

Public Project Scoping Meeting

Potential Amendments to Seawater Desalination Provisions of California Ocean Plan



Jeanie Mascia Ocean Desalination Unit October 28, 2024

Ocean Desalination Team



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Purpose of today's meeting: Project Scoping

Inform the scope of potential amendments to the Seawater Desalination Provisions

- Share potential amendment topics
- Obtain feedback on potential amendment topics
- Obtain feedback on other amendment topics

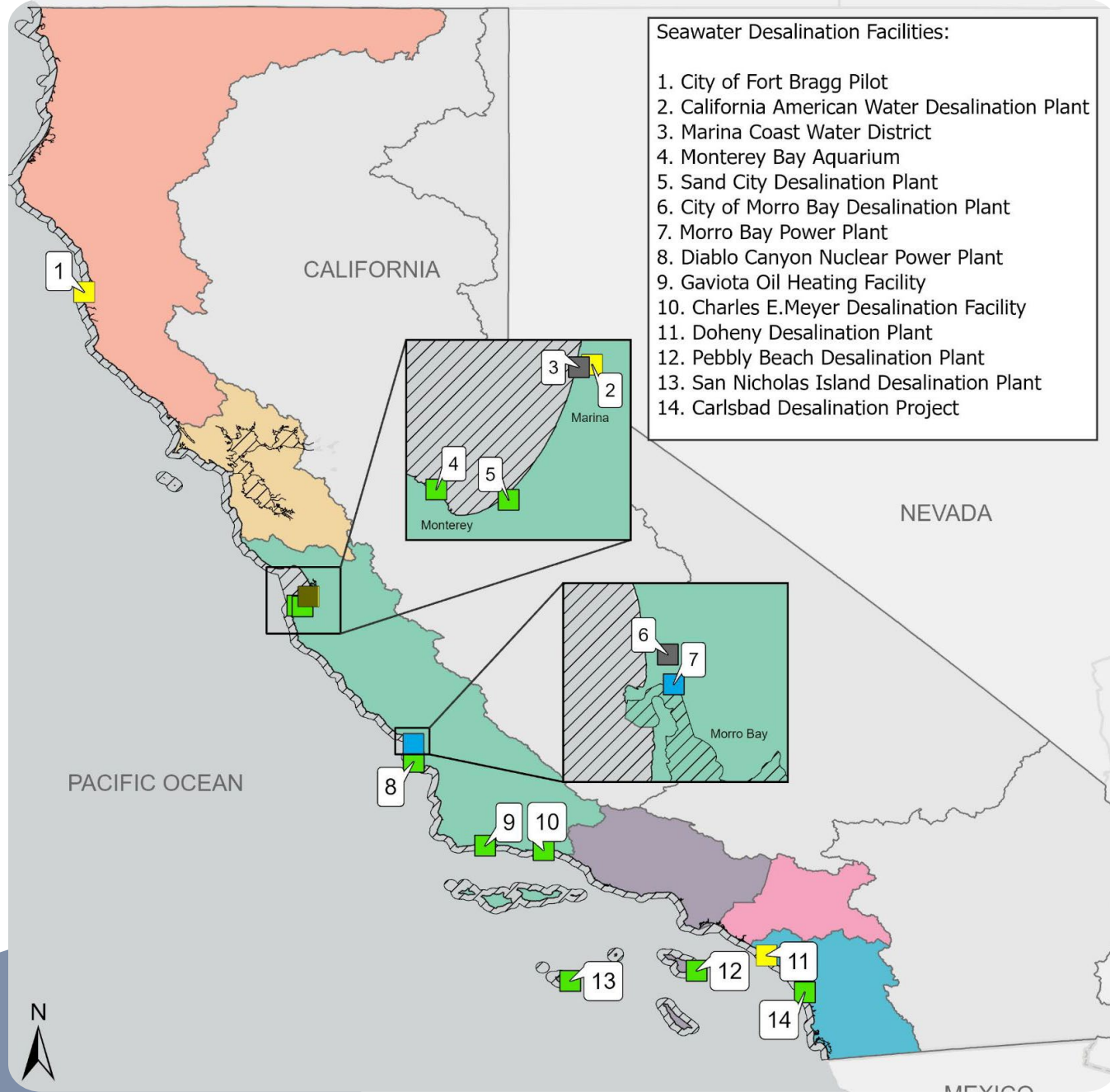
Meeting Logistics

- Meeting is being recorded.
- Comments will be accepted after the presentation.
 - In person: please sign in if planning to comment.
 - Virtually: please register through Zoom.

For Zoom link, email
DWQ-OceanDesal@waterboards.ca.gov

Outline for today

- I. Desalination in California
- II. Background of California Ocean Plan and Desalination Provisions
- III. Goals of Potential Amendments
- IV. Potential Amendment Topics
- Break (10 minutes)
- V. Opportunity for Comment



Seawater Desalination in California

- Supplements existing municipal water supplies.
- Uses various designs and technologies to extract seawater.
- Typically uses reverse osmosis to desalinate the water.
- Creates a hypersaline brine discharge.
- Affects marine environment through seawater intake and discharge of waste brine.
- Categorized separately from brackish desalination.

WATER QUALITY CONTROL PLAN
OCEAN WATERS OF CALIFORNIA



Established 1972
Revised 2019

STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

California Ocean Plan

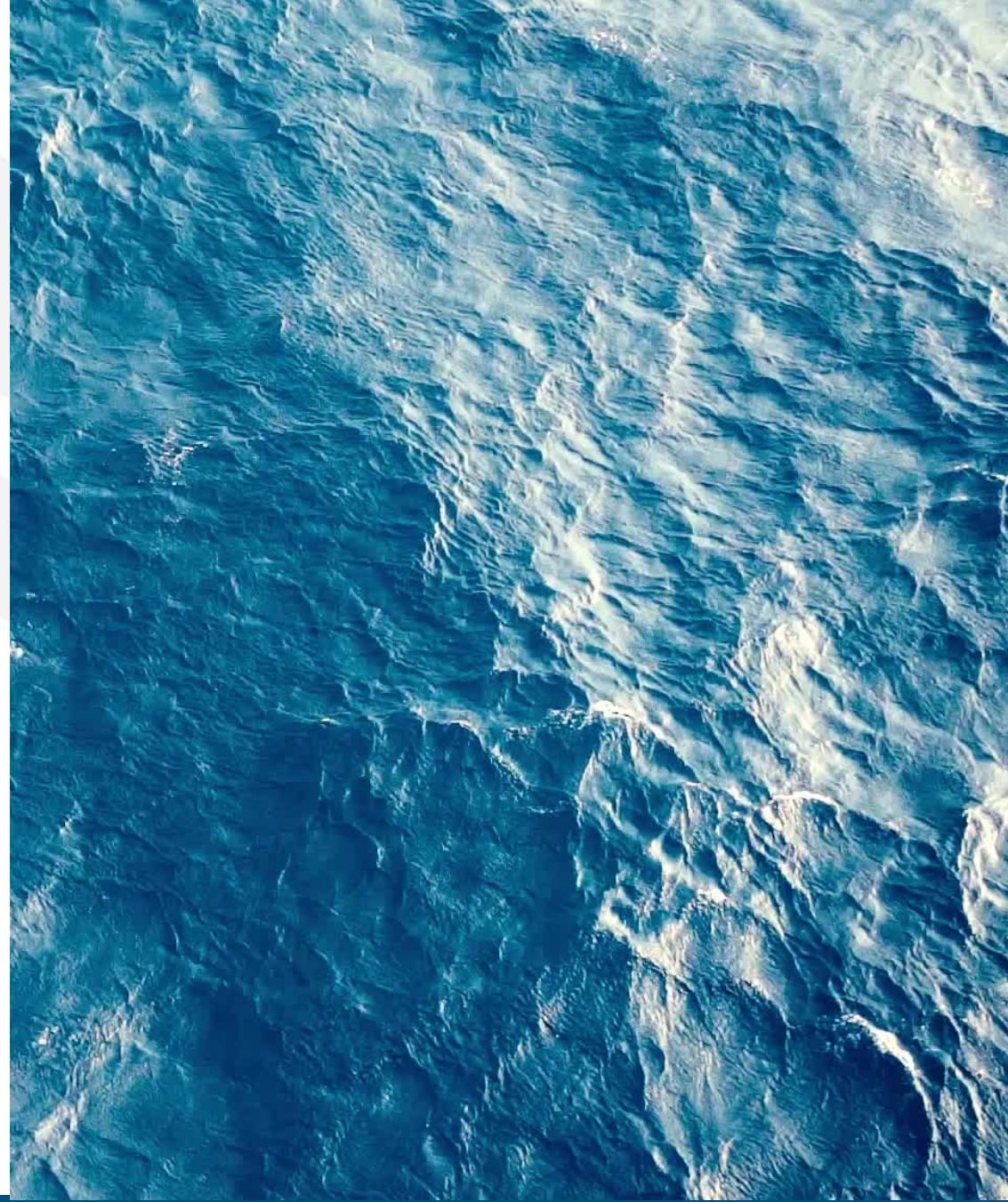
First adopted in 1972.

Purpose and authority is to protect ocean water quality.

Contains **provisions** for activities that affect quality and use of ocean waters.

Seawater Desalination Provisions in the Ocean Plan

- Adopted by State Water Board in May 2015.
- Contained in Chapter 3 of Ocean Plan.
- Provide a consistent framework for protecting marine life for both Water Boards and owners and operators to follow.
- Implement Water Code section 13142.5(b).



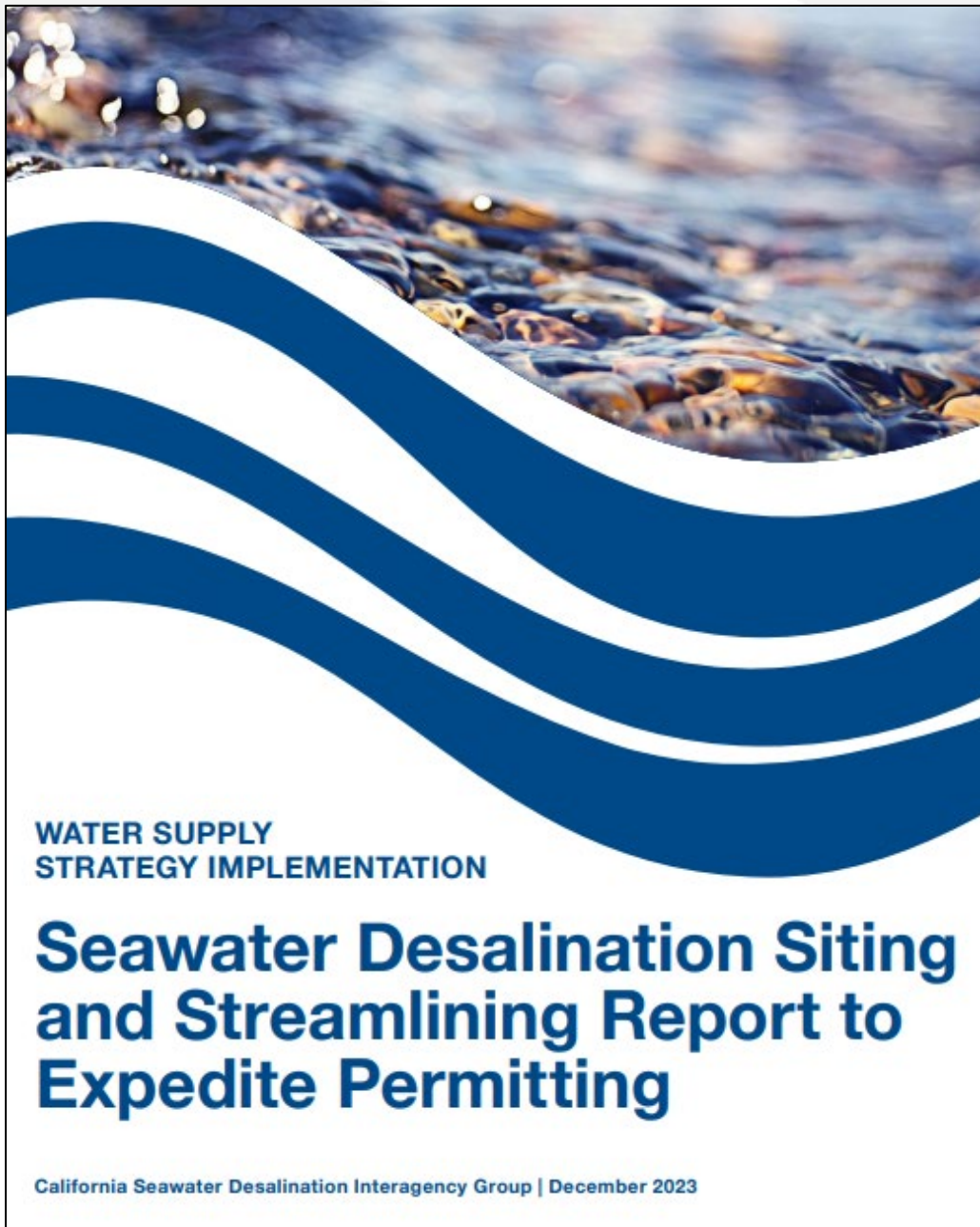
Water Code section 13142.5(b)

“For each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.”

Reason for Potential Amendments to Seawater Desalination Provisions

- Recommendation from the 2019 Triennial Review of the California Ocean Plan.
- Directive in ***California's Water Supply Strategy: Adapting to a Hotter, Drier, Future (Water Supply Strategy)***, Governor's Office, 2022.





Siting and Streamlining Report (2023)

Key Recommendations

- Site facilities to use preferred technologies
- Do concurrent agency review
- Conduct meaningful outreach
- Secure compensatory mitigation

Goals for Potential Desalination Amendments

1. Apply an integrated water resource management approach to support use of desalinated ocean water;
2. Advance and promote engagement with Tribes;
3. Address human right to water, racial equity, and environmental justice;
4. Provide a uniform, statewide approach for controlling potential adverse effects of seawater desalination facilities; and
5. Improve efficiency of planning and permitting.



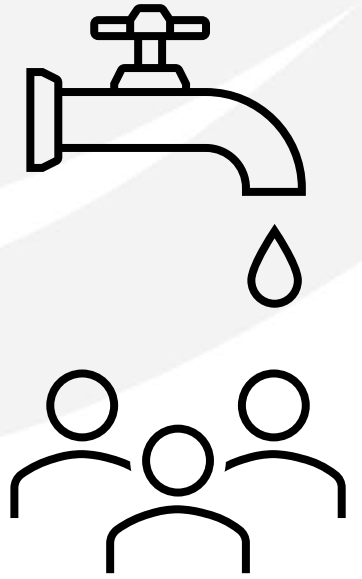
Potential Amendment Topics

1. Identified Need for Desalinated Water
2. Tribal Engagement
3. Racial Equity and Environmental Justice
4. Coastal Hazards
5. Subsurface Intakes, Feasibility Criteria
6. Subsurface Intakes and Coastal Aquifers
7. Discharge-Related Marine Life Mortality Reports
8. Sensitive Habitats and Prohibited Areas
9. Volumetric Annual Reporting
10. Compensatory Mitigation
11. Exemptions

Topic 1: Identified Need for Desalinated Water

Current requirements in Ocean Plan:

- Consider whether identified need for desalinated water is consistent with an applicable adopted urban water management plan prepared in accordance with Water Code section 10631 or other water planning documents (Chapter III.M.2.b(2)).



Considerations:

- This provision helps determine appropriate siting and sizing of facility to minimize impacts to marine life.
- Clarity is needed on how to interpret and implement this provision.

Topic 2: Tribal Engagement

Current requirement in Ocean Plan: None.

Considerations:

- Priority for Water Boards to engage with California Native American Tribes.
- Effective communication with California Native American Tribes helps advance decisions and policies that better protect water resources.
- Opportunity to provide direction on requirements for meaningful engagement and collaboration.

Topic 3: Racial Equity and Environmental Justice

Current requirement in Ocean Plan: None.

Considerations:

- Commitment to ensuring race does not predict the level of access to water or quality of water received.
- Commitment to ensuring fair treatment and meaningful involvement of all Californians regardless of race, color, national origin or income.
- Opportunity to provide direction on requirements for engagement.

Topic 4: Coastal Hazards

Current requirement in Ocean Plan: Owners/operators must evaluate a reasonable range of nearby sites, including sites that would likely support subsurface intakes (Chapter III.M.2.b).

Considerations

- Best site is one that will not be impacted by hazards such as erosion, landslides, earthquakes, tsunamis, flooding, storm surges, and sea level rise.
- Hazards must be considered to ensure longevity of desalination facilities.
- Coordination among permitting agencies would improve permitting efficiency.

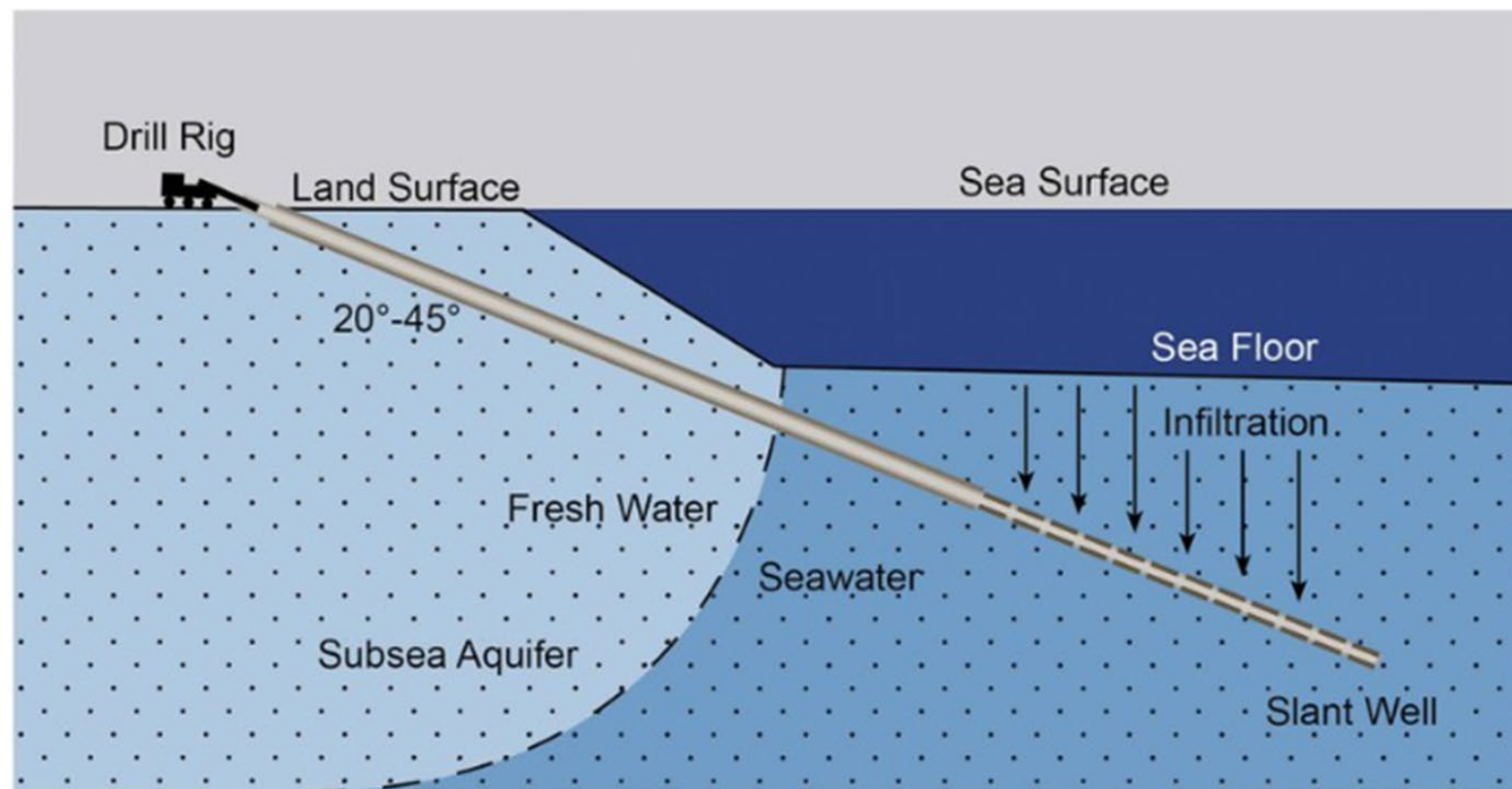
Topic 5: Subsurface Intakes and Feasibility Criteria

Current requirement in Ocean Plan:

Subsurface intakes are required unless the regional water board determines they are not feasible based on several factors (Chapter III.M.2.d(1)(a)).

Considerations:

Clarity needed on level of effort and specific studies for feasibility analysis.



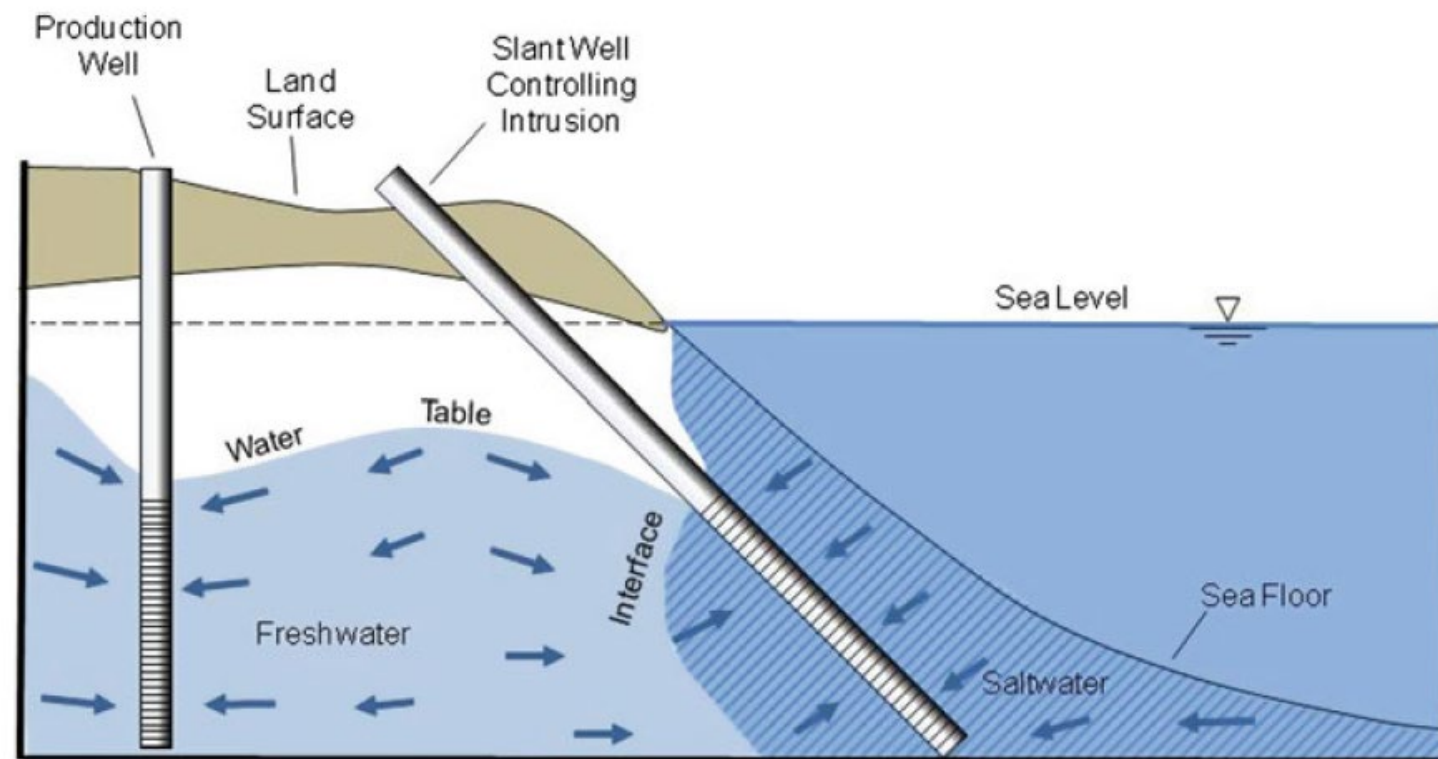
Missimer and Maliva. 2018. Environmental issues in seawater reverse osmosis desalination: intakes and outfalls. *Desalination*. 434(2018): 198-215

Topic 6: Subsurface Intakes and Coastal Aquifers

Current requirement: None.

Considerations:

- How do subsurface intakes affect coastal aquifers?



Williams, D.E. (2015). Slant Well Intake Systems: Design and Construction. In: Missimer, T., Jones, B., Maliva, R. (eds) *Intakes and Outfalls for Seawater Reverse-Osmosis Desalination Facilities*. Environmental Science and Engineering(). Springer, Cham. https://doi.org/10.1007/978-3-319-13203-7_13

Topic 7: Discharge-Related Marine Life Mortality

Current requirement in Ocean Plan: For operational mortality related to discharges of brine, report shall use any acceptable approach approved by regional water board for shear stress and/or incremental increase in mortality from a commingled discharge (Chapter III.M.2.e(1)(b)).

Considerations:

- Consider a recommended methodology for assessing discharge-related mortality from shear stress and/or incremental increase in mortality.

Topic 8: Volumetric Annual Reporting

Current requirement in Ocean Plan: None.

Considerations:

- Need for information on volume of desalinated water produced
 - Comprehensive water supply portfolio
 - Understand efficiency of water production (e.g., how much drinking water is produced from withdrawn seawater)

Topic 9: Sensitive Habitats and Prohibited Areas



Current requirement in Ocean Plan: Analyze feasibility of locations that avoid impacts to sensitive habitats and sensitive species (Chapter III.M.2.b(3)); facilities shall not be in, and shall be placed a reasonable distance from, Marine Protected Areas (MPAs) and State Water Quality Protection Areas (SWQPAs) (Chapter III.M.2.b(7)).

Considerations:

- Concerns about proximity of intake and discharge structures to managed waters, as well as operations in deep sea environment.

Topic 10: Compensatory Mitigation Timing

Current requirement in Ocean Plan:

- Owner or operator of a facility shall submit a Marine Life Mortality Report estimating marine life mortality resulting from construction and operation of the facility after implementing the facility's required site, design, and technology measures (Chapter III.M.2.e(1)).
- Full mitigation is required to replace all forms of marine life or habitat lost due to the construction and operation of a desalination facility, and the best available mitigation measures must be used (Chapter III.M.2.e).

Considerations:

- Ocean Plan does not specify when MLMR or mitigation plan must be completed.
- Allowing facilities to commence operation before marine life mortality and mitigation is fully assessed leads to immediate, unmitigated impacts to marine life.

Topic 11: Exemptions from Desalination Provisions

Current requirement in Ocean Plan: Some desalination facilities are exempt from certain desalination provisions (Chapter III.M.1.a):

- operated by federal agency
- government-operated portable facilities withdrawing less than 0.10 million gallons per day
- facilities under a temporary waiver that operate to serve a critical short-term water supply during state of emergency

Considerations:

- Pilot projects.
- Water Code section 13142.5(b) still applies to all facilities, regardless of exemption status.

Comment Deadline and Submission Information

Written comments due 12:00 noon November 13, 2024

Mail to:

Ocean Desalination
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Hand deliver to:

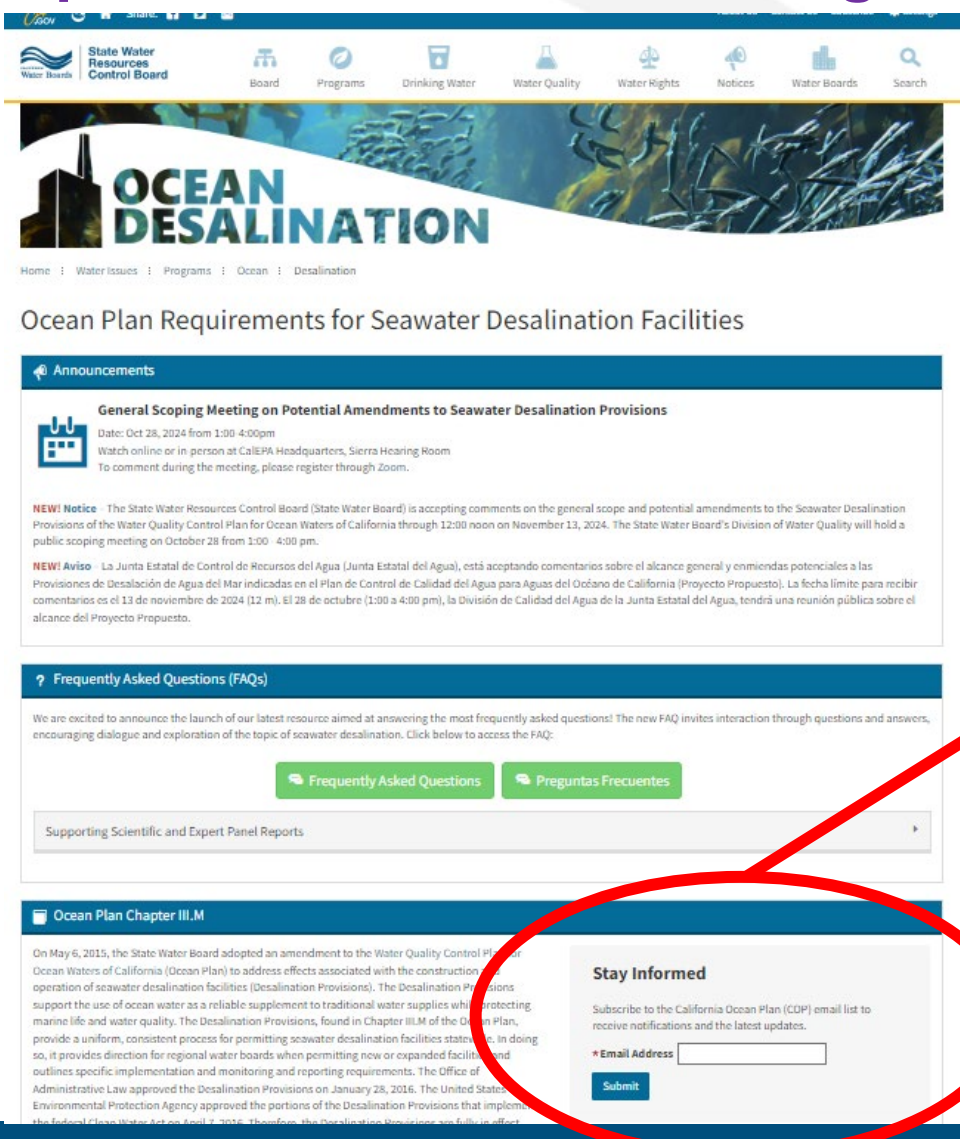
Ocean Desalination
State Water Resources Control Board
1001 I Street, 15th Floor,
Sacramento, CA 95814

Or Email to:

DWQ-OceanDesal@waterboards.ca.gov

Stay up-to-date and involved

https://www.waterboards.ca.gov/water_issues/programs/ocean/desalination/



Stay Informed

Subscribe to the California Ocean Plan (COP) email list to receive notifications and the latest updates.

*Email Address

Submit

Potential Amendment Topics

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