

# **South Orange Coastal Ocean Desalination Project (Dana Point) Status**

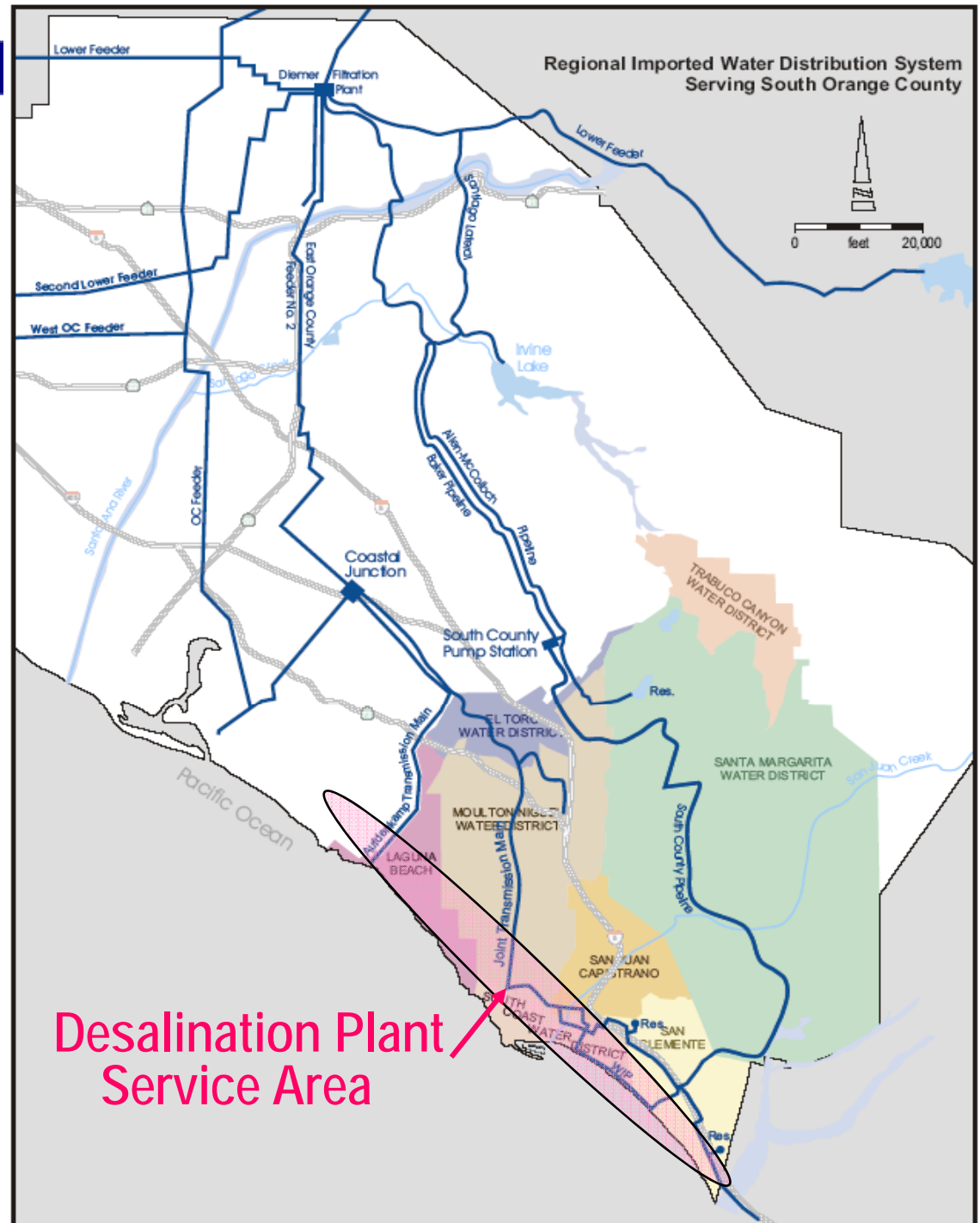
August 25, 2009

Briefing for MET Desalination and  
Water Recycling Committee



# South Orange Coastal Ocean Desalination Project

- 15 million gallons per day meets about 25% of the 2025 water demands for:
  - Laguna Beach
  - San Clemente
  - San Juan Capistrano
  - Moulton Niguel WD
  - South Coast WD
- All five agencies can physically receive the water into their systems



# Project is Unique and Well Supported

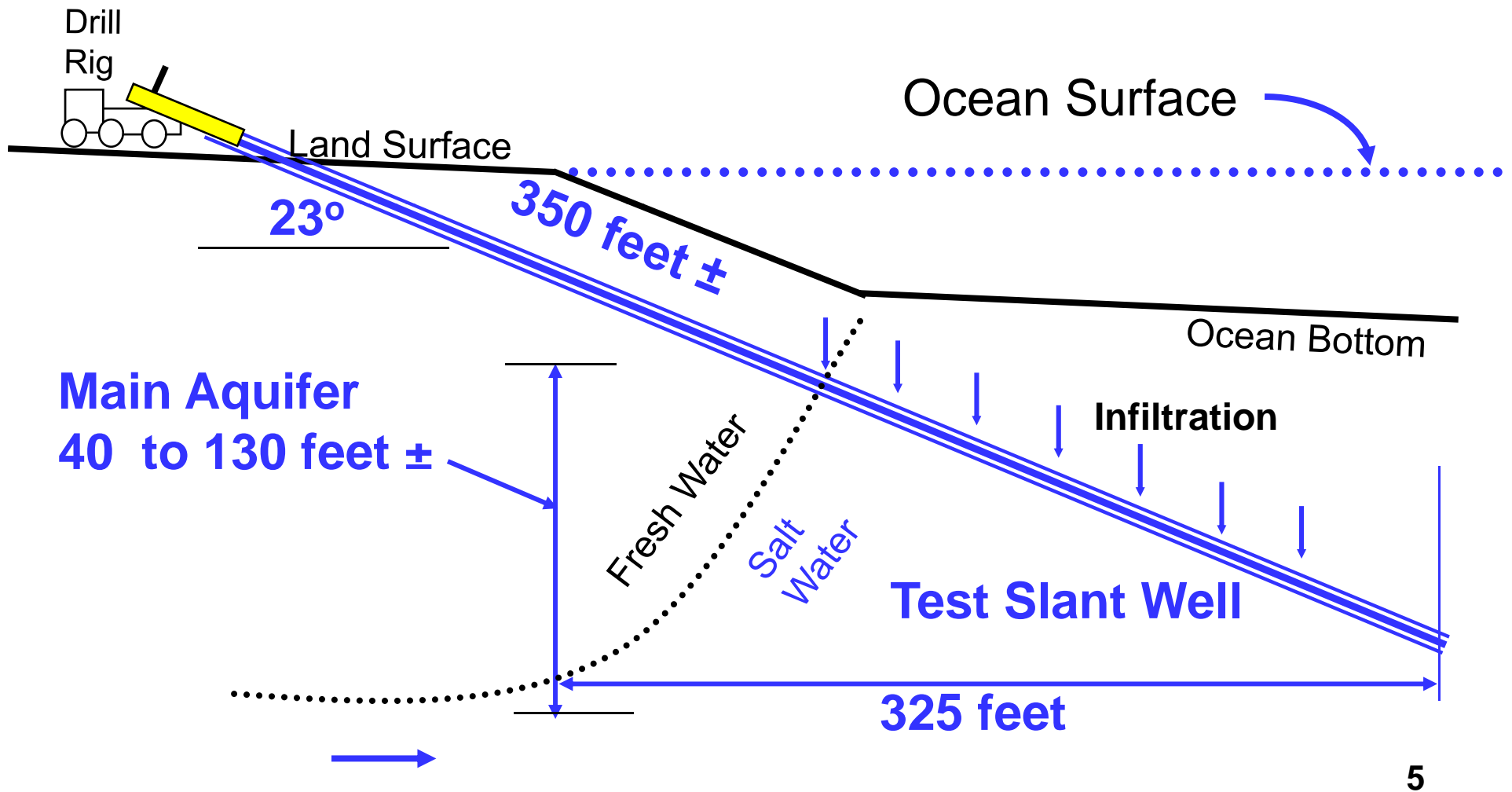
- NOT associated with a Coastal Power Plant
- Utilizes slant well intake system to be protective of the ocean environment
- Utilizes an EXISTING ocean outfall for brine discharge; makes discharge closer in salinity to that of the natural ocean water to improve mixing, reduces suspended solids
- Concept is supported by the local environmental community, local agencies (water and cities) and supported by the California Coastal Commission, Department of Water Resources, Bureau of Reclamation and State Parks

# South Orange Coastal Ocean Desalination Project

## Concept Project Layout



# *Test Slant Well Schematic*



# South Orange Coastal Ocean Desalination Project - Overview

- Construction of a 15 million gallon per day South Orange Coastal Ocean Desalination Plant using a slant well subsurface intake to produce about 16,000 AF per year is **FEASIBLE**
- Project cost = \$136M (Boyle 2007) to \$152M
- Cost of water = \$1287 (Boyle 2007) to \$1356 per acre foot with allowance for San Juan Basin mitigation
- MWDOC has an executed contract from MET to provide \$250 per AF towards the cost of the water

# Objectives for Three-Year Extended Pumping & Pilot Studies

- Extended pumping to pull in ocean water
- Validate groundwater model and beach wellfield capacity
- Address upstream groundwater impacts
- Assess water quality and microbial fouling
- Confirm alluvial aquifer pretreatment capability
- Evaluate water quality and post-treatment options
- Conduct pilot plant study, test advanced membranes, develop process treatment specifications
- Run materials corrosion tests
- Refine Project cost estimates

# Pilot Plant & Pumping Project Status

1. Pump was delivered.
2. Mobile Test Facility ordered.
3. Construction contract awarded.
4. Secured all permits.
5. Executing Right of Entry with State Parks.
6. Construction in Oct 2009 – Feb 2010
7. Pumping March – Sept 2011
8. Pilot Plant Testing March 2011 – Sept 2011
9. Complete reports and update groundwater model – December 2011



# San Juan Basin Groundwater Modeling and Coordination Work

- Work initiated to coordinate groundwater desalters and the ocean desalter – maximize production of water out of the basin
- Examine groundwater basin pumping issues
- Estimate quantity of groundwater going to the ocean desalter
- Estimate ocean desalination impacts to pumping in the lower basin
- Develop mitigation programs

# *Drilling Site on Doheny Beach*



# *Dual Rotary Drill Rig*



# *Welding Screen Joints*



# Potential Help from MET During the Phase 3 Investigations

- Funding Assistance
- Phase 3 Permitting and Feasibility Analyses
- Water Quality Testing
- Pilot Plant Testing
- Materials Performance
- Securing/Wheeling Energy
- Full Scale Permitting Work
- Water Quality Integration with Retail Systems
- Environmental Work
- Securing Grants

# Potential MET Policy on Ocean Desalination and Application for Dana Point Project

<u>Policy</u>	<u>Application at Dana Point</u>
Full MET Ownership	Too small at 15 MGD
Partial MET Ownership as Test Case w/Sale of Water	Feasible and supported by Local Agencies
Technical Participation as a Learning Opportunity	Feasible and supported by Local Agencies
Partial Capitalization of per AF Payment to Mitigate Up Front Costs	Feasible and supported by Local Agencies
Any Assistance – Technical or Financial	Feasible and supported by Local Agencies
Current Policy – limited support	Not Recommended

# Poseidon Project at Huntington Beach

- Negotiations currently underway between Poseidon, MWDIOC and twelve local agencies (includes Santa Ana and Anaheim from MET member agencies)

# Questions/Comments