The Dana Point Ocean Desalination Project

Recommended Next Steps and Costs Thereof

March 2008

What We Need From You Today

- Consider joining South Coast WD, Moulton Niguel WD & Laguna Beach County WD who have already agreed to participate in the Project Participation Agreement
  - Move forward on next steps for the project – involves $4.8 M in work over next 3 ½ years
  - Others will be considering joining
  - Review costs and commitments
  - Review Off-ramps

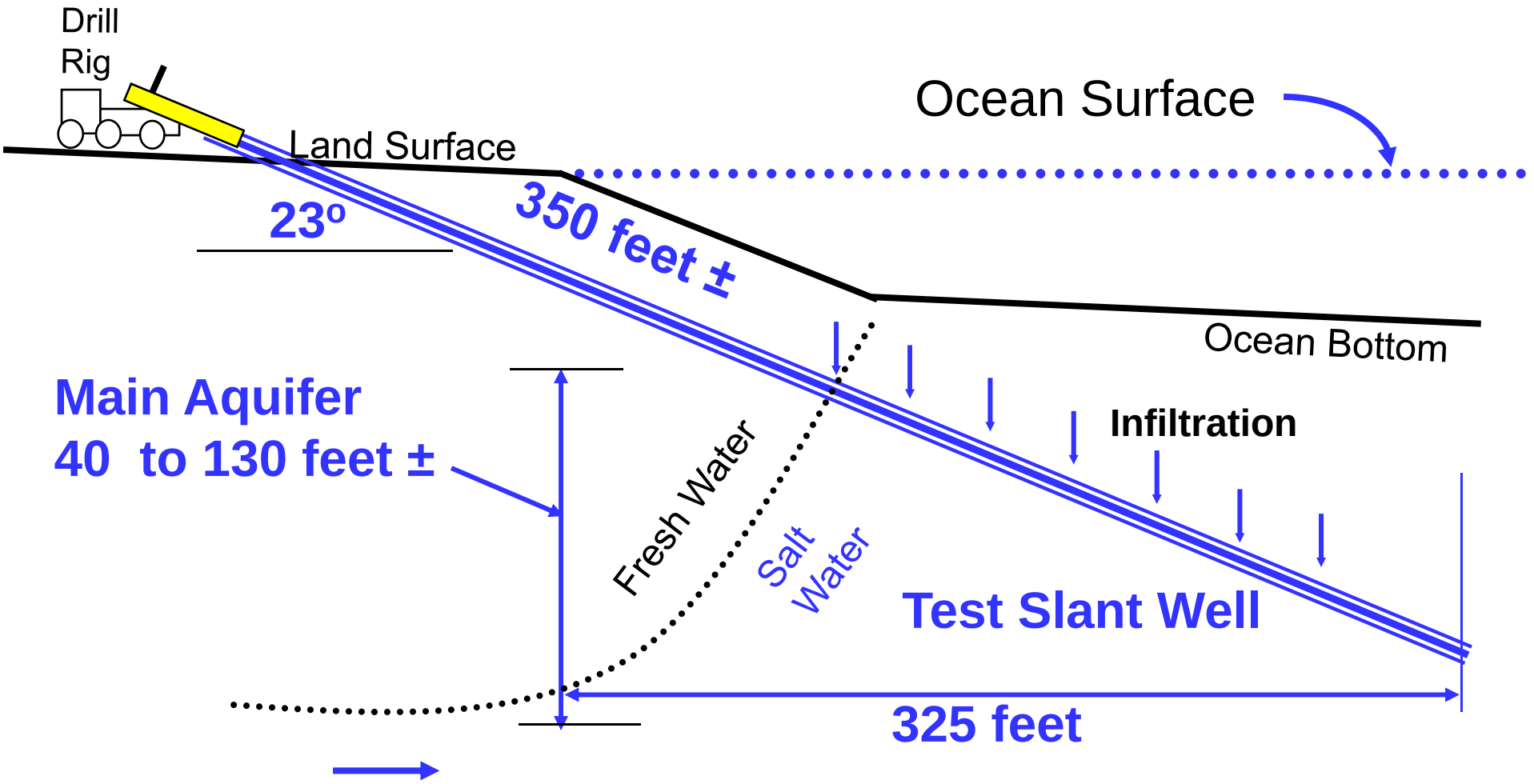
Dana Point Ocean Desalination Project

Concept Project Layout

Dana Point Ocean Desalination Project - Overview

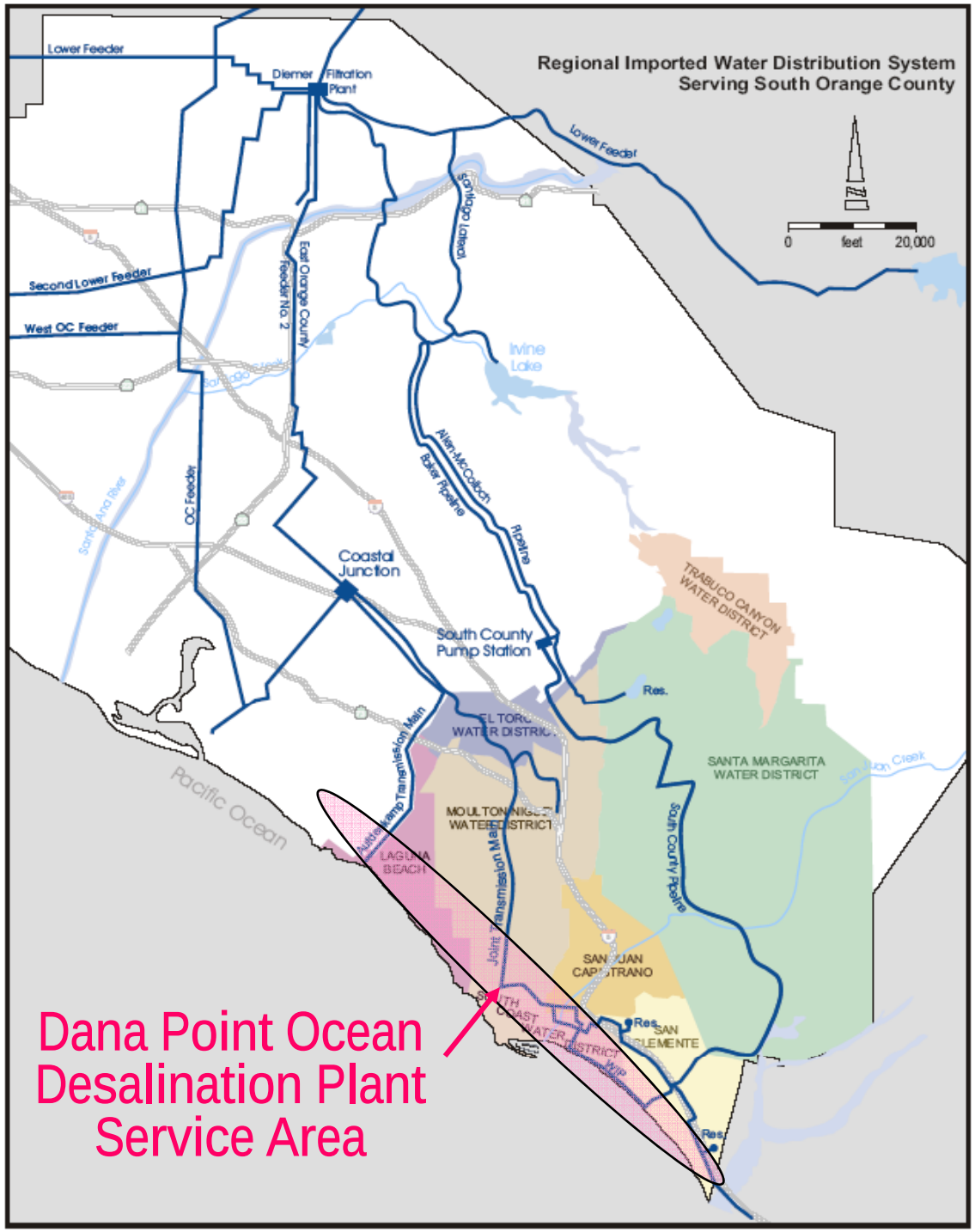
- Construction of a 15 million gallon per day Dana Point Ocean Desalination Plant using a slant well subsurface intake to produce about 16,000 AF per year is FEASIBLE
- Project cost = $136 million (Boyle 2007)
- Cost of water = $1287 per acre foot (Boyle 2007)
- MWDOC has an executed contract from MET to provide $250 per AF towards the cost of the water
- The project is sensitive to environmental issues and supported by Surfrider Foundation and OC Coastkeepers

Test Slant Well Schematic



Dana Point Ocean Desalination Plant

- 15 MGD 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



Why Ocean Desalination?

- Supply Reliability
  - New dependable water supply source
  - Independent of drought cycles
  - Part of MET's Integrated Resources Plan
  - Delta export cutbacks (Wanger) and other risks (Earthquakes, Flooding, other Fish)
  - Climate change - threats to imported supplies
  - Increased local supply under MET allocation
- System Reliability
  - Local supply under local control
  - Supply at end of distribution system
  - Emergency supply at constant delivery rate
- MET Funding w/State and Federal Potential

Unit Project Costs

- Project Yield
  - Capacity at 15 MGD
  - Yield at 95% Load Factor = 15,962 afy
- Cost Per Acre-Foot of Yield(1)
  - Capital $552/af 43%
  - Energy $438/af 34%
  - O&M $297/af 23%

  Total $1287/af 100%

  Less $250 (MET contribution)

  Net $1037/af

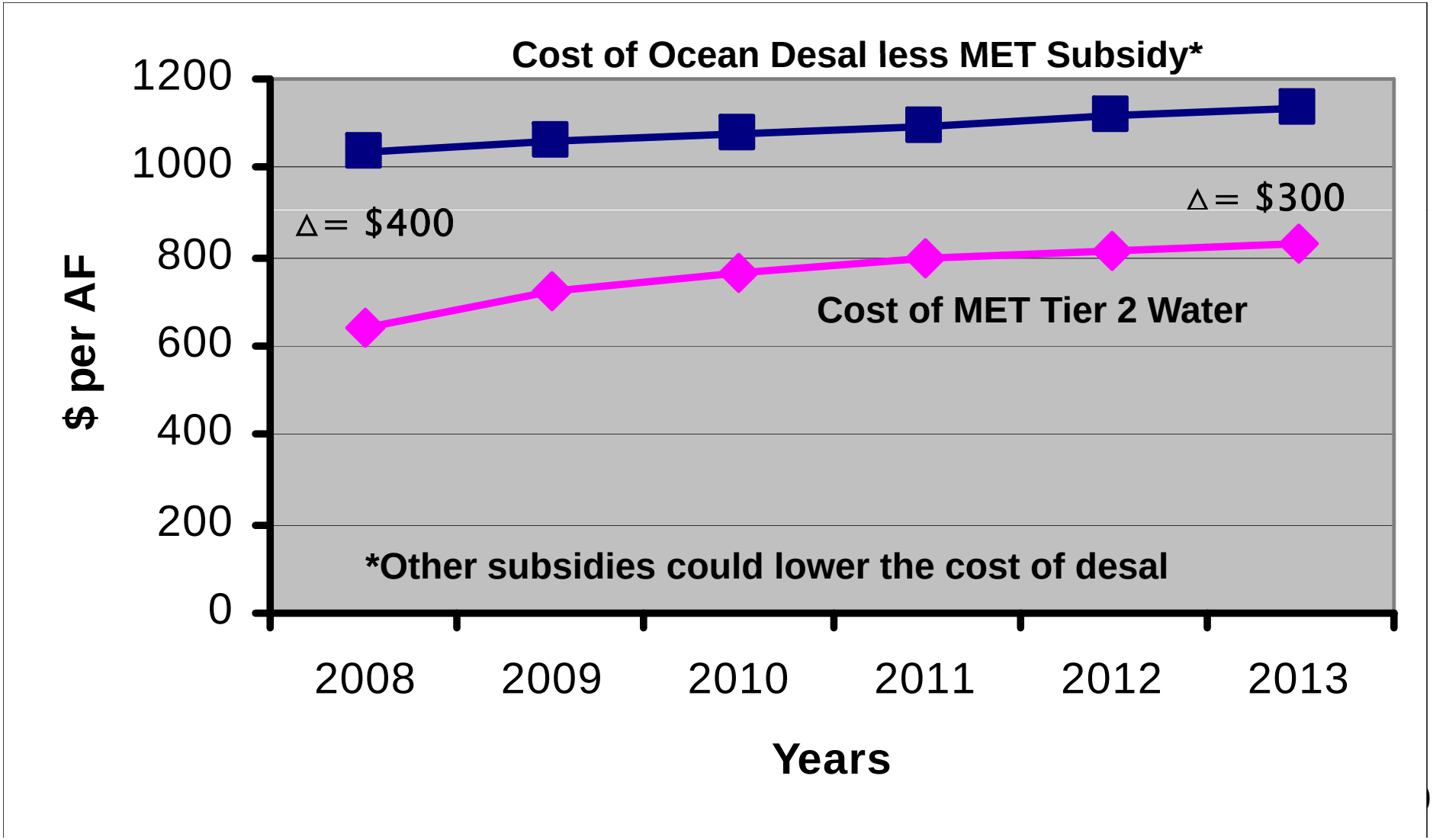
Notes: (1) Interest at 5% and bond repayment at 30 years
(2) Electrical energy at 11.5¢ (SDG&E applicable rate)
(3) Land and site preparation in contingency

Potential Impacts on Costs

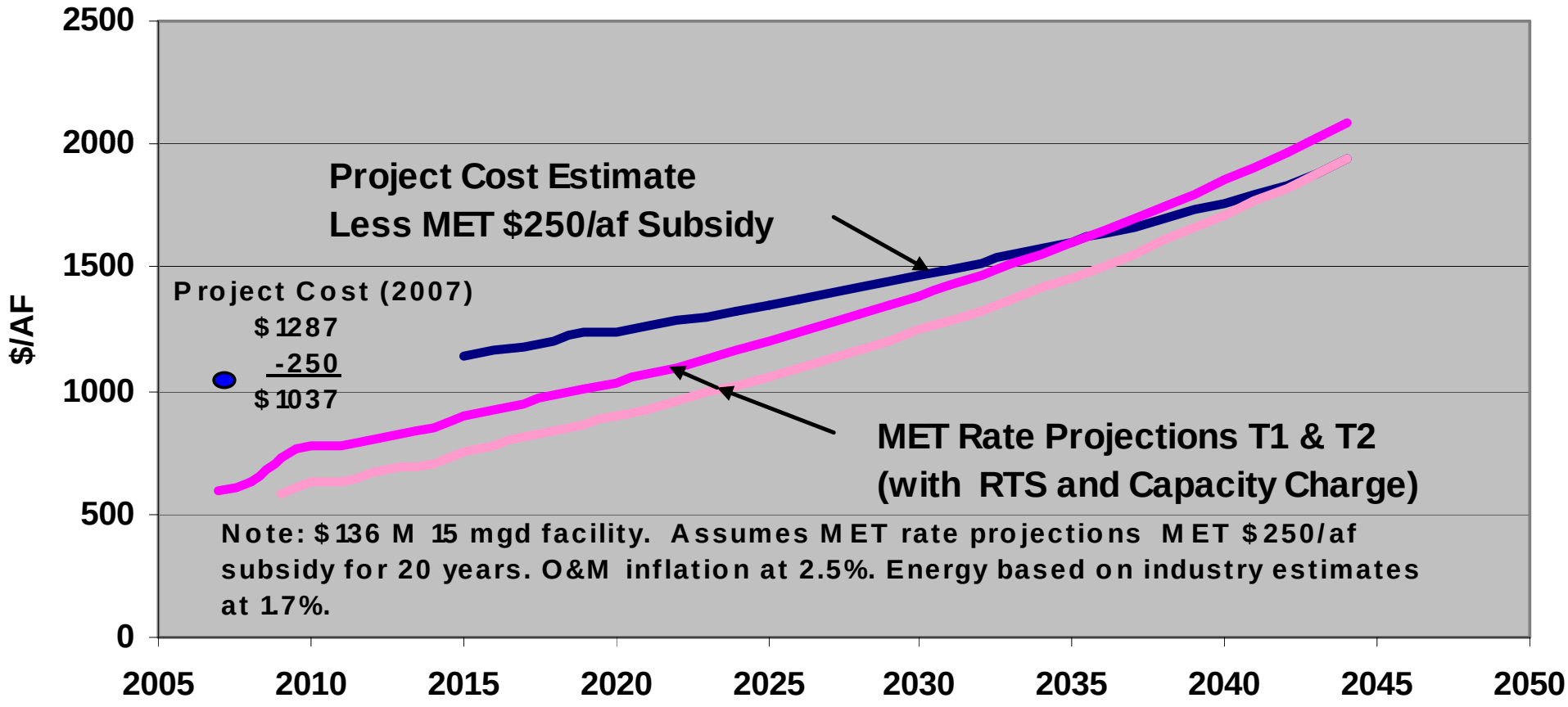
(decrease) (increase)

- Technological advances
- Negotiations with SDGE on load shedding
- MET incentive
- State and Federal Funding
- Energy Costs
- Construction costs

Project Unit Costs vs MET Rates
Short Term Projection



Project Unit Costs vs MET Rates Long Term Projection



Objectives
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
- Run materials corrosion tests
- Refine Project cost estimates

Estimated Costs Thru 2010-11 (3½ years)

CEQA/NEPA	$50,000
Permitting/Mitigation Fees	$310,000
Equipment, Installation, Prof. Services and Lab Tests	$2,690,000
Project Testing	$850,000
Federal Advocacy	$100,000
Other Prof Services	$300,000
Contingency	$500,000
Total	$4,800,000
Less DWR Grant	**$1,500,000**
NET Local (1)	**$3,300,000**

(1) If no additional outside funding obtained

Estimated Costs, Off Ramps and Schedule

- **Off Ramp** -

  A logical stopping place where agencies or an agency can choose to stop funding and participating in the project

Estimated Costs, Off Ramps and Schedule

- **First Off Ramps – (FY-09)**
  - If, for any reason, the project is unable to secure the Coastal Commission Permit, the project will be halted and discussions held with the Participants on how to proceed; agencies can elect to drop out.
  - At about the same time, if the bids or the estimated costs for the next phase of the work become excessive, discussions will be held with the Participants; agencies can elect to drop out.

Estimated Costs, Off Ramps and Schedule

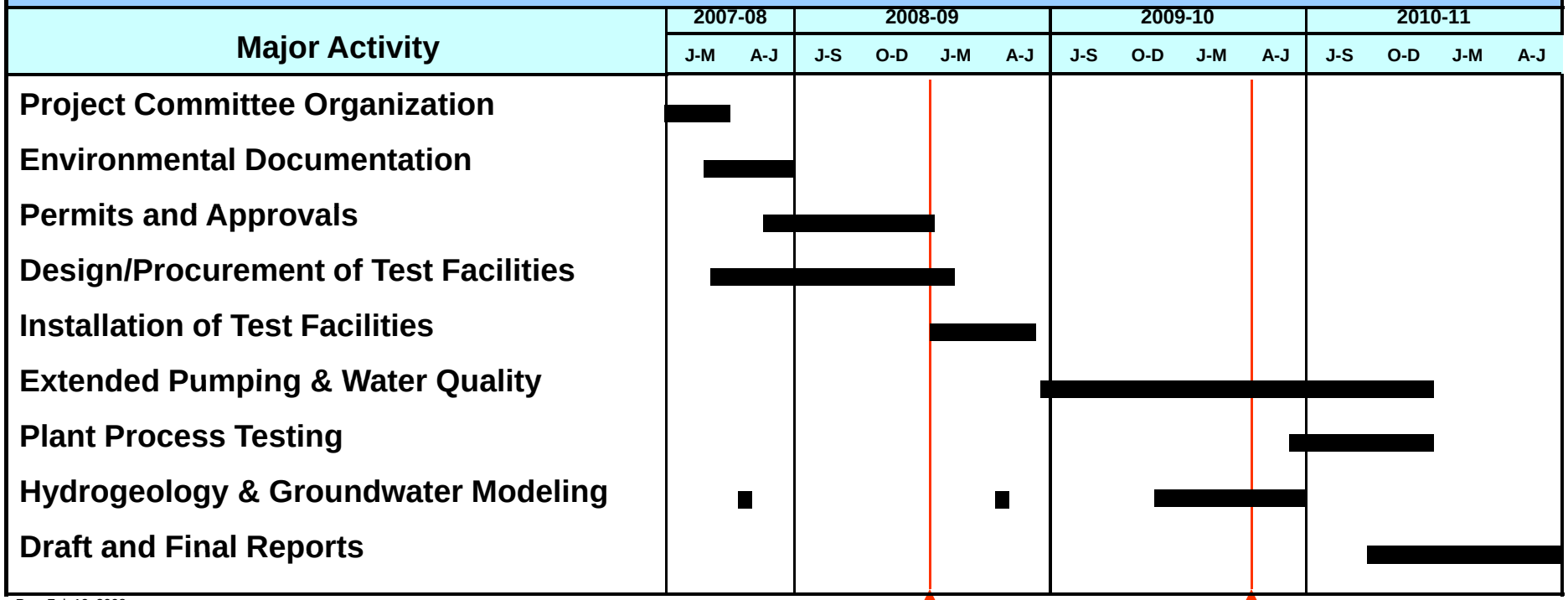
- **Second Off Ramp – (FY-10)**

  If the pumping test fails to deliver appropriate quality water for the pilot program and there is no expectation that additional pumping will help or if costs exceed the estimates, discussions will be held with the Participants; agencies can elect to drop out.

- **Agencies can exit at other times**

  Responsible for costs up to point of exit; need to negotiate grant commitments

Dana Point Ocean Desalination Project
Extended Pumping and Pilot Plant Testing - Phase 3
Major Activities Schedule



Rev: Feb 19, 2008

= Potential off-ramps

1

2

Estimated Costs, Off Ramps and Schedule

- Cost Definitions
  - TOT = Total estimated costs
  - NET = Costs after applying DWR Grant (1)
  - CUM = Cumulative costs through FY (1)
  - At Off-Ramps, discussion would be needed with DWR to see what grant commitments still need to be fulfilled

(1) Cost estimates assume no other outside funding is obtained after DWR grant; costs will be reduced if other outside funds are obtained

Funding of Next Steps & Off-Ramps

	FY-07 & 08	FY-09	FY-10	FY-11	
TASKS	CEQA, NEPA, & permitting of pump test, Order pumps, Preliminary design of test facilities	Final design test facilities, Procure equipment & install, Test & start-up of pumping	Pumping test continues, Conduct water quality testing, Procure and install pilot plant	Complete pump test & pilot plant testing, Update hydrogeology & modeling, Preparation of final reports	
TOTAL, NET & CUM COSTS – TOT	$445,000	$1,540,000	$1,350,000	$1,465,000	$4.8M
TOTAL, NET & CUM COSTS – NET	$225,000	$720,000	$890,000	$1,465,000	$3.3M
TOTAL, NET & CUM COSTS – CUM	$225,000	$945,000	$1,835,000	$3,300,000	$3.3M

OFFRAMPS

1. $945,000 No Coastal Commission Permit or Bids come in too high
2. $1,835,000 Ocean TDS not high enough within timeframe

Estimated Participant Costs(1)

Number of Parties	Off Ramp #1 $945k		Off Ramp #2 $890k	Remainder to get to Total Local Share of $3,300k	Total Local Costs(1)
	Year 1	Year 2	Year 3		
3	$158k	$158k	$297k	$487k	1,100k
4	$118k	$118k	$223k	$366k	825k
5	$95k	$95k	$178k	$292k	660k

(1) Assumes no additional outside funding beyond DWR Grant; if additional outside funding is obtained, costs shown would be less.

Project Organization

- Participating Agencies are decision-makers
  - South Coast is lead agency
  - Laguna Beach and MNWD approved participation
  - Utilize MWDOC to carry out objectives
  - Authorize use of consultants
  - Authorize expenditures of funds
- MWDOC Activities
  - Develop recommendations for Project Committee
  - Seek outside funding
  - Utilize MET technical assistance
  - Get MET to joint as a “Project Participant”
  - Outreach and media contacts in conjunction with South Coast WD

Project Participation Committee (PPC)

- Committee comprised of one staff and one elected official from each entity
- Cost sharing
  - Share costs equally among agencies
  - Provisions for agencies coming in late
  - Provisions for agencies dropping out
- Official voting, when required, one per agency
- Off Ramps
  - Can elect to exit the process at any off ramp – just need to follow-through with grant commitments
- Contracting with Consultants
  - Through MWDOC – deposits requested periodically
  - Some consultants continued from earlier work; some to be selected by the Committee
- Other

Comments, questions?

Extra Back Up Slides

Drilling Site on Doheny Beach

Dual Rotary Drill Rig

Welding Screen Joints

Next Steps Overall Objectives

- Complete Feedwater Feasibility Investigation
  - Conduct Extended Pumping and Pilot Studies
  - Bring in additional outside funding
  - Initiate CEQA and Permitting in February 2008
- Update Project Cost Estimate
- Implementation/Funding Strategy and Process
- Design/Build/Operate (DBO) Procurement – Initiate Discussions

Next Steps Schedule

- Construction work on Doheny State Beach is limited from mid-Sep through Mid-May
- CEQA/Permitting must start in February to install test facility next winter

Major Activity	Start – End Dates
Installation/Start Up	Sep 2008 - May 2009
Extended Pumping/Tests	May 2009 - Dec 2010
Pilot Plant Testing	May 2010 - Dec 2010
Final Report	Jan 2011 – Jun 2011

- Proceed with Design, Permitting, Construction
- On-line targeted in 2015

Immediate Budget Need
FY 07/08 Only

CEQA/NEPA	$50,000
Permitting & Fees	$40,000
Project Report & Pump Order	$250,000
Design Mobile Test Facility	$40,000
Other Direct Costs	$10,000
Subtotal	$390,000
Contingency	$30,000
Federal Advocacy	$25,000
Total	$445,000

Current Phase
Outside Funding Options

- Federal (Goal $2.5 M)
  - HR 664 (25% Match) $1,200,000 ?
- State Bonds (Goal $2.4 M)
  - **Secured DWR Grant (50%) $1,500,000**
  - Prop 84 or other $900,000 ?
- MET (Goal up to $3M)
  - Partnership $1,000,000 ?
- Private DBO (Goal up to $3 M)
  - Early Participation Contribution $1,000,000 ?

Design/Construction Potential Outside Project Funding Sources

- Federal
  - HR 664 – 25% match up to $2.5M
  - Corps of Engineers – 75% match
  - BuRec or Other
- State – Prop 84 and Water Bond
- MET
  - Secured $250/af
  - Equity Partnership or Other

Estimated Cost to Local Agencies

Funding Commitment for 07-08

- Assume 3 to 4 agencies participating
- Cost is $110k to $150k per agency

Funding Commitment 08-09, 09-10, 10-11

- Depends on success of outside funding
- Cost is $200K to $300k per year for three years if no new outside funding is obtained

Max initial commitment per agency is $450,000; outside funding could reduce this amount

South Coast Water District
Feb 7 Board Meeting Actions

- Agreed to be lead agency for the project
- Calling a meeting with interested parties to move forward with a plan and financial commitments
- Appointed MWDOC as the coordinating agency for the required next steps and outside funding
- Agreed to start “Participation Agreement” process
- Approved $150,000 to start work - contingent on at least two other entities to cost-share
- Time is of the essence – long lead time required for CEQA/NEPA, permitting and installation