

# *OCEAN DESALINATION REGULATORY PERMITTING UNDER THE NEW OCEAN PLAN AMENDMENTS*

*MSSC Annual Salinity Summit  
Las Vegas, NV*

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9:00 AM*

*Kevin Thomas, CEP  
Senior Environmental Manager*

**Kimley»Horn**

**Kimley»Horn**

# TOP 10 REGULATORY DECISION DRIVERS

## "The Big Three", Plus One

1) Intake

2) Discharge

3) Energy/GHG

4) CCC SLR Guidance

5) Supply Alternatives

6) CEQA/NEPA Compliance

7) Stakeholder/Public Response

8) Product Water Quality

9) Local Coastal Programs

10) Navigating the Permit Process



# OCEAN PLAN AMENDMENTS - INTAKE & DISCHARGE

*preliminary / TBD*

## Intake Impacts & Mitigation Panel

- Two Tracks
  - Track 1 - subsurface intakes
  - Track 2 - wedgewire screens
- Mitigation - \$2.70 to \$3.06 per MG

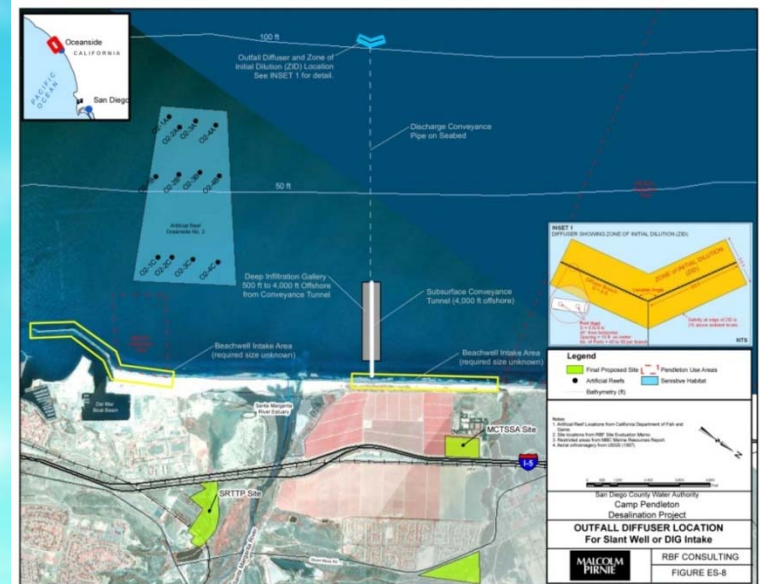


## High Salinity Study

- No Effect @ 41ppt

## Brine Discharge Panel

- 5% salinity increase within 100m
- 20:1 dilution ratio
- Diffusers
  - turbulence mortality
  - turbidity



# OCEAN PLAN AMENDMENT CURRENT STATUS

## SED DUE SOON !

### SWRCB Researching:

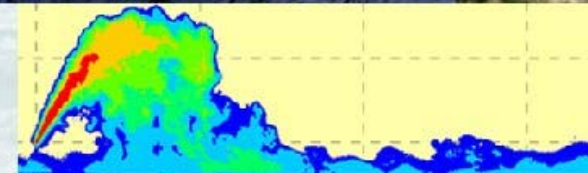
- Definition of new and existing facilities
- Legal Authority and Budget Authority to collect and spend mitigation fee

### SWRCB Board Direction

- Exceptions for existing facilities
  - Compliance schedules (evaluation and compliance)
- Raw brine disposal
  - BAT/rebuttable presumption (feasibility criteria)
- Intake screens
- Mitigation Fee
  - Calculation, credits, mitigation preference, oversight

Management of Brine Discharges to Coastal Waters  
Recommendations of a Science Advisory Panel

Prepared for:  
The State Water Resources Control Board



Southern California Coastal Water Research Project

Technical Report 694 - March 2012



Statewide  
Coastal Water  
Research  
Project  
Established 1969

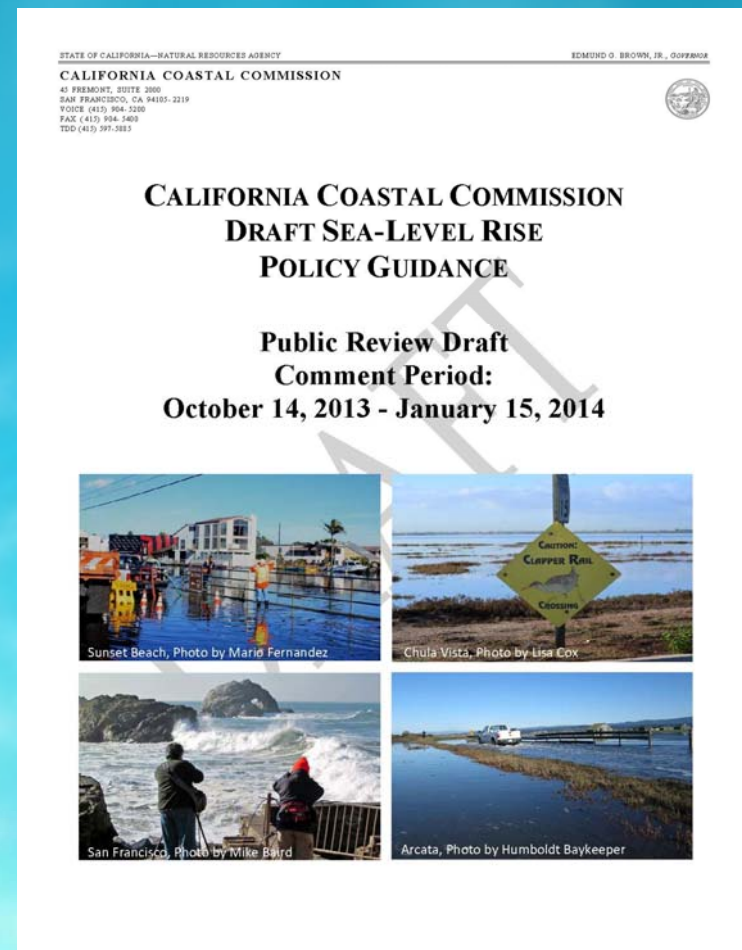
# ENERGY MINIMIZATION/GREENHOUSE GAS EMISSIONS

- *AB32 /Executive Order S-3-05*
  - 80% reduction by 2050
- *RPS – 33% by 2020*
- *Appropriate Target?*
  - Net Zero
  - APCD Threshold (10,000 MT)
  - “Carbon Neutral”
  - CEQA – “reasonable/feasible”
- *Mitigation*
  - Carbon credits @ \$12/MT
  - Approx. \$5k-\$15k/year/MGD



# COASTAL EROSION - SEA LEVEL RISE GUIDANCE

- *Key assumptions*
  - *Ocean thermal expansion*
  - *Melting ice caps*
  - *CCC deems “best science”*
- *Evaluate for all CZ projects*
  - *Flooding*
  - *Coastal Erosion*
  - *Wave run-up/Storm Surge*
  - *Tsunami*
  - *Beach sand transport*
  - *Seawater Intrusion*
- *“Guidance”, kind of...*

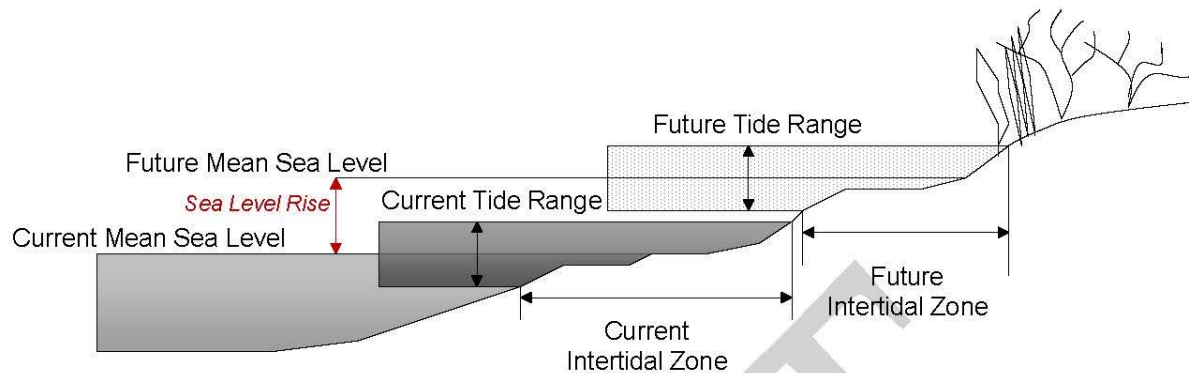


# IMPLICATIONS FOR COASTAL PROJECTS

- 4.68" - 24" by 2050
- 16.56" - 65.76" by 2100
  - s/o Cape Mendocino
- Also Consider:
  - Tides, low pressure, storm surge, storm waves, El Nino (ENSO), Tsunami

Table 15. Factors that Influence Local Water Level Conditions

Factors Affecting Water Level	Typical Range for CA Coast (m)	Typical Range for CA Coast (feet)	Period of Influence	Frequency
Tides	1 – 3	3 – 10	Hours	Twice daily
Low pressure	0.5	1.5	Days	Many times a year
Storm Surge	0.6 – 1.0	2 – 3	Days	Several times a year
Storm Waves	1 - 5	3 – 15	Hours	Several times a year
El Niños (within the ENSO cycle)	< 0.5	<1.5	Months - Years	2-7 years
Tsunami waves	6 – 8	20 – 26	Minutes to Hours	Infrequent but unpredictable
Historic Sea Level, over 100 years	0.2	0.7	On-going	Persistent
NRC State-wide Sea Level Projections 2000 – 2050	0.2 – 0.4	0.7 – 1.4	Ongoing	Persistent
NRC State-wide Sea Level	0.1 – 1.43 m (North of Cape Mendocino)	0.3 – 4.69 ft (North of Cape Mendocino) .38 – 5.48 ft (South of Cape Mendocino)	Ongoing	Persistent



The conversions between feet and meters have been used and they are not exact conversions. Information provided is based on communications from Dr. Robert Guza (Scripps Institution of Oceanography) and William O'Reilly (Scripps Institution of Oceanography) and personal judgment of staff.

Figure 11. Sea-level rise and Changes to Tide Range and Intertidal Zone.

# ADDITIONAL PERMITTING FACTORS

## *PARTIAL LIST*

- 5) *Supply Alternatives*
- 6) *CEQA/NEPA Compliance*
- 7) *Stakeholder/Public Response*
- 8) *Product Water Quality*
- 9) *Local Coastal Program*
- 10) *Navigating the Permit Process*





# POTENTIAL OCEAN DESALINATION PERMITS (PARTIAL LIST !)

FEDERAL	
Section 404 Permit	U.S. Army Corps of Engineers
Section 10 Permit	U.S. Army Corps of Engineers
Section 7 Consultation	USFWS, NOAA Fisheries (also MMPA, EFH)
FOSL/FOST (ROW)	BLM, DOD, ... (for ROW)
Consultation/PATON	US Coast Guard
Section 106 Consultation	SHPO
UIC Brine Injection Permit	EPA
NEPA Compliance	Federal permitting/funding agency
STATE	
Cert of Public Conv. and Necessity	CPUC (if private retailer)
Coastal Development Permit/LCPA	Coastal Commission
Lease/Amendment	State Lands Commission
Streambed Alteration Agreement	CDFW
CESA Section 2081 Permit	CDFW (also MMA, ASBS, SWQPA)
NPDES Permit	RWQCB
401 Certification	RWQCB
Waste Discharge Requirements	RWQCB
Easement/Encroachment/Lease	Caltrans, State Parks...
Domestic Water Supply Permit	CDPH
AFC Amendment	CEC
Water Rights Permit	SWRCB
Permit to Construct/Operate	Air Pollution Control District
LOCAL	
Coastal Development Permit	County/City
Encroachment Permits	County and Cities
Permit to Construct	County Env. Health Dept
Conditional Use Permit	City/County
Use/ROW/Lease approvals	Private parties
Water contracts	Partner agencies/parties

# REGULATORY PERMITTING CONSIDERATIONS

- *Begin with the end in mind*
  - *Integrated Regulatory Permitting*
  - *“Eyes Wide Open”*
- *Facility Siting*
  - *LCP, Coastal Hazards*
- *Project Design Alternatives*
  - *Intake, Discharge*
  - *Study recent permit efforts*
- *Project messaging & outreach*
  - *Regulatory Agency briefings*
  - *Community Benefits*
  - *Elected Officials*



# *QUESTIONS ?*

*Kevin Thomas, CEP  
Senior Environmental Manager*

**Kimley»Horn**

[Kevin.Thomas@Kimley-horn.com](mailto:Kevin.Thomas@Kimley-horn.com)

(714) 269-7427

**Kimley»Horn**