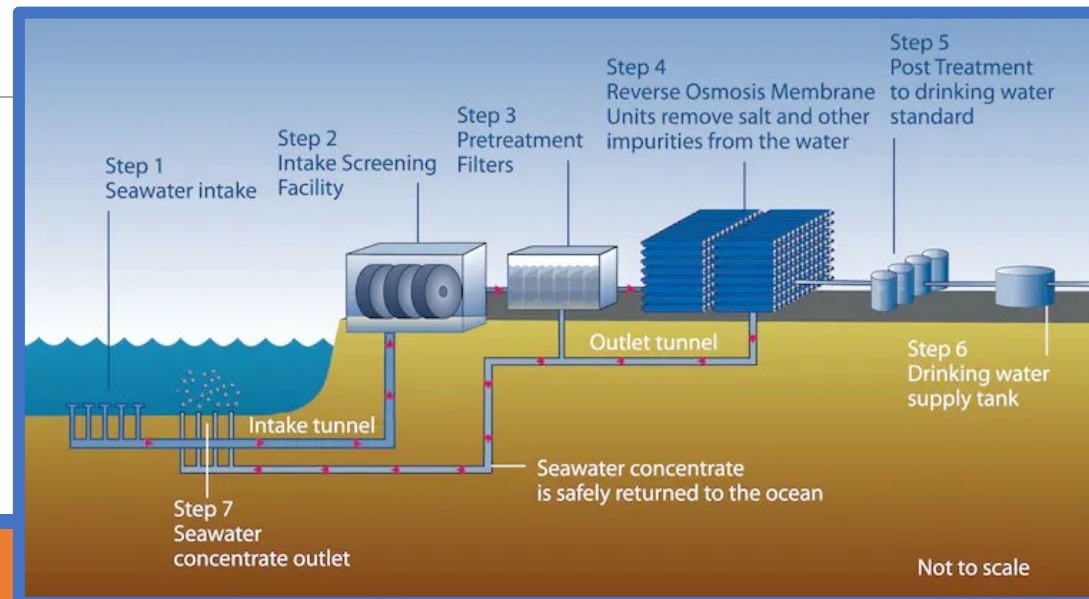




# Challenges and Opportunities to Meet Water Supply Strategic Goals – Ocean Desalination

Water Quality Coordinating Committee Meeting, October 27-28, 2022

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Executive Officer  
Santa Ana Water Board



# Water Code Section 13142.5(b)

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*‘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.**’*



# SITE: Challenges & Opportunities

## Onshore:

- Facility location and climate change conditions (i.e., Sea Level Rise)
- Facility location and proximity to environmental justice concerns

## Offshore:

- Feasibility of surface versus subsurface intakes
- Proximity to wastewater discharge, sensitive habitats, recreational areas, etc.

## Need for Water Supply:

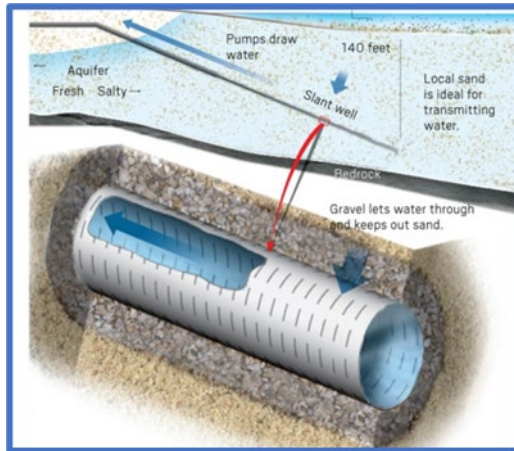
- Water agencies have demonstrated a need for the water source
- Affordability of the new water supply



# TECHNOLOGY/DESIGN: Challenges & Opportunities

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## Intake:

- Feasibility of surface versus subsurface intakes, and technology used and design of intakes (expertise is needed)
- Hydrogeology and seismology conditions
- Intake system evaluation of effects on other coastal systems (i.e., seawater barrier)
- Calculate marine life impacts

## Discharge:

- Effectiveness of diffusers, size of the brine mixing zone (expertise is needed)
- Proximity to wastewater discharge, sensitive habitats, recreational areas, etc.
- Calculate marine life impacts



TECHNOLOGY

BEST COMBINATION  
AVAILABLE AND  
FEASIBLE

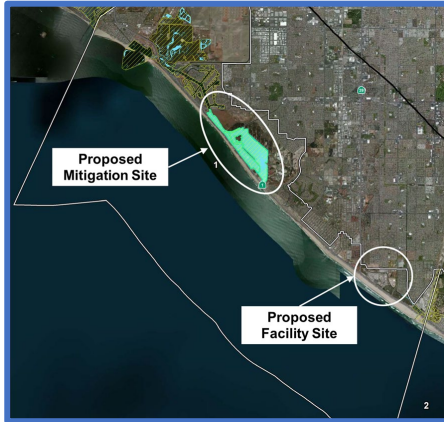
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## MITIGATION

# MITIGATION: Challenges & Opportunities



### Marine Life Mortality:

- Entrainment study requires special, relevant, and timely data (expertise is needed)
- Calculate brine mixing zone, a diffuser designs selected to reduce shearing-related mortality (expertise is needed)

### Compensatory Mitigation Project:

- Identify projects that expand, restore, or create - kelp beds, estuaries, coastal wetlands, natural reefs, MPAs, etc. (expertise is needed)
- Determine the appropriate mitigation ratio to compensate for impacts (expertise is needed)
- Location and timeliness of the proposed mitigation project





# What if...



# ...Possibilities

- Data needed to make sound decisions
- Subsurface intake is feasible
- Product water goes directly into potable distribution system feasibly
- Protection of sensitive habitats/marine protected areas
- Discharge is commingled with another discharge
- Mitigation covers impacts immediately and in the source water body
- Site is protected from climate change

