on where Desal's role fits in:
  - Current need
  - Future need
  - Planning for uncertainty
- Helps to create project alternatives.

Where does Desal Fit?



Scenario Development - What Supply Needs Can be Met by DESAL?

- Goal to develop Alternatives to meet a range of needs
- Bookend approach:
  - ✓Local vs. Regional
  - ✓Small vs. Large flows
  - ✓Varied locations in County
  - ✓Many vs. few users

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What are your priorities for developing alternatives? (rank in order)

1. Large Regional projects with new infrastructure (many users, meets all partner requests,...
2. Medium Regional projects relying on exchange agreements (more users, meets some p...
3. Medium Regional projects with new infrastructure (more users, meets some partner req...
4. Small Local projects (few users, meets critical partner requests)

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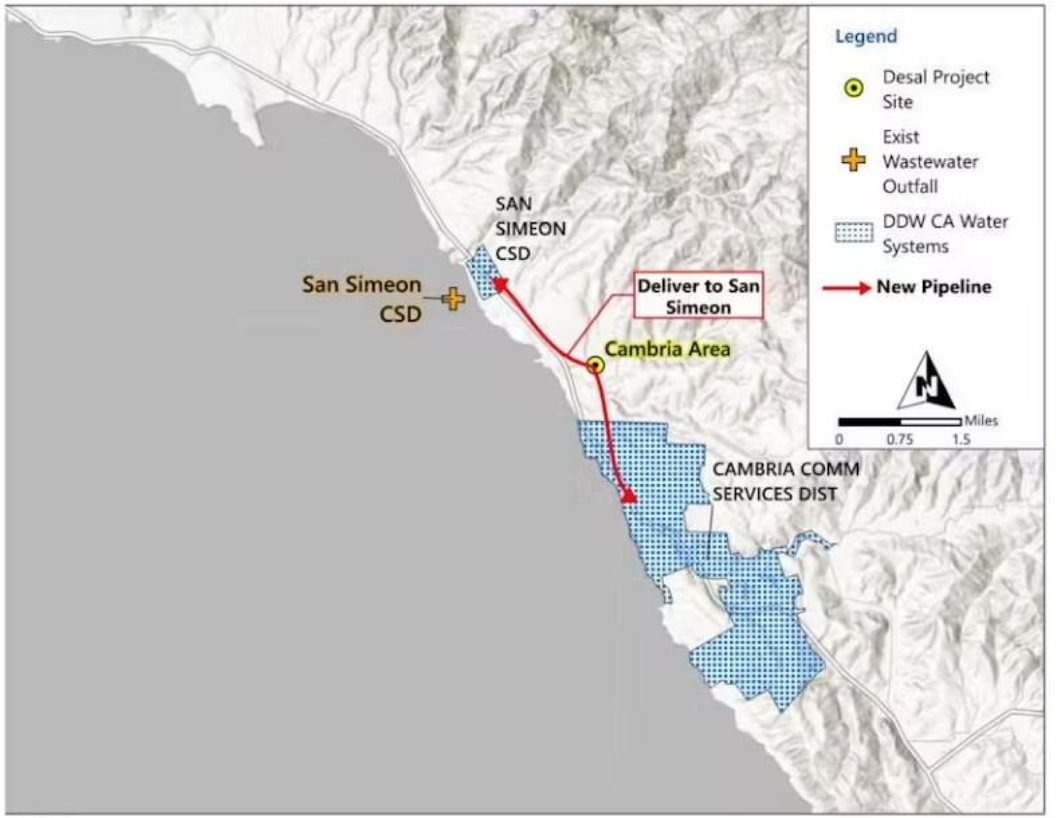
Example Alternative - 1

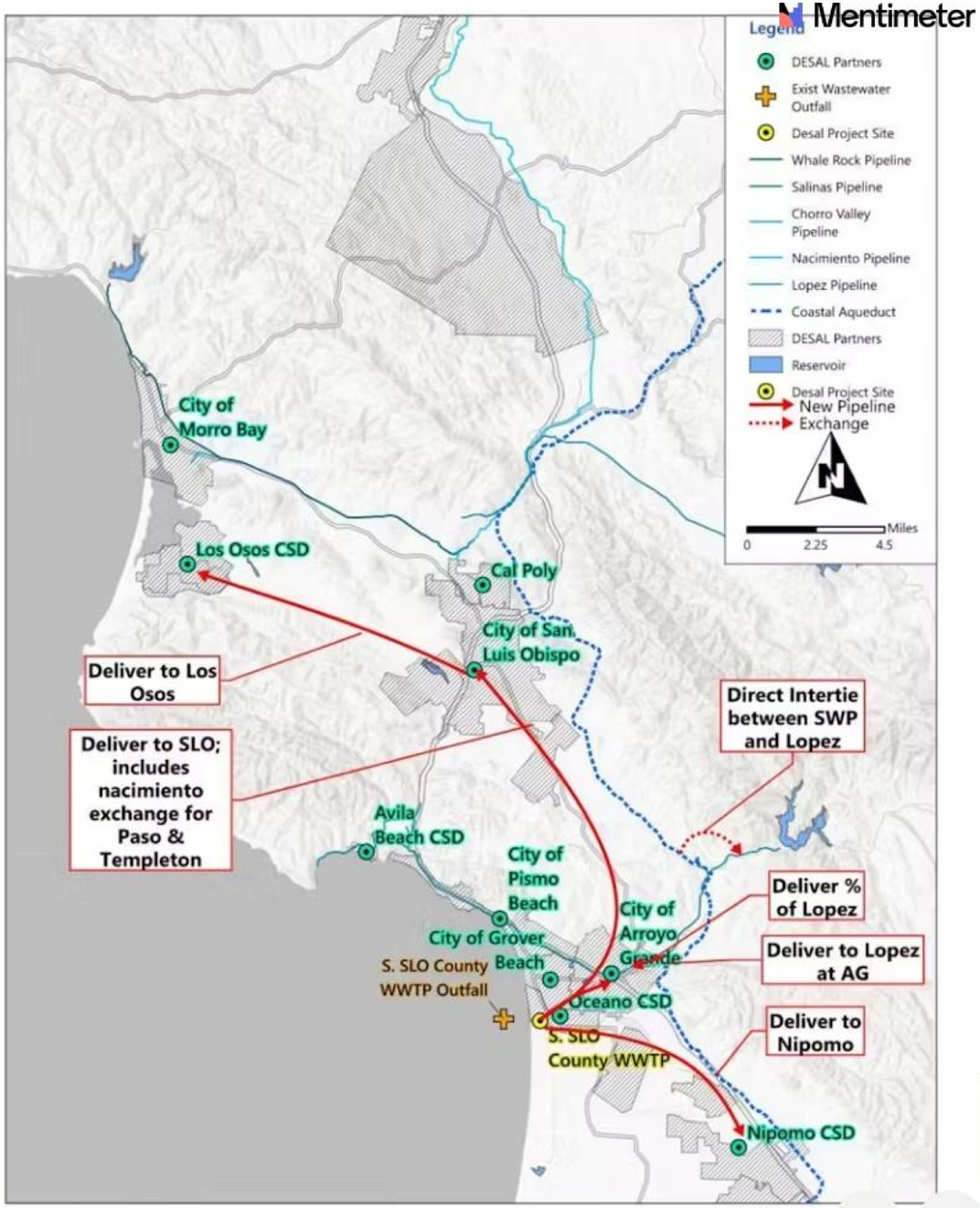


Alt 1.

- Benefits:
  - Small, local use
  - Meets partner demands for supply needs
  - Provides local drought resiliency
- Limitations:
  - No larger regional benefit
  - New outfall required (existing too small) or Alternative Technology
  - Sensitive aquatic habitat and protected areas

Example Alternative - 2

- Benefits:
  - Large, regional use
  - Meets partner demands for supply needs
  - Provides regional drought resiliency, groundwater sustainability…
- Limitations:
  - Lots of new infrastructure
  - Local hazards
  - Protected areas



Alt 10.

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Development and Rough Screening of Alternatives to include consideration of:

- Demands to be served (million gallons/day)
- Infrastructure needed (pipeline length/size, treatment size)
- Outfall considerations – new, existing, capacity, available flow from treated wastewater
- Local impacts – environmental, neighbor, cultural, hazards
- Implementation concerns/complexity

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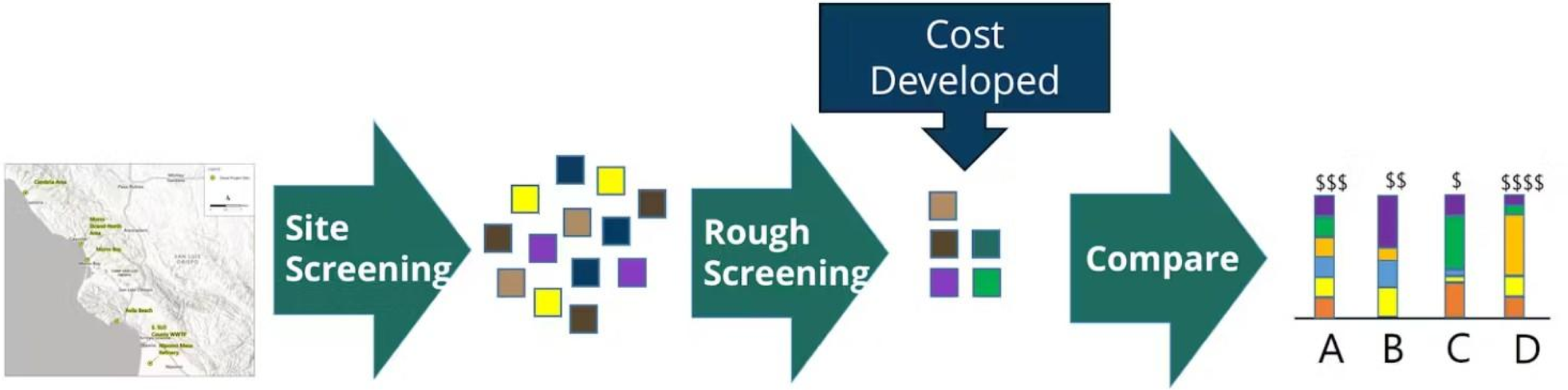
Screening Process to Narrow the Options Down to Viable Projects/Portfolios



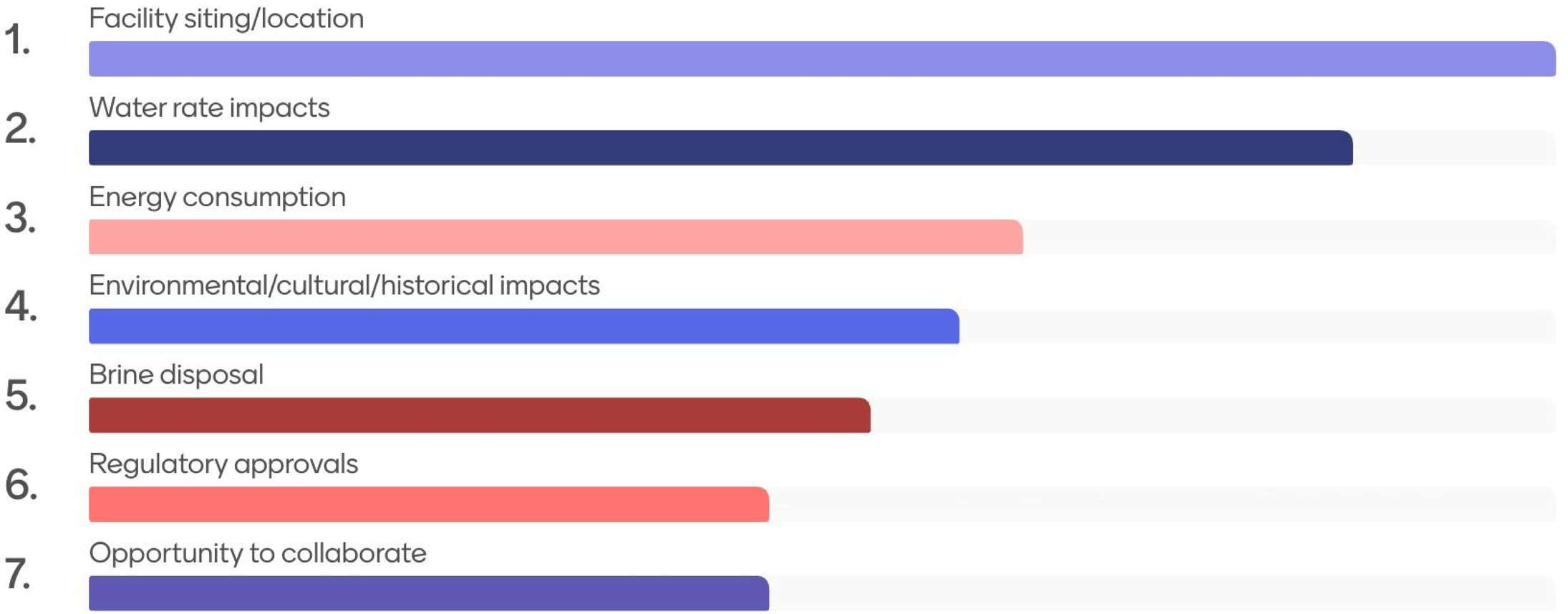
Identify Potential Sites

Identify up to 12 Concept Alternatives

Advance up to 5 Concept Alternatives

Compare Concept Alternatives

What feasibility criteria are important to you in thinking about desalination?



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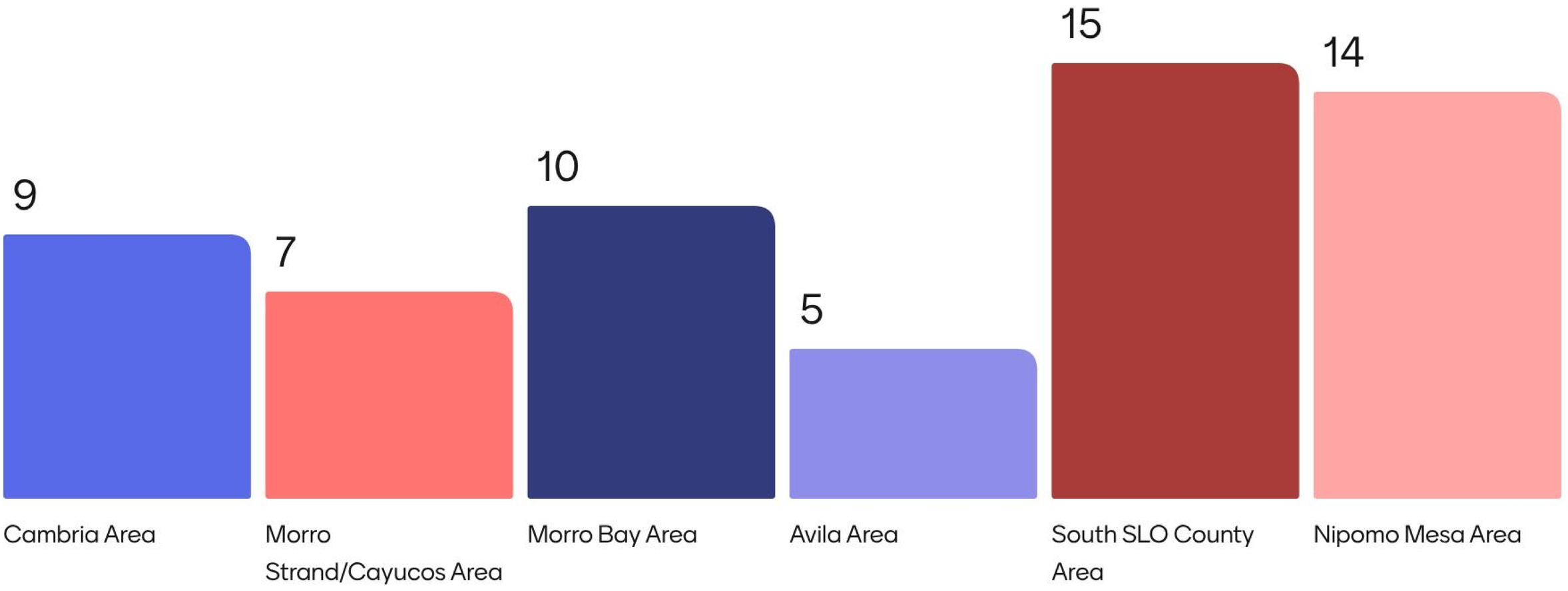
Based on what you learned today, which desalination sites look promising to you? (Select up to six)



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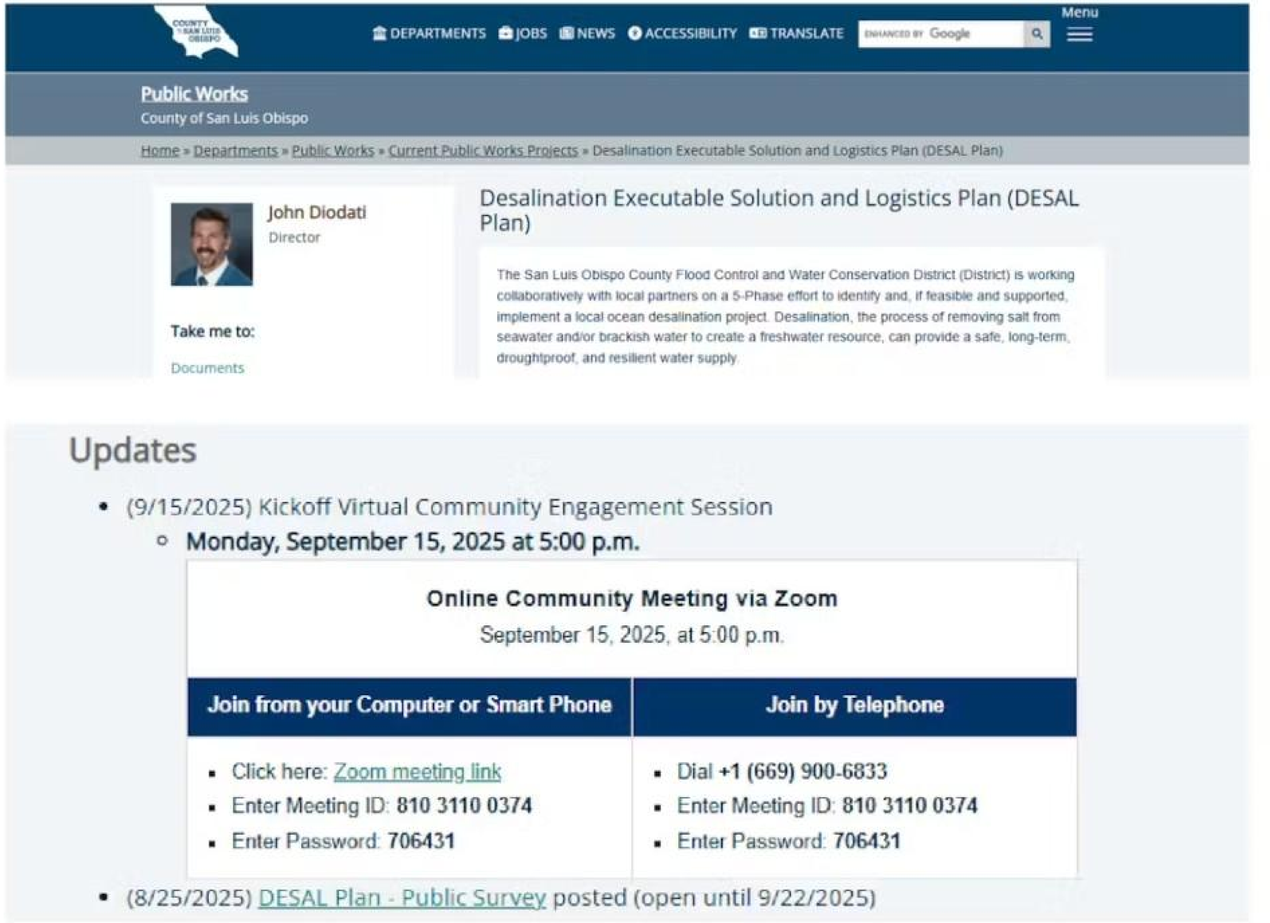
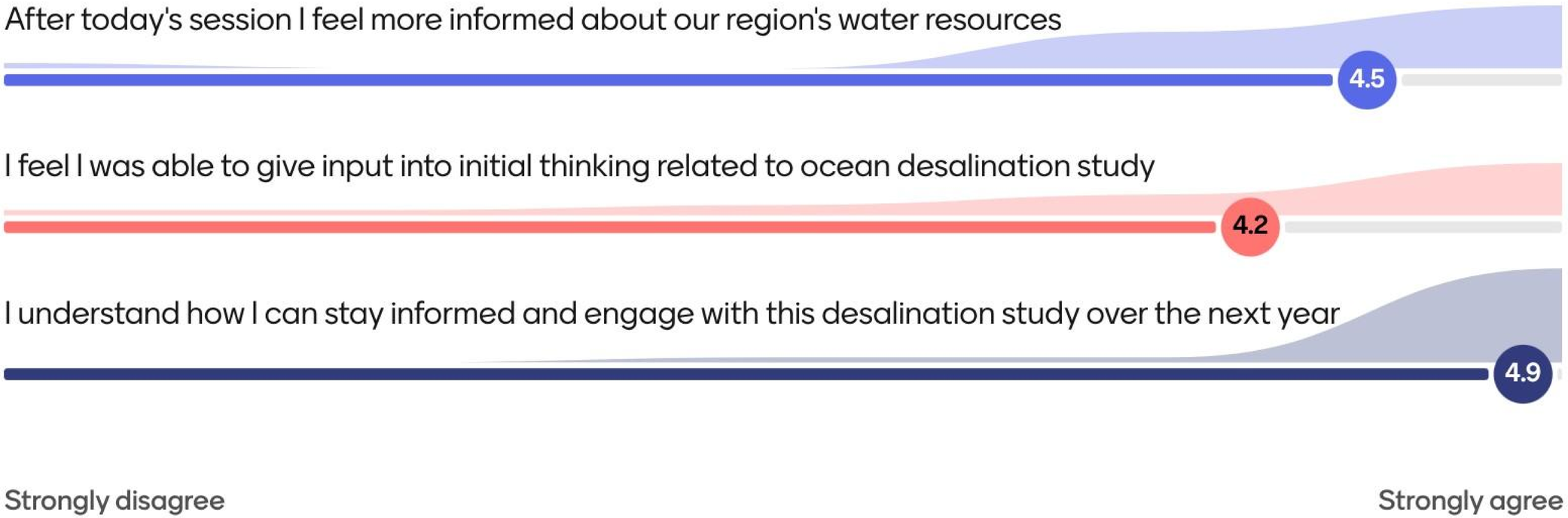
Next Steps

How to Stay Engaged

- Visit our project website:
  - **www.slocounty.ca.gov/DESAL**
  - Join the email list today
  - Take the DESAL Survey by 9/22
- Attend 10/1 WRAC Meeting
- Attend next Community Engagement Session & take future project surveys



Thank you! How did we do meeting today's session purpose?



Any additional comments or questions you have on the desalination feasibility study?

Thanks

The question of how we got to a place where our water resources is scare has been absent from this presentation. The county needs to address management practices before it explores quick fixes

For the site selection, does it require the local government where it's located (i.e. BOS, City Council, Special District Board of Directors) at to approve it first before that site can be selected?

Thanks for the informative session. Is it true that counties like SLO can't really solve their water supply issues through storm water and reclamation efforts alone?

If this is to go forward there should be an effort to make sure that entities responsible for basin overdraft pay their fair share of the construction cost, not local taxpayers and average water users

a lot of this presentation and questions seemed skewed towards casting desal in a brighter light than has been shown in countless scientific and economic studies

Thank you for your time & input!

CommunityEngagement Session - September 15, 2025

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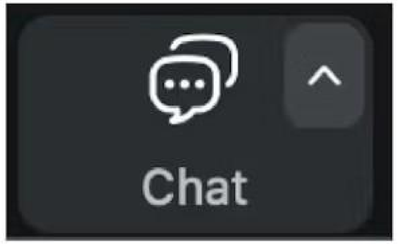
General Q&A on Desalination USBR Feasibility Study

Click the raise hand icon in the Zoom toolbar and wait to be unmuted

Or drop your question into the Zoom Chat



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