2012-2017 Business Plan

Administrative and Finance Committee
October 25, 2012

- 3 Focus Areas
- 21 Business Programs
- 77 Key Issues
- 174 Management Strategies
- 150 Goals
- 5 year look ahead
- Updated every 2 years

The 2012-2017 Business Plan is a comprehensive roadmap to our future based on strategic direction from the Board.
“New Normal”

- Reduced water sales volumes
- Increased water costs
- Transition from building to operating organization
- Impacts of economic recession
- Ratepayer fatigue
- Regulatory impacts
- Legal challenges

The Water Authority must be adept and flexible to manage the challenges of our current and future environment.
## 2010-2015 Business Plan: 129 goals

<table>
<thead>
<tr>
<th>Core Business</th>
<th>Water Facilities</th>
<th>Water Supply Portfolio</th>
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</thead>
<tbody>
<tr>
<td>65 goals</td>
<td>22 goals</td>
<td>42 goals</td>
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## 2012-2017 Business Plan: 150 goals

<table>
<thead>
<tr>
<th>Core Business</th>
<th>Water Facilities</th>
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<tbody>
<tr>
<td>62 goals</td>
<td>27 goals</td>
<td>61 goals</td>
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# Water Supply Portfolio Focus Area

8 programs with 61 goals

<table>
<thead>
<tr>
<th>Area</th>
<th>Goals</th>
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<tbody>
<tr>
<td>BAY-DELTA</td>
<td>10</td>
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<tr>
<td>INTEGRATED REGIONAL WATER</td>
<td>4</td>
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<tr>
<td>WATER RESOURCES PLANNING</td>
<td>5</td>
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<tr>
<td>COLORADO RIVER</td>
<td>11</td>
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<tr>
<td>MEMBER AGENCY LOCAL SUPPLY</td>
<td>9</td>
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<tr>
<td>SEAWATER DESALINATION</td>
<td>6</td>
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<td>WATER USE EFFICIENCY</td>
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</tbody>
</table>
Water Supply Portfolio Focus Area
Highlighted Goals

- Evaluate Bay-Delta conveyance project alternatives (Bay-Delta)
- Obtain favorable ruling on the QSA (Colorado River)
- Update the IRWM Plan (Integrated Regional Water Management)
- Implement and distribute Prop. 50 and 84 funds (Member Agency Local Supply)
- Obtain favorable ruling on rate litigation cases (Metropolitan Water District)
- Release for public review, the Water Purchase Agreement (Seawater Desalination)
- Complete the 2015 Urban Water Management Plan (Water Resources Planning)
- Secure $2 million in additional external funding (Water Use Efficiency)
Water Facilities Focus Area

5 programs with 27 goals

- **ASSET MANAGEMENT**
  - 4 goals

- **CAPITAL IMPROVEMENT PROGRAM**
  - 6 goals

- **FACILITIES SECURITY & EMERGENCY PREPAREDNESS**
  - 6 goals

- **INFRASTRUCTURE PLANNING & FACILITIES OPTIMIZATION**
  - 4 goals

- **OPERATIONS & MAINTENANCE**
  - 7 goals
Water Facilities Focus Area
Highlighted Goals

- Use Magnetic Flux Leakage technology to determine condition of a section of Pipeline 4 (Asset Management)

- Complete the San Vicente Dam and Carryover Storage Project (Capital Improvement Program)

- Complete video surveillance upgrades to several major projects (Facilities Security and Emergency Preparedness)

- Complete the 2012 Regional Water Facilities Optimization and Master Plan Update (Infrastructure Planning and Facilities Optimization)

- Achieve 94 percent uptime in fiscal year 2013 at the Lake Hodges Hydroelectric Facility (Operations and Maintenance)
Core Business Focus Area
8 programs with 62 goals

- CLIMATE CHANGE COMPLIANCE: 4 goals
- ENVIRONMENTAL MANAGEMENT: 6 goals
- FINANCIAL PLANNING: 17 goals
- GOVERNMENT RELATIONS OUTREACH: 8 goals
- GRANTS ADMINISTRATION: 3 goals
- INFORMATION TECHNOLOGY: 6 goals
- PUBLIC OUTREACH: 9 goals
- WORKFORCE MANAGEMENT: 9 goals
Core Business Focus Area
Highlighted Goals

- Complete the Water Authority Climate Action Plan
  (Climate Change Compliance)
- Complete Mitigated Negative Declaration for Pipeline 3 relining project
  (Environmental Management)
- Achieve the Rate Stabilization Fund target balance by 2016
  (Financial Planning)
- Secure $100 million in water bond funding by 2014
  (Government Relations Outreach)
- Obtain grant funding to support Water Authority mission
  (Grants Administration)
- Upgrade Maximo computerized maintenance management system
  (Information Technology)
- Achieve or exceed small business participation percentage
  (Public Outreach)
- Complete and adopt an integrated workforce succession plan
  (Workforce Management)
2012-2017 Business Plan Performance Monitoring

- Program Leaders report out to Water Authority Management three times per year

- General Manager updates Board annually (next report is July 2013)

- Business Plan document and status reports are posted on our website as they are updated

  http://www.sdcwa.org/mission-vision-values-strategies
Right of Way

- Acquisition
  - Title review and evaluation
  - Negotiation with other agencies and owners
  - Relocation assistance

- Property Management
  - Acquire and grant Rights of Entry
  - Provide advice for formulating policies on encroachment removal and management
  - Patrol
Right of Way

- Survey
  - Prepare and file Records of Survey
  - Perform construction staking
  - QA/QC of property documents

- Contract Preparation
  - Provide standardized forms and contracts for real estate services of all types
Risk Management

- **Insurance Analysis**
  - Review of policy coverage
  - Cost analysis including impact at different deductible levels

- **Contract/RFP Review**
  - Assist in negotiation process by reviewing responses and counter offers
  - Review indemnification clause to ensure appropriate risk sharing both in initial contract and post award

- **Loss Control**
  - Review policy and procedures to ensure managing loss
  - Review property schedule for completeness and accuracy to ensure all property is covered at appropriate levels
Risk Management

Claims Management
- Review policies, procedures, and forms to ensure compliance with law, and facilitate claims process
- Develop and implement methodology for actively managing claims process

Training
- Review to ensure compliance with safety training laws/regulations and identify any caps
- Provide group training topics/subtopics
Human Resources

Training Outreach Program

- Offer our training courses to member agencies

- Gained CDPH approval of water–focused development and training courses for contact hours credit. [In addition to specific Water Operator Training Recertification (WOTR) program sessions]

- Gained Project Management Institute approval of project–management courses for professional development unit credit towards Project Management Professional (PMP) recertification
Operations & Maintenance

- Field Maintenance
  - Large valve maintenance
  - Welding/fabrication
  - Grading, line road maintenance

- Asset Management
  - Assessment/inspection
  - Program development

- Corrosion Protection
  - System evaluation
Operations & Maintenance

- Electrical/Electronics
  - SCADA troubleshoot/assistance
  - Meter calibration

- Fleet Services
  - Procurement/specification assistance
  - Specialized fabrication

- Emergency Preparedness
  - Exercise design & NIMS/SEMS training
  - Security assessment
Management, technical & administrative support

- Analyze proposed project environmental resource issues in the plan, design, construction, and post-construction phases

- Develop RFPs for environmental document preparation:
  - Evaluate and recommend contractors for final selection
  - Negotiate and administer contracts for professional services
Water Resources Environmental

- As-needed environmental consulting services
  - Prepare permit application packages and coordinate with federal, state, and local resource agencies
  - Provide formal environmental training for executives, project managers, and field staff
Member Agency Services – Energy Cooperative
Member Agency Services – Energy Cooperative

- County Water Authority Act allows for Authority to purchase gas, electricity or related services and sell/exchange/deliver to any public agency

- AB117: enabled cities and/or counties to implement Community Choice Aggregation (CCA)

- Either offer the potential to pool energy/gas demand under a single not-for-profit structure
Potential Advantages of Cooperative

- Increased choice and competition
- Competitive prices
- Water focus
- Reduces administrative costs
- Improved service
- Support local energy development
California Public Utilities Commission is creating guidelines for forming CCA.

Interest in CCA has increased with SDG&E’s initiation of their General Rate Case Phase 2.

San Diego Energy District Foundation
- An example of a cooperative being formed under the CCA legislation.
Next Steps

- Continue to investigate options and models for energy cooperatives
- Form and host a Member Agency Manager’s work group to assist in option development
Pipelines 3 and 4
Miramar Hill to Scripps Ranch
Relining

Engineering & Operations Committee
October 25, 2012
San Vicente Dam Raise
Construction Update

Engineering & Operations Committee Meeting
October 25, 2012
Agenda

- Completed Construction
- Work in Progress
- Upcoming Activities
RCC Placement
August 2012

ULTIMATE DAM HEIGHT – FALL 2012

ELEV. (FEET)

800
750
700
650
600
550
500
450
400

776
758
RCC Placement
September 2012

ULTIMATE DAM HEIGHT – FALL 2012

ELEV. (FEET)
800
750
700
650
600
550
500
450
400

776 776
Saddle Dam
Agenda

- Completed Construction
- Work in Progress
- Upcoming Activities
Work on Top of Dam

October 2012
Work on Top of Dam
October 2012
Work on Top of Dam
October 2012
Marina Area Demobilization
Outlet Tower
October 2012
Downstream Control Facility

October 2012
Agenda

- Completed Construction
- Work in Progress
- Upcoming Activities
Upcoming Activities - SCADA
Upcoming Activities

- Factory Acceptance Test
- Site Acceptance Test
- Startup, Testing, and Commissioning
- Coordination with DSOD - Dam Certification
Twin Oaks Valley Water Treatment Plant (TOVWTP)

Performance Update

E&O Committee Meeting
October 25, 2012
Gary Eaton, Director of Operations & Maintenance
Treated Water Study

August 1997 – Water Authority initiated *Treated Water Study* in response to MWD’s deferral of PL 6 and lack of planned future treatment capacity at Skinner

- Project future treated water demands
- Identify ways to meet any near term treated water needs
- Identify future opportunities for meeting long term treated water demands
Sept. 1998 SDCWA letter to MWD

- September 1998 SDCWA letter to MWD requesting advancement of Skinner expansion
  - Demands on Skinner would exceed its capacity by 2010
  - Eastern Municipal and Rancho California demands increasing faster than projected
  - Max day demands for treated water from Skinner forecast to grow to 575 – 600 MGD by 2015
- Skinner treatment plant pushed above rated capacity in 2000 and 2002
Treated Water Peaking: Expecting the Worst

- 2002 Water Authority Regional Water Master Plan recommended 50 to 100 MGD of regional treatment plant capacity

- April 2003 – Board adopted the *Peak Treated Water Demand Reduction Action Plan* (Conservation/Operational Enhancement)

- June 2003 – Board adopted *Shortage Allocation Plan*
  - Early Notification of 95% capacity
  - Voluntary Reallocation of Available Treated Water
  - Mandatory Cutback Procedures
Additional Treatment Plant Capacity

- MWD accelerated expansion of Skinner to begin construction in 2007 from 2014
  - July 9, 2002, MWD authorized design Skinner Mod 7 expansion
  - November 9, 2004, MWD appropriates $91.19 M for construction of Mod 7

- Despite member agency local treatment plant expansion, optimization and conservation, shortage of 50 to 100 MGD treated water expected

- Increased average demands impacting ability of treatment plant operators to conduct adequate maintenance on existing plants
Treated Water Shortage Headlines 2004-2007

Water Officials Renew Call for Conservation
By Gig Conaughton
North County Times
August 5, 2004

Water Officials Call for Immediate Conservation
By Gig Conaughton
North County Times
July 23, 2004

Water officials again call for conservation, despite heavy winter rains
By: GIG CONAUGHTON
The North County Times
May 27, 2005

Officials Offer Advice on Water: Conserve!
Raw Stuffs Available; Pinch is in Treating it
By Jose Luis Jiménez • Union-Tribune
July 23, 2004

San Diegans Asked to Conserve Water this Week
North County Times
July 17, 2006

San Diegans were asked to conserve water this week to avoid mandatory restrictions, a water authority official said Sunday.

Water Authority Issues Urgent Conservation Call
By Gig Conaughton
North County Times
July 5, 2007

SAN DIEGO -- County water officials issued an urgent plea Tuesday for people to cut their water use, saying the heat wave and the delayed expansion of a major treatment plant were taxing the plant's ability to crank out enough drinking water.
Treated Water Peaking

- 2003, exceeded 95% Skinner capacity 3 times
- 2004 – highest number of 95% capacity notifications (41 total, 19 during month of July, 107.7% capacity)
- 2005 – 14 notifications (100.3% of capacity)
  - June 22, 2005 Skinner plant emergency
- 2006 – 28 notifications (108.4% of capacity on July 15, 2006)
- 2007 – 5 notifications, July 2007 – Skinner capacity expanded to 630 MGD
- Total of 91 days greater than 95% capacity
Treated Water Peaking: Water Authority Actions

- June 2004 – Twin Oaks Valley Water Treatment Plant added to CIP with planned summer 2008 completion

- January 2005, Board approves issuing RFP for single-phase, 100 MGD Twin Oaks Valley Water Treatment Plant
Twin Oaks Valley WTP

- DBO Contract to CH2M-Hill Constructors September 2005
- Operation: June 2008
Average Production - 57 MGD

95 MGD or greater - 49 days

Additional MWD purchase if 50 MGD plant = 18,000 ac-ft or 16 MGD
North County Expansion of Treated Water Delivery

- Projects that are in CIP with potential to add (25 – 50 MGD)
  - MWD venturi meter reduction from 45 CFS min. to 10 CFS min.
  - Add a pump at the Valley Center Pump Station (P2A) to move more treated water to 1st Aqueduct
  - Master Plan to more accurately define TOVWTP additional delivery amount
TOVWTP Improvements

- Strainers Replaced
- Membrane Replacements
- BACC Covers
- Solar Panels
- SCADA Upgrade
  - Jan 2013
Monitoring TOVWTP Performance

- Escondido Control Room
  - WQ and Production
- Daily – Production
- Weekly Operations Plan
  - Production and Electrical Usage
- Monthly Department Report
- Executive Meetings
TOVWTP Summary and Future

- Over 4 years in production and operating well
- Treated over 93 Billion Gallons (286,000 ac-ft)
- No regulatory violations
- Moving Forward
  - Continue Optimize Energy Use and Plant Operations
  - Carlsbad Desalinated Seawater Improvements
Bay-Delta Update

Imported Water Committee

October 25, 2012
Delta Stewardship Council

- DSC adopted final draft Delta Plan on September 13
- Addressed Water Authority and ACWA concerns:
  - Dropped regulation of local water management for water supply reliability
  - Reduced reliance on Delta flows for ecosystem restoration
- Calls for water bond and beneficiary/stressor pays finance plans
Delta Stewardship Council

- Final draft will serve as the recommended project description for purposes of the Delta Plan EIR
- Delta Plan EIR will be recirculated in the fall of 2012
- Final Delta Plan EIR is scheduled to be certified in the spring of 2013
- Final Delta Plan is scheduled to be adopted after Delta Plan EIR is certified
Bay Delta Conservation Plan

- Downsized project – 9,000 cfs (from 15,000 cfs)
- “Decision tree” to determine yield
- Concern:
  - Will completed project yield as much water as under the present Delta smelt and salmon restrictions?
- MWD has public outreach effort in support of BDCP
Bay Delta Conservation Plan

- Schedule is to release a draft BDCP and EIS/EIR for public comment in the fall of 2012
- Federal fisheries agency are working to release a description of the “decision tree” process
  - Biological goals and objectives
  - Process for determining flows to meet biological goals and objectives
Bay Delta Conservation Plan

- State and federal project contractors want to be able to determine whether further investment will provide adequate yield.
- MWD and other urban SWP contractors generally support continuing with the BDCP.
- CVP contractors that have fixed crops are also generally supportive.
- Other CVP contractors with access to groundwater and with variable crops are less supportive.
Financing the BDCP

- BDCP Chapter 8 estimates costs of the project and assesses the state, federal, and contractor funds that may be available
- The chapter does not address the ability of SWP and CVP contractors to pay for the project
- MWD estimates construction of the project will add $200 per acre foot to its rates
Bay Delta Conservation Plan

- Water Authority letter to the Natural Resources Agency, expressing concerns about project financing
- Agricultural water users have been assured that a definition and example of the “decision tree” will be made available later in the fall to inform their decision about moving forward
  - However, will not guarantee yield
Next Steps

- BDCP was scheduled to be released in public review draft in September 2012
- BDCP EIS/EIR is scheduled to be released for public review later in the fall
- Final BDCP EIS/EIR to be completed in spring 2013
- Notice of Determination in summer 2013
- BDCP finalized, ESA permits issued
Next Steps

- Water Authority staff will comment on public review drafts of BDCP and BDCP EIS/EIR
Colorado River Basin Tamarisk Management and Salinity Control

Imported Water Committee
October 25, 2012
Russian Olive
Tamarisk
Tamarisk Coalition

- Basin water agencies studying tamarisk management as possible water supply augmentation

- Panel of experts to answer questions:
  1. Can water be saved by managing tamarisk?
  2. Is removing tamarisk cost-effective?
  3. Does additional water end up in river available for use?
Before Tamarisk Management
After Tamarisk Management
Water Savings

- Produced by removing tamarisk and replacing with native species
- Very dense Tamarisk can use up to 4.6 af/acre/yr
- A representative site adjacent to Colorado River would have 60 percent tamarisk cover.
Estimated Costs

- Range of cost: $700 - $5,800 per acre treated to remove tamarisk and replace with native vegetation
- Expected average unit cost for representative site: $400/af
Creation of Conserved Water

- Water must remain in river or in accessible groundwater basin
- Pilot projects to study impacts to surface and ground waters
Site Near Blythe, California
Site Near De Beque, Colorado
Colorado River has relatively high salinity

Excess salinity causes $375 million/year in economic damage

Salinity control program developed in 1970s
Colorado River Basin Salinity 2009

*Flow volume and salinity concentration data represent calendar year 2009.

*River segment widths correspond to annual flow volume in acre-feet per year.

*River segment colors correspond to annual average salinity concentrations.

*Flow volumes recorded at USGS gaging stations. Salinity concentration and load values computed by USGS.
Cooperative effort with Basin state agencies and federal government

- States formed Colorado River Salinity Control Forum
- Federal agencies include Reclamation, Dept of Agriculture, Bureau of Land Management

Projects implemented to date reduce salts into river by about 1.2 million tons/year
Salinity Control Program

- Remove 650,000 more tons per year by 2030
- Additional cost of $45 million annually
- Salinity Control Forum working with Congress to ensure continued federal funding support
Salinity Control Projects

- Projects intercept and dispose of salts, or improve irrigation practices
- Projects located in Colorado, New Mexico, Arizona, and Utah
- Paradox Valley project in Colorado removes 100,000 tons of salt/year from highly saline tributary.
  - Salt is injected into deep well
Water Authority goal to maintain salinity no greater than 500 mg/L

In 2011, average salinity of Water Authority supply was about 400 mg/L
Hydraulic Fracturing

Legislation, Conservation & Outreach Committee

October 25, 2012
What is Hydraulic Fracturing?

- Practice of injecting water and other fluids into oil and gas wells to break up shale rock
- Allows exploitation of oil and gas reserves locked up in shale rock and other porous rocks
- New hydraulic fracturing techniques are revolutionizing oil and gas production in the United States
Water Quality Concerns

- Hydraulic fracturing uses water and chemicals under pressure to break up rock.
- There are concerns that the liquid substances will contaminate groundwater sources.
- Other concerns are that substances will leak out of wells and contaminate rivers and other surface water sources.
Hydraulic Fracturing in California

- 350 wells disclosed in California, mainly in Los Angeles and Kern Counties.
- No regulations in California specifically relate to hydraulic fracturing.
- Bills to place a moratorium on hydraulic fracturing, require disclosure of wells, or regulate the process failed in the Legislature this year.
Hydraulic Fracturing in California

- AWWA, ACWA, Groundwater Resources Association, and other water resources associations held symposiums, but none have taken a position on hydraulic fracturing, other than to call for further study and protection of water bodies.
Legislative Policy Guidelines
And Legislative Proposal Worksheet

Legislation, Conservation & Outreach Committee

October 25, 2012
Legislative Policy Guidelines

- Annual Update
- 2013 revision contains suggested changes from Water Authority staff
- Staff is requesting suggestions for revisions from board members and member agencies, based on policies adopted or expressed by the Water Authority in 2012
- Please return to Jeff Volberg or Alexi Schnell by November 2
Legislative Policy Guidelines

- Changes to Guidelines:
  - Bay-Delta principles adopted in February 2012 replace the previous set of Bay-Delta guidelines
  - Under Local Resources, support a site-specific, science-based approach to permitting of desalination facilities
  - Under Water Use Efficiency, support incentives for demonstration projects and studies
Under Power Supply, oppose the requirement of purchasing greenhouse gas reduction credits for electricity purchased solely for the purpose of importing, transporting, and distributing water to a service area.
Legislative Policy Guidelines

- Staff presented guidelines to member agency general managers last week
- General managers suggested:
  - Add a guideline under the Bay-Delta that opposes the use of ad valorem taxes to fund the Delta fix
  - Consolidate and shorten the guidelines where possible
Ideas for Sponsored Legislation

- Legislative Proposal Worksheet
- Requesting suggestions for Water Authority sponsored bills from member agency general managers
- Please return to Jeff Volberg or Alexi Schnell by November 2
Approval of Uniform Contract for Member Agency Purchase of Treated Water from the Water Authority-Carlsbad Seawater Desalination Project
Development of Uniform Purchase Contract

- Based on Board adopted purchase principles
  - Allow member agency to purchase local supply
  - Provide guidance on essential terms of purchase contract

- Member agency input from four meetings held July – September 2012

- Basic contract terms presented to Board in August

- Following receipt of member agency intent, individual contracts would be prepared based on uniform contract
  - Individual contract presented to Board for approval
Member agency commit to fixed purchase amount of Water Authority–owned supply from Project

Uniform contracts, except for quantity

Full cost recovery

Assumption of same risk profile as Water Authority

Classified as treated local water supply

Member agencies have 60 days from public release of WPA to provide notice of intent to purchase a specific quantity of supply
Contract Quantity

- Member agency commit to fixed minimum purchase amount (contract quantity)
  - Part of Minimum Annual Demand Commitment under WPA (48 TAF)
- Annual quantity taken in twelve equal monthly purchases
Additional Product Water Deliveries

- If Water Authority purchases additional deliveries, member agency must also purchase additional deliveries
  - Pro-rata share based on their contract quantity

- Member agency can permanently waive access to additional deliveries in contract

- Member agency can only purchase additional deliveries if Water Authority has purchased deliveries
Characterization of Contract Quantity and Additional Deliveries

- Local supply in application of all Water Authority ordinances, plans, and programs
  - Local supply pursuant to Water Authority’s Water Shortage and Drought Response Plan (WSDRP)

- Treated water supply
  - Delivered in similar manner to other Water Authority treated deliveries
    - May not receive molecule of desalinated water
## Member Agency Purchase Contract Updated – Proposed Unit Price Payments

<table>
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<tr>
<th>Carlsbad Desalination Project Costs</th>
<th>Aqueduct Costs</th>
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<tbody>
<tr>
<td>Water Purchase Agreement Payments</td>
<td></td>
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<tr>
<td>Fixed Unit Price</td>
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<tr>
<td>Variable Unit Price</td>
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<td>Management Fee/Incentive Payment</td>
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<tr>
<td>Product Water Pipeline Design Build Agreement</td>
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<td>DBA Dept Service</td>
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<td>Budgeted O&amp;M Costs</td>
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<tr>
<td>Twin Oaks Valley WTP</td>
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<tr>
<td>Transportation Charge</td>
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<tr>
<td>(Inefficiency due to desalinated production)</td>
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<tr>
<td>(Adjusted for amounts paid under Project Costs)</td>
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### Contract Quantity

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### Additional Deliveries

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### Unexcused Demand Shortfall Units

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### Excused Demand Shortfall Units

- No Payment for Project Water

### Unexcused or Excused Supply Shortfall Units

- No Payment for Project Water

Contract also includes annual administrative fee payment
Term and Early Termination

- Fixed contract term equal to WPA term
  - 30 Years
  - Option to renew for additional 20 years
  - Up to additional 3 years for force majeure events by Poseidon

- Early termination – member agency has ability to terminate contract
  - If Water Authority acquires Plant pursuant to WPA (other than upon expiration of agreement term)
  - If revisions to Water Authority WSDRP allocation methodology eliminate or materially reduce local supply benefit
Staff Recommendation

Approve the uniform contract for member agency purchase of treated water from the San Diego County Water Authority–Carlsbad Desalination Project
Proposed Amendment to the Ocean Plan for Desalination Facilities and Brine Disposal

Water Planning Committee Meeting
October 25, 2012
Proposed California Ocean Plan Amendment

- SWRCB is developing an Ocean Plan amendment to address desalination facilities and brine discharge

- Components of Ocean Plan amendment
  - Statewide objective for salinity
  - Provisions to minimize marine life impacts
  - Implementation provisions

- Amendment to Ocean Plan would continue to be implemented through individual NPDES permits issued by State and Regional Water Boards
Summary of Board Presentation on August 23, 2012

- SWRCB initiated three studies to address information gaps and provide recommendations
  - Results discussed at SWRCB Public Board Workshop August 22nd

- Salinity Toxicity Study & Panel on Intake and Mitigation
  - Findings generally consistent with Carlsbad permit
  - Support need for site specific considerations

- Panel on Impacts and Effects of Brine Discharges
  - Some recommendations conflict with Carlsbad permit
Management of Brine Discharges to Coastal Waters
Recommendations of a Science Advisory Panel

Panel Members
Scott Jenkins, Jeffrey Paduan, Philip Roberts (Chair), Daniel Schlenk, and Judith Weis

submitted at the request of the
California Water Resources Control Board

by the
Southern California Coastal Water Research Project
Costa Mesa, CA

Technical Report 694
March 2012
Different discharge strategies can be used, depending on site-specific considerations.

There is no single discharge strategy that is optimum for all types of anticipated scenarios.

Discharge sites with high ambient mixing and advection are preferable, (example: Carlsbad Surf Zone)

Under certain conditions, deep ocean outfalls and high velocity diffuser systems may be the preferred technology for ensuring that the appropriate brine dilution.

Panel acknowledged potential environmental effects associated with high velocity diffusers and recommended studies to investigate the impacts of turbulence from high velocity diffusers
The SWRCB convened a public workshop to receive testimony on the Brine Panel recommendations.

Leading experts in the area of marine life impacts testified that under the site specific conditions present in Carlsbad, the high pressure diffuser

- Could create new entrainment/impingement and turbulence mortality effects that would be substantially greater than that contemplated under the project operations approved by the RWQCB.

- Is not the environmentally preferred solution everywhere.
Figure 1
Ocean Outfall/Diffuser System

Surf zone turbulence over fine sediment bottom

Diffuser turbulence over sandy bottom
Diffuser turbulence over fine sediment bottom will cause bottom turbidity in the neighborhood of offshore kelp beds.
Flow mechanics of turbulence mortality to marine life due to a riser-jet diffuser
Conclusions

- The existing permits issued to the Carlsbad project are fully protective of the marine environment.

- In the case of the Carlsbad Project, a deep ocean outfall with a high pressure diffuser is not the environmentally preferred solution.

- Proposed Desalination Policy requires lengthy CEQA process, which will reveal Brine Panel recommendations are preliminary and not an adequate basis for amending the Carlsbad permit.
Next Steps

- Staff will continue to be engaged throughout the process
  - Emphasize need for site-specific regulations
  - Coordinate with other CalDesal members on issues

- SWRCB’s tentative schedule
  - Release of draft Staff Report in early 2013
  - Formal public review and comment in summer 2013
  - Public hearing in early 2014
Carlsbad Desalination Project – Proposed Water Purchase Agreement
Costs and Terms

Water Planning Committee
October 25, 2012
TODAY'S AGENDA

1. Build up to Water Unit Price
2. Consequences of non-performance
3. Plant Operation, Management & Maintenance
4. Upcoming Board and Other Public Meetings
WATER

PURCHASE PRICE

Electricity Charge

Capital Charge

Operating Charge
COST DRIVERS

1. The Electricity Charge is driven by:
   • Terms of Poseidon’s O&M Agreement with IDE
   • SDG&E Rates
   • Water Authority’s option to select supplier
   *The Electricity Charge will vary with electricity prices*

2. The Operating Charge is driven by:
   • Terms of Poseidon’s O&M Agreement with IDE
   • Other operating expenses
   *The Operating Charge is indexed to CPI*

3. The Capital Charge is driven by:
   • Poseidon’s Capital Budget
   • Bond Issuance
   • Negotiated Equity Return/Developer Fee
   *The Capital Charge is fixed at a pre-established escalation rate*
WATER PURCHASE PAYMENTS

- Monthly, based on actual deliveries in acre-feet
- In each year, the first 48,000 acre-feet will be purchased at a price that fully amortizes the fixed project costs plus the variable costs of production
- Water in excess of 48,000 acre-feet will be purchased at a unit price reflecting the variable costs of water production
- Payments of fixed charges to Poseidon will be adjusted to reflect Poseidon underperformance
  - Poseidon is obligated to produce 56,000 AFY
  - Water Authority is only obligated to take 48,000 AFY

Annual Projected Desal Purchases in AF
Wet Weather Hydrology

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
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San Diego County Water Authority
# UNIT PRICE MATRIX

<table>
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<tr>
<th></th>
<th>Debt Service Charge</th>
<th>Equity Return Charge</th>
<th>Fixed O&amp;M Charge</th>
<th>Variable O&amp;M Charge</th>
<th>Fixed Electricity Charge</th>
<th>Variable Electricity Charge</th>
<th>Mgmnt Fee/Operator Incentive</th>
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<tr>
<td>Minimum Annual Commitment (48 TAF/Yr)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>Additional Water between 48 TAF-56 TAF</td>
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<td>Excess Water Beyond 56,000</td>
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<td>X</td>
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<tr>
<td>Unexcused Demand Shortfall Units</td>
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<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Excused Supply or Demand Shortfall Units</td>
<td>No Payment. Right to make up in the future</td>
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<tr>
<td>Unexcused Supply Shortfall Units</td>
<td>No Payment. Right to make up during Contract Year</td>
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</tbody>
</table>
WHAT MAKES UP THE CAPITAL BUDGET?

• Seawater Desalination Treatment Plant  
  $484,000,000

• SDG&E Substation  
  $15,000,000

• Wetlands Mitigation/Construction  
  $17,000,000

• Greenhouse Gas Mitigation  
  $1,000,000

• Financing Costs  
  $161,000,000

Total: $678,000,000
CALCULATING THE CAPITAL CHARGE

• Total Plant Related Capital Costs: $678 Million

• Method of Finance
  • 76% funded through Bonds issued by the California Pollution Control Financing Authority
  • 24% Cash Equity from Stonepeak Infrastructure

<table>
<thead>
<tr>
<th>Bond Financing</th>
<th>Equity Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>$513 Million</td>
<td>$164 Million</td>
</tr>
</tbody>
</table>
DEBT SERVICE CHARGE

- Plant Bond Financing: $513 Million
- Plant Term
  - 30 years
  - Increasing 2.5% annually for rate smoothing
- Interest Rate
  - Current Market: 5.10%
  - Maximum: 6.10%
  - Used Mid Range: 5.60%

<table>
<thead>
<tr>
<th>48,000 AFY</th>
<th>56,000 AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>$551 /AF</td>
<td>$472/AF</td>
</tr>
</tbody>
</table>
EQUITY RETURN CHARGE

• Equity Contribution: $164 Million
• Term
  • 30 years
  • Increasing 2.5% annually for rate smoothing
• Rate of Return
  • 9.38%

<table>
<thead>
<tr>
<th>48,000 AFY</th>
<th>56,000 AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>$280/AF</td>
<td>$240/AF</td>
</tr>
</tbody>
</table>
PIPELINE COSTS

• Water Conveyance Pipeline
  $163,000,000

• SDG&E Substation
  $ 5,000,000

• Wetlands Mitigation/Construction
  $ 6,000,000

• Financing Costs
  $ 52,000,000

Total: $226,000,000
PIPELINE INSTALLMENT PAYMENTS

• Bond Financing: $226 Million

• Term
  • 30 years
  • Increasing 2.5% annually for rate smoothing

• Interest Rate
  • Current Market: 4.60%
  • Maximum: 5.60%
  • Used Mid Range: 5.10%

<table>
<thead>
<tr>
<th>48,000 AFY</th>
<th>56,000 AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>$238 /AF</td>
<td>$204 /AF</td>
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</table>
# CAPITAL COST SUMMARY

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<tr>
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<th>Capital Budget</th>
<th>48,000 AFY</th>
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<tr>
<td>Plant Bonds</td>
<td>$513 M</td>
<td>$551/AF</td>
<td>$472/AF</td>
</tr>
<tr>
<td>Equity</td>
<td>$164 M</td>
<td>$280/AF</td>
<td>$240/AF</td>
</tr>
<tr>
<td>Pipeline Bonds</td>
<td>$226 M</td>
<td>$238/AF</td>
<td>$204/AF</td>
</tr>
<tr>
<td>Total</td>
<td>$903 M</td>
<td>$1,069/AF</td>
<td>$916/AF</td>
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</table>
FIXED O&M CHARGES

- Fixed O&M charges: $22.7 million annually
  - Non electricity: $19.2 million annually

<table>
<thead>
<tr>
<th>48,000 AFY</th>
<th>56,000 AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>$400 /AF</td>
<td>$343/AF</td>
</tr>
</tbody>
</table>

- Electricity: $3.5 million annually

<table>
<thead>
<tr>
<th>48,000 AFY</th>
<th>56,000 AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>$73/AF</td>
<td>$63/AF</td>
</tr>
</tbody>
</table>
### VARIABLE O&M CHARGES

- **Variable O&M Costs:** $26.1 - $30.4 million annually
  
  - Non electricity: $4.8 – $5.7 million annually
  
<table>
<thead>
<tr>
<th></th>
<th>48,000 AFY</th>
<th>56,000 AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non electricity</td>
<td>$101 /AF</td>
<td>$101 /AF</td>
</tr>
</tbody>
</table>
  
  - Electricity: $21.2 – $24.8 million annually
  
<table>
<thead>
<tr>
<th></th>
<th>48,000 AFY</th>
<th>56,000 AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>$442 /AF</td>
<td>$442 /AF</td>
</tr>
</tbody>
</table>
Historic Electric Prices

- SDG&E’s average industrial rate for the period 1981-2010 was presented to the Board
  - This rate history shows a historic annual growth rate of 1.18%
  - This rate history is an important factor considered in the forward-looking rate projection

The Board and public asked certain questions about this rate history
  - What explains the “shape” of the SDG&E rate history?
  - Why hasn’t staff used the last 10-years as the basis for the future projection?
Electricity rates versus natural gas prices

SDG&E Average Industrial Rate

U.S. Natural Gas Wellhead Price
Natural Gas Price Increases Drive Electric Rates

SDG&E Average Industrial Rate

U.S. Natural Gas Wellhead Price
Impact of California Energy Crisis

SDG&E Average Industrial Rate

U.S. Natural Gas Wellhead Price
Questions and Responses

• What explains the “shape” of the SDG&E rate history?
  ▪ Variations in shape away from the overall trend line are primarily explained by historic fluctuations in natural gas prices
  ▪ Variations are explained secondarily by the California deregulation and energy crisis

• Why hasn’t staff used the last 10-years as the basis for the future projection?
  ▪ Use of Comparable Term
    • The Water Purchase Agreement has a long term (3 years construction plus 30 years operation)
    • The long term requires the Water Authority to take a long term view of electricity prices.
    • The Water Authority considers the approximately 30-year rate history available for the SDG&E industrial tariff to be more comparable than the shorter term of the last 8-10 years.
  ▪ The last 10 years may not represent long-term fundamental trends
    • The relatively higher electricity price escalation rate during the last 10 years was driven primarily by natural gas price escalation during this same period.
    • Natural gas is an important fuel for the production of electricity, and SDG&E largely passes through the cost of natural gas to its ratepayers.
    • The Water Authority believes that the natural gas price increase experienced during this period is unlikely to be repeated, due to structural changes in the US natural gas resource outlook.
## PUTTING THE WATER UNIT PRICE COMPONENTS TOGETHER

<table>
<thead>
<tr>
<th></th>
<th>48,000 AFY Minimum Annual Commitment</th>
<th>8,000 AFY Additional Water</th>
<th>56,000 AFY Average Unit Price</th>
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<tbody>
<tr>
<td>Debt Service Charge</td>
<td>$551/AF</td>
<td>$0</td>
<td>$472/AF</td>
</tr>
<tr>
<td>Equity Return Charge</td>
<td>$280/AF</td>
<td>$0</td>
<td>$240/AF</td>
</tr>
<tr>
<td>Pipeline Installment</td>
<td>$238/AF</td>
<td>$0</td>
<td>$204/AF</td>
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<td>Payments</td>
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<tr>
<td>Fixed non-electricity O&amp;M</td>
<td>400/AF</td>
<td>$0</td>
<td>$343/AF</td>
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<tr>
<td>Fixed electricity O&amp;M</td>
<td>$73/AF</td>
<td>$0</td>
<td>$63/AF</td>
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<tr>
<td>Variable non-electricity O&amp;M</td>
<td>$101/AF</td>
<td>$101/AF</td>
<td>$101/AF</td>
</tr>
<tr>
<td>Variable electricity O&amp;M</td>
<td>$442/AF</td>
<td>$442/AF</td>
<td>$442/AF</td>
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<tr>
<td>Annual Management Fee</td>
<td>$10/AF</td>
<td>$10/AF</td>
<td>$10/AF</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$2,095/AF</strong></td>
<td><strong>$553/AF</strong></td>
<td><strong>$1,875/AF</strong></td>
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</table>
UNCONTROLLABLE CIRCUMSTANCES

– Events that affect the delivery of water by Poseidon and are not reasonably under the control of Poseidon are subject to relief from obligations under the agreement

– *Poseidon is relieved from its obligation to deliver water for the duration of the event*

– *Water Authority never pays for water not delivered due to excused non-performance*

– *Water Authority is relieved from requirement to take or pay for water if Board declares an emergency where aqueduct system is unable to operate (Product water purchase relief event)*
Article 14 – Uncontrollable Circumstance Procedures

- General procedures for claiming an uncontrollable circumstance
  - Notice to Water Authority within 10 business days of occurrence
  - Requirements for specific relief request, mitigation, and resumption of performance

Article 15 – Insurable and Uninsurable Force Majeure Events

- Specific Poseidon schedule/performance relief under an insurable Force Majeure event (e.g., fire, any peril other than uninsurable FM)
- Specific Poseidon schedule/performance/compensation relief under an uninsurable Force Majeure event (e.g., war, terrorism, nuclear explosion, seismic)
- Requirements for project reinstatement plans and reconstruction standards
WATER PURCHASE AGREEMENT
OVERVIEW

- **Article 16 – Change In Law Events And Other Uncontrollable Circumstances**
  - Specific schedule, performance and compensation relief for different Change in Law events
  - Specific schedule and performance relief for other uncontrollables
  - Injunctions: utility failure; strikes; eminent domain
  - Differing and regulated site conditions
  - Raw seawater parameters outside specified range
ADJUSTMENTS TO THE PRICE OF WATER

– Changes in Law
  – Changes in law or regulations that generally apply to all water treatment plants or wastewater dischargers would allow Poseidon to adjust price
  – The Water Authority’s financial obligation for intake improvements during standalone operation is capped at $20 million in capital costs in 2010 dollars index linked and $2.5 million index linked to CPI in annual operating expenses

– Excluded Changes in Law do not allow for price adjustments
  – Requirements for the Encina Power Station to upgrade its intake
  – Tax law generally

– Uninsurable Force Majeure Events

– Other events
  – Raw seawater contamination
  – Water Authority delay in completing Water Authority Improvements

– Price Increase above baseline price is capped at a cumulative specified percent
  – 10% annually
  – 30% life of the agreement
TIMING OF OCCURRENCE OF UNCONTROLLABLES

– Before commercial operation date
  – Unit price is increased once commercial operation occurs
  – Poseidon must finance costs based on this promise
  – If commercial operation never occurs, Water Authority has no payment obligation

– After commercial operation date
  – Water Unit Price is increased

– Poseidon bears risk of financing

– Poseidon must mitigate cost impact to Water Authority
ONCE FIRST YEAR PRICE IS SET
UNIT PRICE INCREASES ONLY WITH INFLATION
CUMULATIVE CAP ON ADJUSTMENT TO THE PRICE OF WATER

Intake Modification

~4.6% increase above unit price
<1% increase in 2022 rates
CUMULATIVE CAP ON ADJUSTMENT TO THE PRICE OF WATER

Hypothetical $200mm Event

- ~9% increase above unit price
- 1%-2% increase in 2025 rates if applied in single year

San Diego County Water Authority
CONSEQUENCES OF NON-PERFORMANCE
PERFORMANCE GUARANTEES

– Product Water Quality Guarantee
– Enhanced Standards, Beyond Applicable Law
– Minimum Product Water Delivery Guarantee
– Water Ordering Rights
Appendix 8 – Supplemental Performance Guarantee Requirements

- Specific Requirements of Product Water Quality Guarantee
  - Compliance with all federal and state drinking water regulations
    - Pathogens, disinfection byproducts
  - Additional standards for specific water quality parameters including:
    - TDS, Turbidity, Chloride, Bromide, Boron, Temperature, pH, Calcium, Iron, Manganese, Alkalinity.
  - Procedures for sampling, sampling frequency and location
- Product water chlorine and ammonia range requirement at discharge of Product Water pump station
PRODUCT WATER QUALITY GUARANTEE

– Off-Spec water (minor variances of non-primary standards)
  • If accepted, deduct the equivalent of the melded treatment surcharge from payment to Poseidon

– Unacceptable water (variance that requires rejection)
  • If accepted, no payment all
  • Right to seek damages form Poseidon

– For off-spec or unacceptable water
  • Water Authority stop deliveries
  • Poseidon obligated to prevent recurrent
SUPPLY SHORTFALL CONSEQUENCES

• Operating Period Shortfalls in monthly deliveries
  – Poseidon required to pay pipeline debt service for the units not delivered

• Shortfalls in monthly deliveries during drought
  – Board declared Stage 2 (Supply Enhancement)
  – Same as operating period shortfalls **Plus**
    ▪ Poseidon pays Water Authority shortfall units times the current year equity return charge

<table>
<thead>
<tr>
<th>500 AF drought shortfall × $280 Equity Return Charge = $140,000 payment</th>
</tr>
</thead>
</table>

- Amounts Less than 90% of monthly maximum
Plant Operation, Management & Maintenance
WATER PURCHASE AGREEMENT
OVERVIEW

• Article 10 – Maintenance, Repair and Replacement
  • Poseidon requirements to maintain a Computerized Maintenance Management System (CMMS)
  • Poseidon requirements to document Maintenance, Repair and Replacement Plans and Schedules
  • Water Authority rights to inspect the Plant
    • Annual maintenance inspection
    • Biennial full-scale inspection/review of Plant working condition and performance capability
  • End-of-Term condition and performance requirements
RIGHTS DURING OPERATION

- **Plant Operation and Maintenance**
  - Plant to be operated in accordance with industry standards
  - Employment standards for key operating personnel
  - Reporting and record keeping requirements
  - Water Authority rights to conduct inspections and arrange for tours
  - Administrative space at the plant site to be provided by Poseidon
  - In the extreme, a process for Water Authority to have Chief Operator replaced
  - Step-in rights if unable to remediate poor performance and non compliance with drinking water regulations
Appendix 6 – Operating and Maintenance Standards (continued)

- Preparation of Operating Protocol
  - Procedures for start-up and shutdown of Product Water flow from the Plant
  - Procedures for operator communication between Water Authority and Plant operator
  - Pump operation procedures to avoid hydraulic transients
- Operating Mode Change Performance Test
  - Confirm water quality consistency when Plant operating mode changes

Appendix 7 – Insurance Requirements

- Poseidon insurance requirements during construction and operation
Appendix 11 – End of Term Project Condition Requirements

- Procedures and protocol to be followed at either:
  - Water Authority exercise of purchase option (after 10 years)
  - End of the 30 year term

- Independent Evaluator to be employed to:
  - Evaluate functionality and Integrity of Project Structures
  - Evaluate Project Equipment
  - Evaluate Project performance
Appendix 11 – End of Term Project Condition Requirements

- Water Authority and Poseidon Conduct Joint Inspection and Survey (Structures and Equipment)
- Poseidon to Identify any needed corrective work in Transfer Condition Plan
- Water Authority establishes Transfer Condition Retainage, if required
MAINTENANCE REQUIREMENTS

– Project Structures
  • Functional Rating 1-5
  • Meet a “3” rating: normal wear & tear

– Performance Evaluation
  • Meet Minimum Performance Criteria:
    • Power
    • Water – Quality & Quantity
    • Chemical Usage

– Project Equipment Evaluation
  • Maintained to Contract Standards
  • Equipment, Repair & Replacement w/o limitation
  • Manufacturer recommended maintenance practices
  • Adequate supplies & materials
Board approved Term Sheet with Poseidon July 2010
- Set parameters for major terms and conditions
- WPA is consistent with the July 2010 Term Sheet

28 Months since approval of Term Sheet

Over 30 public meetings regarding the Water Purchase Agreement and the Project
- Public input provided throughout the process

Detailed information on project costs and rate impacts presented in October 2011
- Presented again in April, June, July, August and October
  - Consistently estimated in the $5-$7 per month residential user
Deliberation Process

- Conducted detailed Board workshops and Committee Meetings on WPA Terms and conditions
  - August 9th, September 20th, September 27th
  - Continued in-depth discussion October 25th
  - Received public comment and input at all meetings

- In-depth Board Memos and presentations available to the public
  - WPA terms and conditions
  - Project costs and estimated rate impacts

- Two open houses & evening meetings in the community
  - Substantial turnout from the public
# Summary

**October 2, 2012**  
San Diego County Water Authority, Kearny Mesa

<table>
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<tr>
<th>Attendees</th>
<th>Comments/Questions</th>
<th>Support</th>
<th>Oppose</th>
<th>Neutral</th>
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<td>22</td>
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# Summary

October 10, 2012  
City of Carlsbad, Faraday Center

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<tr>
<th>Attendees</th>
<th>Comments/Questions</th>
<th>Support</th>
<th>Oppose</th>
<th>Neutral</th>
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<tr>
<td>~160</td>
<td>35</td>
<td>28</td>
<td>5</td>
<td>2</td>
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</tbody>
</table>
Recurring messages

**In support:**
- Diversifies water supply portfolio
- Well vetted
- Provides jobs
- Supports tourism and external perception of SD
- Good for the regional economy

**In Opposition:**
- Costly energy / energy intensive
- Conservation and IPR should be done first
- Environmental impacts
Response To Questions

- **Questions asked during the course of both public meetings**
  - Insufficient time to respond during meetings
  - Staff directed to note and respond to Committee

- **Categorizing Questions from Public**
  - WPA terms and conditions
  - Water supply reliability and conservation
  - Cost questions including cost of energy
  - Environmental related questions
Recurring Comments from the public

- Extensive time to implement the project
- Role of water supply and the project in economic growth and jobs
- Prioritization of local water supply development (loading order)
  - Conservation, Recycling, Indirect Potable Reuse and Desalination last

Detailed responses to questions and comments in October 17, 2012 Memo

- Will address cost and energy related questions and comments in item 1-B presentation
**Question**

*What is the optimal water supply portfolio?*

- Many years in development and refinement
- Meets our region’s water supply needs
- Done in close cooperation with member agencies
- Balances reliability with rate payer affordability

**Urban Water Management Plan (UWMP)**
- State law – UWMP Act – updated every 5 years
- Requires a diverse mix of resources, including:
  - Conservation
    - Recycling
  - Imported water
  - Local supply development
What is the optimal water supply portfolio? (continued)

- Regional Water Facilities Master Plan
  - Multi-year study concluded in 2004
  - Identified opportunities & facilities to meet needs through 2030
  - Seawater Desalination -- next increment of supply, with:
    - Continued aggressive conservation
    - Water recycling & brackish groundwater project development by member agencies
  - Articulated in UWMPs of 2000, 2005, 2010
  - CEQA Certified in 2004 Programmatic Environmental Impact Report
Why isn’t the Water Authority doing more for conservation?

- Conservation is a core strategy of our supply reliability for more than two decades
- 800,000 AF conserved since 1991
  - Water efficient devices
    - 500,000+ toilets, 600,000+ low-flow showerheads
  - Public outreach programs and campaigns
    - 100,000+ high-efficiency clothes washer rebates
    - WaterSmart Target Program
  - 2012: 11% (70,000 AF) of region’s water use is offset
A leader in legislative advocacy for water conservation
- Founding member California Urban Water Conservation Council
- Support: AB1561 & AB2572 – high efficiency washers & water meters
- Support: AB2717 & AB1881 – outdoor landscape water use efficiency
- Support: SBX7-7 “20 by 2020” 20% reduction of water use by 2020

Three Conservation Summits hosted by Water Authority

Blueprint for Water Conservation - 2007
- Transition to landscape water conservation through behavioral changes

Board’s Water Use Efficiency Policy Principles - April 2012
The Carlsbad Desalination plant will degrade the existing environment at Agua Hedionda Lagoon and is environmentally impactive.

- Long term stewardship of the lagoon
  - Provided by Encina Power Plant for last 60 years
  - Nurtures white sea bass restoration and other aquaculture activities
  - Assured to continue with the Carlsbad Desalination plant
  - Poseidon required to continue routine dredging of channel and outer lagoon (which would naturally close)
  - Degradation would occur absent dredging and inflow of fresh ocean water
  - Agua Hedionda Lagoon Foundation is a consistent supporter of the project
How do we know the Carlsbad Desalination plant is environmentally responsible desalination?

- The Institutions in California responsible for making that determination said it is.
  - City of Carlsbad lead agency for CEQA
  - California State Lands Commission
  - California Coastal Commission
  - State Water Resources Control Board

- Decisions of those institutions upheld in California Superior Court and California Appellate Court
  - 14 individual legal challenges
The California Coastal Commission is going to make the City [of San Diego] do IPR or upgrade Point Loma to secondary, and the Water Authority needs to understand this.

- **Roles of California SWRCB and USEPA**
  - Charged by US Clean Water Act to grant waivers and define their conditions

- **Role of City of San Diego**
  - Holder of the National Pollutant Discharge Elimination System permit
  - Seeks waiver and agrees to its terms along with 12 Metro System agencies

- **Role of Coastal Commission**
  - Ensures consistency between any potential waiver granted by RWQCB (thru SWRCB) and the Coastal Zone Management Act
1977 amendment to Clean Water Act allowed modification to secondary treatment requirements for ocean dischargers (Section 301 H)

Dischargers had until July 1, 1988 to apply for waiver

City applied for a waiver in 1979 and 1981 and was denied
  - Given until March 1987 to reapply for reconsideration
  - City Council decided to forgo waiver in February 1987

EPA sued the City for non-compliance July 1, 1988
  - Later joined by Sierra Club
City and EPA considered a consent decree to phase in secondary at Point Loma
- 7 water reclamation plants to beneficially reuse 70,000 AF
- Upgrade Point Loma to Secondary
- $2.5 Billion

In 1994 Federal court rejected consent decree and approved revised City proposal “Consumer Alternative”
- 2 recycled water plants -45 MGD of tertiary treatment capacity

1994 Ocean Pollution Reduction Act (OPRA) allowed City to apply for waiver under certain conditions
Background on Clean Water Act Compliance and Water Recycling in the Metro Wastewater System

- **OPRA Conditions**
  - 45 MGD of tertiary treatment capacity
  - Meeting specific water quality standards for Point Loma deep ocean discharge

- **North City Water Reclamation Plant** completed 1997 (30 mgd)

- **South Bay Plant** completed 2002 (15 mgd)

- **Waivers approved in 1995, 2002, 2010**
  - Increasing opposition to continued waivers from local environmental groups and Coastal Commission
  - City agreed to study increasing the beneficial use of recycled water including IPR
    - Completed 2 Studies since 2005
    - Open demonstration project summer 2011
IPR & DPR are cheaper than desalination and should be done before any desalination project

- Local Supplies are critical to reliability and diversification
  - 2010 UWMP relies on additional 100,000 AF of new local supplies

- San Diego Region is limited in local supply options
  - Lack of large groundwater basins and industrial water users

- IPR maximizes recycled water use and recycled treatment capacity
  - Not subject to seasonal variations in demand

- Seawater Desalination maximizes proximity to Pacific Ocean and regional conveyance
  - Both are part of diversification
  - Both are cost competitive with other local supply options
Cost of the Next Increment of Local Supply
Actual Proposed San Diego Region Project Unit Costs – $/AF

Before incentives, grants, or netting out avoided costs
2011 dollars unless otherwise noted

<table>
<thead>
<tr>
<th>Project</th>
<th>Brackish Groundwater</th>
<th>Recycled / IPR</th>
<th>Seawater Desalination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlsbad (Poseidon)</td>
<td>$2,041</td>
<td>$2,290</td>
<td>$1,717</td>
</tr>
<tr>
<td>Mission Basin Narrows</td>
<td>$1,717</td>
<td>$2,086</td>
<td>$1,475</td>
</tr>
<tr>
<td>Otay River</td>
<td>$1,975</td>
<td>$2,086</td>
<td>$1,475</td>
</tr>
<tr>
<td>City of SD RWS*</td>
<td>$2,375**</td>
<td>$2,340</td>
<td>$2,290</td>
</tr>
<tr>
<td>North San Diego County Reuse</td>
<td>$1,628</td>
<td>$1,730</td>
<td>$2,041</td>
</tr>
<tr>
<td>Camp Pendleton Desalination</td>
<td>$1,900</td>
<td>$1,975</td>
<td>$2,290</td>
</tr>
</tbody>
</table>

*Cost range includes wastewater related costs that may reduce the unit cost by up to $600/AF.

**Incentive funding reduced at 2011 value of $275. RWS assumes deduction for incentives on 20 year NPV basis.
**Costs**

**Indirect Potable Reuse (IPR)**

<table>
<thead>
<tr>
<th>Costs</th>
<th>Point Loma Secondary Only (NO IPR)</th>
<th>Point Loma Secondary w IPR Alternatives</th>
<th>Point Loma Advanced Primary w IPR Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital</td>
<td>$0</td>
<td>$1.9 – 2.2 Billion</td>
<td>$1.9 – 2.2 Billion</td>
</tr>
<tr>
<td>Annual Operations</td>
<td>$0</td>
<td>$100–110 Million</td>
<td>$100–110 Million</td>
</tr>
</tbody>
</table>

**Point Loma**

| Capital        | $1.16 Billion ($123 Million – wet weather demand) | $0.727 Billion | $0.263 Billion |
| Annual Operations | $37 Million ($9 Million other)                  | $19 Million ($9 Million other) | $5.9 Million |

Source: Draft Recycled Water Study: IPR costs from Tables 8-3, 8-4, 8-6, 8-7, 8-9, 8-10, Point Loma Costs Appendix H, Pages B-6, B-7
“Water Authority’s reluctance to acknowledge the imminence of this project, (IPR) it will happen on an accelerated schedule” –Letter from CERF to RMWD

- Project is not included in City of San Diego's 2010 UWMP

- City PUD is working with CDPH on regulations for surface water augmentation with advanced treated recycled water
  - Current planning based on draft groundwater recharge regulations and anticipated surface water augmentation regulations
  - DPH can issue guidelines on case by case basis in advance of final regulations
Comment (cont.) “...imminence of this project, (IPR)…”

- Project is in the early planning stages
  - Subsequent activities include environmental compliance EIR, permitting, etc.
  - City & Metro agencies decision on Clean Water Act compliance strategy

- RWS implementation plan assumes project is built in phases
  - Study includes five integrated reuse alternatives
    - “All proposed plants have startup dates between 2020 and 2035” (RWS, Table 7.2 Footnote)
**Comment**

*IPR will decrease City of San Diego water purchases, reduce demand and significantly impact the remaining agencies*

---

**Existing and Projected City of San Diego Demand on SDCWA**

(Assume 2010 UWMP Projected Local Supplies)

**Projected IPR Use (City of San Diego 2012 Recycled Water Study)**
Comment: Not enough demand for IPR and Desalination

Regional Supply Mix w/ Potential City of SD Indirect Potable Reuse and Otay WD Desalination (Normal Water Year)

- MWD Imported Supplies
- Otay WD Proposed Rosarito Desalination Project
- City of SD RWS (IPR)
- Proposed Carlsbad Desalination Project
- Projected Local Supplies (Verifiable)
- Additional Conservation (20% Reduction by 2020)
- CR Transfers (QSA Supplies)
- Baseline Demands (Includes 56 TAF of Existing Conservation)
Regional Supply Mix w/ Potential City of SD Indirect Potable Reuse and Otay WD Desalination (Single Dry Year)

- **MWD Imported Supplies**
- **Otay WD Proposed Rosarito Desalination Project**
- **City of SD RWS (IPR)**
- **Proposed Carlsbad Desalination Project**
- **Projected Local Supplies (Verifiable)**
- **Additional Conservation (20% Reduction by 2020)**
- **CR Transfers (QSA Supplies)**
- **Baseline Demands (Includes 56 TAF of Existing Conservation)**

**Thousand Acre-feet**

<table>
<thead>
<tr>
<th>Year</th>
<th>MWD Imported Supplies</th>
<th>Otay WD Proposed Rosarito Desalination Project</th>
<th>City of SD RWS (IPR)</th>
<th>Proposed Carlsbad Desalination Project</th>
<th>Projected Local Supplies (Verifiable)</th>
<th>Additional Conservation</th>
<th>CR Transfers (QSA Supplies)</th>
<th>Baseline Demands (Includes 56 TAF of Existing Conservation)</th>
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</thead>
<tbody>
<tr>
<td>2015</td>
<td>694</td>
<td>430</td>
<td>180</td>
<td>77</td>
<td>180</td>
<td>20</td>
<td>270</td>
<td>280</td>
</tr>
<tr>
<td>2020</td>
<td>765</td>
<td>305</td>
<td>205</td>
<td>87</td>
<td>305</td>
<td>20</td>
<td>56</td>
<td>280</td>
</tr>
<tr>
<td>2025</td>
<td>837</td>
<td>302</td>
<td>202</td>
<td>90</td>
<td>90</td>
<td>17</td>
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<td>280</td>
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<tr>
<td>2030</td>
<td>901</td>
<td>322</td>
<td>322</td>
<td>20</td>
<td>92</td>
<td>56</td>
<td>97</td>
<td>280</td>
</tr>
<tr>
<td>2035</td>
<td>957</td>
<td>297</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>56</td>
<td>118</td>
<td>280</td>
</tr>
</tbody>
</table>
Regional Supply Mix w/ Potential City of SD Indirect Potable Reuse and Otay WD Desalination (Single Wet Year)

- **MWD Imported Supplies**
- **Otay WD Proposed Rosarito Desalination Project**
- **City of SD RWS (IPR)**
- **Proposed Carlsbad Desalination Project**
- **Projected Local Supplies (Verifiable)**
- **Additional Conservation (20% Reduction by 2020)**
- **CR Transfers (QSA Supplies)**
- **Baseline Demands (Includes 56 TAF of Existing Conservation)**

**Thousand Acre-feet**

- **2015**: 635
- **2020**: 702
- **2025**: 768
- **2030**: 828
- **2035**: 880
Comment

The $5-$7 per month is an average cost and most larger agencies will pay more

- $5-$7/month is based on high cost estimate, 2013 lower sales forecast than projected in 2016 and current differential with MWD rates

- Sampled rate impacts from representative cross section of agencies
  - Estimates based on financial information provided for each member agency by Water Authority
  - Impacts varied by size of demand and agency's amount of local supplies
  - Composite average residential bill is $75.00 per month

<table>
<thead>
<tr>
<th>Up to 20,000 AFY</th>
<th>20,000–50,000 AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6.84/month</td>
<td>$6.00/month</td>
</tr>
<tr>
<td>$4.36/month</td>
<td>$4.56/month</td>
</tr>
<tr>
<td>$6.30/month</td>
<td>$6.50/month</td>
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