Carlsbad Desal Project Update

Engineering & Operations Committee
May 22, 2014

Frank Belock
## Project Elements

<table>
<thead>
<tr>
<th>Project Element</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Marcos Vent</td>
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<tr>
<td>Pipeline 3 Relining</td>
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<tr>
<td>Twin Oaks Plant Modifications</td>
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<tr>
<td>Conveyance Pipeline</td>
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<tr>
<td>Carlsbad Treatment Plant</td>
<td></td>
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<tr>
<td>System Commissioning</td>
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</tbody>
</table>
San Marcos Vent Modifications
San Marcos Desal Vent Modifications

Before Photo – October 2013

After Photo – May 2014
San Marcos Vent

- Project is complete

- Design – Build Contract
  - Design Engineer – RBF Consulting
  - Contractor - TC Construction

- Notice of Completion on June agenda
Relining of Pipeline 3

- Completed fencing, trapping and relocation of pocket mice.
- Completed vegetation clearing at Portals 2 thru 13
- Installed temporary parking lot near New Movement Church. Developed Portal 14
- Installed soundwalls at Portals 3 through 14
- Continue fabrication and inspection of steel liners

Pacific Pocket Mouse
TOVWTP Modifications

- New 54-inch Dia. Connection and Valve Vault
- Existing Pipeline 3
- Clearwell Upgrades
- New 54-inch Dia. Piping
- Chemical Feed Facilities Upgrades
- TWFCF Upgrades
- New 54-inch Dia. Connection and Valve Vault

Diagram showing the modifications at TOVWTP.
Twin Oaks Improvements

- 54-inch steel pipeline connecting Pipeline 3 to clearwells
- Modify Clearwell 1
- Modify Clearwell 2
- Complete meter vault
- Complete chemical feed facilities
- Complete isolation valve vault
- Complete Testing (end of April 2014)
Conveyance Pipeline Progress to Date

- Safety: (140,000 work-hours) No lost time injuries.
  - Modified duty (finger and bicep)
  - Recordable (eye and finger)
- Design: Over 98% complete
- Amount of pipe installed 18,857 23,000 feet (out of 53,000)
- Current work areas
  - Trench work at Cannon Road at Car Country Drive (Carlsbad)
  - Trench work at Faraday Avenue (Carlsbad)
  - Trench work at Melrose Avenue (Carlsbad)
  - Tunnel work on Cannon Road west to beneath Interstate 5 and north on Avenida Encinas (Carlsbad)
  - Macario Tunnel (start end of May)
  - Tunnel on Faraday Ave at Van Allen Way and College Blvd
Desalination Plant

Current Trench Work

Pacific Ocean

Desalination Conveyance Pipeline
10 miles of new 54-inch Pipe

TOVWTP Improvements

Pipeline 3 Relining (27,100 feet)

Pipeline 3 Work

Current Work

Current Trench Work

Current Trench Work on Faraday

Tunnel Work at Van Allen Way & College Blvd

Progress on Lionshead & Melrose

Aqueduct Connection Facilities

Current Trench Work
Current Trench Work on Faraday

Macario Canyon Tunnel

Desalination Plant

Current Trench Work

Agua Hedionda

Pacific Ocean
Desalination Plant
Desalination Plant Progress

- Safety: No injuries
- Total working on project: 329
- Amount of concrete poured: 26,000 \(\text{29,400} \text{ Cubic yards (72\%)} \text{ (77\%)}\)
- Amount of reinforcement steel: 2,784 \(\text{3,164 tons (85\%)} \text{ (81\%)}\)
- Amount of conduit/pipe placed: 10,295 \(\text{18,934 feet (13\%)} \text{ (24\%)}\)
- Design is 99\% 100\% complete
- Overall: 32\% 41\% complete
- Initiating planning for new intake due to power plant closure
Plant Construction — Intake Pump Station
Plant Construction – Pretreatment
Plant Construction – Racks in RO Building
Carlsbad Desalination Conveyance Facilities

“Contract Administration Memoranda”

<table>
<thead>
<tr>
<th>Contract Administration Memoranda Number/Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Credit</strong>: San Marcos Street Improvements not required</td>
<td>($190,000)</td>
</tr>
<tr>
<td>2. <strong>Credit</strong>: Department of Public Health cutoff wall and monitoring wells not required</td>
<td>($125,000)</td>
</tr>
<tr>
<td>3. <strong>Add</strong>: Property for air release and vacuum valve structures</td>
<td>$100,000</td>
</tr>
<tr>
<td>4. <strong>Add</strong>: Costs to permit and develop Macario tunnel design</td>
<td>$185,000</td>
</tr>
<tr>
<td>5. <strong>Administrative</strong>: Schedule of Values</td>
<td>No Cost</td>
</tr>
<tr>
<td>6. <strong>Add</strong>: Carlsbad Valve Vault (Reimbursable)</td>
<td>$29,300</td>
</tr>
<tr>
<td>7. <strong>Add</strong>: Vallecitos 9 Flow Control (Reimbursable)</td>
<td>$219,300</td>
</tr>
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</table>
## Contract Administration Memoranda

<table>
<thead>
<tr>
<th>Number/Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowance for pipe thickness, steel etc. to handle pipeline pressure</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>• Steel for mainline</td>
<td>$4,850,000</td>
</tr>
<tr>
<td>• Bends &amp; Elbows &amp; Tunnel (estimated)</td>
<td>1,000,000</td>
</tr>
<tr>
<td><strong>Current Balance</strong></td>
<td><strong>$4,150,000</strong></td>
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</tbody>
</table>
# Carlsbad Desalination Project Budget Summary

<table>
<thead>
<tr>
<th>Task/Activity</th>
<th>Lifetime Budget ($ Millions)</th>
<th>Expended ($ Millions)</th>
<th>% Expended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desalination Plant Water Purchase Agreement</td>
<td>$3.97</td>
<td>$1.18</td>
<td>30%</td>
</tr>
<tr>
<td>Desalination Product Water Conveyance Pipeline</td>
<td>$10.40</td>
<td>$5.27</td>
<td>50%</td>
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<tr>
<td>Pipeline 3 Desalination Relining</td>
<td>$36.46</td>
<td>$8.14</td>
<td>22%</td>
</tr>
<tr>
<td>San Marcos Vent Desalination Modifications</td>
<td>$3.20</td>
<td>$2.37</td>
<td>74%</td>
</tr>
<tr>
<td>Twin Oaks Treatment Plant Modifications</td>
<td>$17.35</td>
<td>$15.72</td>
<td>90%</td>
</tr>
<tr>
<td>Carlsbad MWD New Facilities for Desal</td>
<td>$0.12</td>
<td>$ -</td>
<td>-</td>
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<tr>
<td>Vallecitos WD New Facilities for Desal</td>
<td>$0.22</td>
<td>$ -</td>
<td>-</td>
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<tr>
<td>Carlsbad Desalination Project Contingencies</td>
<td>$8.50</td>
<td>$ -</td>
<td>-</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$80.0</strong></td>
<td><strong>$32.68</strong></td>
<td><strong>40.8 %</strong></td>
</tr>
</tbody>
</table>
Lake Hodges Pumped Storage Payback Period

Engineering and Operations Committee
May 22, 2014
Payback Period History

- 2002: Payback period was estimated between 18 and 21 years
- 2004: Post energy crisis and after negotiation of power purchase agreement, payback period improved and was estimated at 8.8 years
Payback Period Factors

- Revenues
  - Capacity payment
  - O&M variable payment
- Operations and maintenance costs
- Avoided cost for operational pumping (discounted energy rate)
- Capital costs
- Penalties (to be fully paid in February 2015)
Calculation of Payback Period

- Gross Revenues: $2.8M/year
- Operating Expenses: $1.1M/year
- Total Capital Cost: $64M
- Litigation Recovery: $30M
- SDG&E Penalties: $7.2M
- After construction finished and litigation settled, final payback period is 9 years, 7 months
# Estimated Net Project Costs ($ millions)

<table>
<thead>
<tr>
<th></th>
<th>MWH</th>
<th>Archer</th>
<th>Andritz</th>
<th>Sub Total</th>
<th>WA Labor</th>
<th>Third Party</th>
<th>Legal</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original *</td>
<td>$8.8</td>
<td>$56.5</td>
<td>$14.8</td>
<td>$80.1</td>
<td>$3.7</td>
<td>$11.1</td>
<td>$0.2</td>
<td>$37.9</td>
<td>$133.0</td>
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<tr>
<td>Errors (MWH)**</td>
<td>$0.0</td>
<td>$11.5</td>
<td>$2.2</td>
<td>$13.7</td>
<td>$1.5</td>
<td>$3.2</td>
<td>$3.0</td>
<td>$2.3</td>
<td>$23.7</td>
</tr>
<tr>
<td>Unit Binding (AW/AH) **</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$0.9</td>
<td>$0.6</td>
<td>$1.8</td>
<td>$2.3</td>
<td>$5.6</td>
</tr>
<tr>
<td>Test Failure (AH) **</td>
<td>$0.0</td>
<td>$0.4</td>
<td>$0.0</td>
<td>$0.4</td>
<td>$0.3</td>
<td>$0.8</td>
<td>$1.1</td>
<td>$0.0</td>
<td>$2.6</td>
</tr>
<tr>
<td>Other Delays</td>
<td>$0.0</td>
<td>$0.2</td>
<td>$0.0</td>
<td>$0.2</td>
<td>$0.1</td>
<td>$0.3</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$0.6</td>
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<tr>
<td>Normal Changes</td>
<td>$0.0</td>
<td>$6.4</td>
<td>$(1.0)</td>
<td>$(1.0)</td>
<td>$3.0</td>
<td>$7.5</td>
<td>$1.3</td>
<td>$(6.0)</td>
<td>$11.2</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>$8.8</td>
<td>$75.0</td>
<td>$16.0</td>
<td>$99.8</td>
<td>$9.5</td>
<td>$23.5</td>
<td>$7.4</td>
<td>$36.5</td>
<td>$176.7</td>
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<tr>
<td>Less Reimbursable</td>
<td>$(17.1)</td>
<td>$(6.6)</td>
<td>$(6.3)</td>
<td>$(30.0)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>$(30.0)</td>
</tr>
<tr>
<td><strong>Net Project Cost</strong></td>
<td>$(8.3)</td>
<td>$68.4</td>
<td>$9.7</td>
<td>$69.8</td>
<td>$9.5</td>
<td>$23.5</td>
<td>$7.4</td>
<td>$36.5</td>
<td>$146.7</td>
</tr>
</tbody>
</table>

- * – Original Board approved capital budgets were $64.2 million.
- ** – Board approved construction change orders and consultant amendments.
Water Authority Fire Response
May 13–16, 2014

Engineering & Operations Committee
May 22, 2014
Pipeline 4 Manhole Structure, Mountain Fire
- Supervisory Control and Data Acquisition (SCADA) System
- Monitor Water Flow
- Communications Status
Regional Significant Events

Some residents who were evacuated in the Cocos Fire can now return home, incident commanders said.

REPOPULATION AREAS:

San Marcos
South of 78, West of Twin Oaks Valley Road through the San Elijo Community to San Elijo at S. Rancho Santa Fe.

The repopulation route for San Elijo will be Rancho Santa Fe Road.

Escondido
West of Valley Parkway, including the community south of Citracado and west of Del Dios Highway, as well as areas north of Via Rancho and west of Felicita Road.

CLOSURES STILL IN EFFECT:

San Marcos
Questhaven south of Elfin Forest through Harmony Grove and the area east of Twin Oaks Valley Road along Barham Drive and south into the Coronado Hills community.

Escondido
Remaining closed are the communities of Hidden Hills and Live Oak. Country Club Road from Hill Valley to Harmony Grove Road and Kauana Loa to Harmony Grove. Harmony Grove will remain closed at County Club Drive.

For the latest emergency updates, visit...

Water Hub

San Diego County Water Authority's Escondido Operations Center EOC is deactivating at 17:00.

For water issues - contact SD County Water Authority Duty Operator at (760) 233-3291.

CWA seat at County EOC moving to on-call status.

For water issues - contact SD County Water Authority Duty Operator at (760) 233-3291.

ETR for Pendleton outage is 2000 hours per website.
Security Camera Monitoring

- Critical Facilities
- Use of Pan Tilt Zoom (PTZ)
Vehicle Global Positioning System (GPS)
Agenda

- Hydropower Task Force Meeting #4 Summary
- Special E&O Committee Meeting Follow Up
- Project Finance and Economics Report Out
- Regulatory Update
- Project Sequence
- Water Authority/City of San Diego Agreement Status
- Proposed Budget Recommendation for June 2014
- Hydropower Task Force Recommendations
Technical Feasibility

- Four upper reservoir options evaluated
- All appear feasible
- Connection to SDG&E at nearby Sycamore substation
- Cost is about $1B
- Technical analysis:
  - Configuration – Powerhouse, Tunnels, Inlet/Outlet, Electric works, etc.
  - Geotechnical evaluation (high level)
  - Upper reservoir sizing (500 MW for 8 hours of storage)
  - Environmental (high level)
  - Costs
Clean Energy Capital Review of B&V Study

- Clean Energy Capital has:
  - Read the draft report
  - Reviewed the underlying proforma financial models
  - Interviewed B&V’s financial modeling team

- Key area of focus:
  - Revenue projections
  - Financing assumptions
  - Financial metrics
  - Development (partnering) strategies
## Key Economic Driver
### Revenue Assumptions

### Gross revenue projections (first year of operations in 2022)

<table>
<thead>
<tr>
<th></th>
<th>Low-Value Case</th>
<th>Mid-Value Case</th>
<th>High-Value Case</th>
<th>Relative Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity (net of replacement)</td>
<td>$7M</td>
<td>$7M</td>
<td>$7M</td>
<td>4% to 7%</td>
</tr>
<tr>
<td>Capacity</td>
<td>$84M</td>
<td>$108M</td>
<td>$132M</td>
<td>71% to 79%</td>
</tr>
<tr>
<td>Ancillary Services</td>
<td>$15M</td>
<td>$30M</td>
<td>$46M</td>
<td>14% to 25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$106M</strong></td>
<td><strong>$145M</strong></td>
<td><strong>$184M</strong></td>
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</table>

Price forecast based on:
- Growing demand for capacity
- Cost of fossil fuel (natural gas) generation
- High variance among cases
## Review of B&V Proforma Financial Analysis Summary

<table>
<thead>
<tr>
<th>Key Inputs:</th>
<th>Low-Value Case</th>
<th>Mid-Value Case</th>
<th>High-Value Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Costs (2019 Start)</td>
<td>$1.0B</td>
<td>$938M</td>
<td>$938M</td>
</tr>
<tr>
<td>First-Year Net Revenues (2022 Start)</td>
<td>$103M</td>
<td>$142M</td>
<td>$166M</td>
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</table>

<table>
<thead>
<tr>
<th>Key Results:</th>
<th>Low-Value Case</th>
<th>Mid-Value Case</th>
<th>High-Value Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 Net Present Value at 5%</td>
<td>$416M</td>
<td>$1.1M</td>
<td>$1.5B</td>
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<tr>
<td>2014 Net Present Value at 10%</td>
<td>($58M)</td>
<td>$237M</td>
<td>$393M</td>
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<tr>
<td>Unleveraged Pre-Tax IRR</td>
<td>9%</td>
<td>14%</td>
<td>17%</td>
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</table>
Development (Partnering) Strategy

- The report presents two main alternatives:
  - One-Partner option (Off-taker)
  - Two-Partner option (Developer and Off-taker)
- Both development strategies appear viable
- There appear to be additional potential development strategies
- Economic results for the Water Authority will depend on:
  - Pricing of output
  - Timing of execution
  - Specific commercial terms (risk allocation)
Project Sequence

**Near-Term:** Need information to determine impact on Potable Reuse project
- **What?** - Inlet/outlet study and additional water quality modeling
- **When?** - By Early 2015

**Mid-Term:** Need information to determine Water Authority/City roles and project delivery method
- **What?** - Independent financial review and power market analysis, and City/Water Authority agreement
- **When?** - By Mid 2015
Near-Term Deliverables

- **Limnology Study**
  - Water quality modeling for the City’s Potable Reuse Project
  - Additional modeling considering potential inlet/outlet locations and operations

- **Inlet/Outlet Study**
  - Incorporate limnology modeling results
  - Optimize I/O location and elevation
Near-Term Deliverables

- Power Market Study
  - Update financials
  - Continue to monitor power market

- Preliminary Site Screening
  - Equipment configuration refinement (number and size)
  - Updated cost evaluation
  - NEPA - Requires multiple alternatives be evaluated
Mid-Term Deliverable

- Monte Carlo Analysis decision-making software
- Used for projects such as master plans
- Supports decision and risk analysis
- Assists in making decisions based on the most important variables
  - Weight variables accordingly
- Simulates future performance
- Could be used to assist with decisions such as determining project delivery method
Regulatory Activity Update

- **CAISO**
  - List of applicants for 2014 Interconnection Permit published within the next 30 days

- **CPUC**
  - **2012 LTPP** “Track 4” Final Ruling on March 14
    - Bundled procurement plans to be submitted within 3 months of final ruling
  - **2014 LTPP** Scoping Memo issued May 6 with schedule for Phase 1a)
  - LTPP now assigned to Commissioner Picker (was Commissioner Florio)
    - City/Water Authority met May 20
    - New commissioner and new staff
Water Authority/City of San Diego Agreement

- Acknowledge project is a multi-year effort
- Revenues/benefits based on each party’s financial contribution to project
- Water Authority will be:
  - Lead on CEQA/NEPA compliance and permitting
  - Holder of FERC permit
  - Contract for any necessary, economic studies, design, and construction activities
- City will be:
  - Lead on limnology study modeling of possible impacts to potable reuse
- Both parties will invite representatives of other parties to participate and review
Proposed Budget Recommendation for June 2014

- Funding = $1.2M
  - Additional Reservoir Modeling ≈ $350K
  - Professional Services ≈ $600K
    - I/O Study and refinement of project alternatives (Black & Veatch)
    - Power market advisor (Navigant)
    - Power market study (Navigant)
    - Financial advisor (Clean Energy Capital)
  - Project administration, interagency/regulatory coordination, technical support $250K

- Note: Cost to be shared between Water Authority and City
Hydropower Task Force
Recommendations for June 2014

- Add San Vicente Pumped Storage Study to CIP
- Approve $1.2M in funding
Welded Steel Pipeline Nondestructive Testing Services (Action)

Engineering & Operations Committee
May 22, 2014

Nathan Faber
Pipeline 4 Inspection Results

Corrosion
- Locations: 1,107
- Wall Loss: 29% Average
- Size: Less than a Quarter
- Area: 5 of 1,500,000 square feet
- Overall: Good Condition

Changes Made – Data Download
Staff Recommendation

Authorize the General Manager to award an amendment to the professional services contract with Pure Technologies US Inc. in the amount of $1,077,000 to provide nondestructive testing services and condition assessment of Pipeline 3 from the Delivery Point to the Twin Oaks Valley Water Treatment Plant. This will increase the total contract amount to $2,196,000.
Proposed Calendar Year 2015
Rates and Charges

Administrative and Finance Committee
May 22, 2014

David Shank, Financial Planning Manager
Agenda

• CY 2015 Rate and Charge Drivers and Highlights
• Proposed Rates and Charges
• Phase II Cost of Service Study Summary
  – Integrating the cost of desalination
• Rate and Charge Calendar
CY 2015 Rate and Charge Drivers

• MWD’s Treatment Rate Increase
• Cost of desalinated water
  – Earlier water delivery increases CY 2015 costs
• Securing a prudent financial position
  – Smooth and predictable rates and charges
  – Position to achieve the RSF target levels
### Adopted MWD CY 2015 Rates

<table>
<thead>
<tr>
<th>Adopted MWD</th>
<th>CY 2014</th>
<th>CY 2015</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1 Supply</td>
<td>$148</td>
<td>$158</td>
<td>6.76%</td>
</tr>
<tr>
<td>System Access</td>
<td>$243</td>
<td>$257</td>
<td>5.76%</td>
</tr>
<tr>
<td>Water Stewardship</td>
<td>$41</td>
<td>$41</td>
<td>0.0%</td>
</tr>
<tr>
<td>System Power</td>
<td>$161</td>
<td>$126</td>
<td>-21.74%</td>
</tr>
<tr>
<td>Treatment</td>
<td>$297</td>
<td>$341</td>
<td>14.81%</td>
</tr>
<tr>
<td>Tier 1 Untreated</td>
<td>$593</td>
<td>$582</td>
<td>-1.85%</td>
</tr>
<tr>
<td>Tier 1 Treated</td>
<td>$890</td>
<td>$923</td>
<td>3.71%</td>
</tr>
</tbody>
</table>

- Water Authority treatment costs mitigate MWD’s increase
- CY 2015 fixed charge increases
  - Readiness-to-Serve Charge (RTS) - $158M for a decrease of 4.8%
  - Capacity Charge - $11,100/cfs for an increase of 29.1%
CY 2015 Carlsbad Desalination Costs

- Excellent progress on the project
- Expected production date moved up to Fall 2015
  - Estimated delivery of 16K AF in CY 2015
- Financial impact of early production
  - Net increase of $22M in costs
- Rates and charges impacted
  - Supply
  - Transportation
  - IAC
Meeting Rate and Charge Objectives/Goals

- Smooth and predictable rates
  - Mitigating the CY 2016 rate impact of desalination
    - First full year of desalination costs
  - Facing potential supply challenges and demand uncertainty (Success of conservation efforts)

- Meeting Rate Stabilization Fund (RSF) target
  - RSF target increases significantly as revenues become more subject to volatility
Water Sales Forecast

Water Sales Forecast

San Diego County Water Authority

Water  Sales  Forecast

Water Sales Forecast

2014 Rates & Charges Projections

2015 Rates & Charges Projections

Calendar Year


468  491  496  505  514  523  533  545  556  567  578  587

540

580
Quantification Settlement Agreement

- Colorado River QSA Supplies
  - Imperial Irrigation District transfer
    - 200,000 AF/year for 45 to 75 years
  - Canal-lining projects
    - 80,000 AF/year for 110 years
- Key to supply diversification strategy
  - Provide 180,000 acre-feet in 2015
- By 2021, 34% of region’s supply

IID and Canal Lining Deliveries 2003-2021

Acre-Feet

- Canal Lining
- IID Water Transfer

Calendar Year

MWD Remains the Largest Share of Water Cost

- MWD Tier 1 Costs 51%
- MWD Exchange Agreement Costs 23%
- IID Water Purchases* 18%
- Canal Water Purchases <1%
- Desalination 8%

MWD Represents 74% of the Cost of Water

Total Cost = $340M

Excludes MWD’s fixed RTS and CRC charges, which are not recovered on the Melded Supply Rate
*Excludes the debt service for capital projects and recovery of settlement expenditures
Water Authority’s Treatment Costs

- MWD treatment costs increase by 14.8% while Water Authority costs decreased by approximately 8%

Total Cost = $56.0M

- MWD 50%
- Twin Oaks 35%
- Helix 7%
- Desalinated Water 8%

In-Region Treatment Represents 50% of the Treatment Costs
Options for setting the Melded Supply Rate

- Option 1: Permanent Special Agricultural Water Rate (SAWR) per Board policy – Program starts 1/1/2015
  - Only Storage discount continued

- Option 2A: Transitional Special Agricultural Water Rate (TSAWR) is extended through CY 2015
  - Full cost recovery through increased rates

- Option 2B: TSAWR is extended through CY 2015
  - RSF support reduced by $7.1M in CY 2015
  - Maintains the same rates as Option #1
# Melded Supply Rate Calculation

## Calendar Year 2015

<table>
<thead>
<tr>
<th>Description</th>
<th>Option #1</th>
<th>Option #2A</th>
<th>Option #2B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acre-Foot Sales (A/F) (000's)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MWD Tier I</td>
<td>296.5</td>
<td>258.1</td>
<td>258.1</td>
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<tr>
<td>IID</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Canal Water Delivery Costs</td>
<td>80.2</td>
<td>80.2</td>
<td>80.2</td>
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<tr>
<td>Carlsbad Desalination Production</td>
<td>16.3</td>
<td>16.3</td>
<td>16.3</td>
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<tr>
<td><strong>TOTAL A/F SALES</strong></td>
<td><strong>493.0</strong></td>
<td><strong>454.6</strong></td>
<td><strong>454.6</strong></td>
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<tr>
<td>Water Purchase Cost (in Millions)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MWD Tier 1 Water Purchases</td>
<td>$172.6</td>
<td>$150.2</td>
<td>$150.2</td>
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<tr>
<td>QSA Exchange with MWD Costs</td>
<td>76.4</td>
<td>76.4</td>
<td>76.4</td>
</tr>
<tr>
<td>IID Water Purchases</td>
<td>62.4</td>
<td>62.4</td>
<td>62.4</td>
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<tr>
<td>Canal Water Purchases</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>Desalinated Water Supply Costs</td>
<td>28.1</td>
<td>28.1</td>
<td>28.1</td>
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<tr>
<td><strong>Subtotal Water Purchases</strong></td>
<td><strong>$340.5</strong></td>
<td><strong>$318.1</strong></td>
<td><strong>$318.1</strong></td>
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<tr>
<td>Additional Costs (in Millions)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Supply Revenue Requirement</td>
<td>$27.3</td>
<td>$24.3</td>
<td>$20.2</td>
</tr>
<tr>
<td>IID Socioeconomic</td>
<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td>QSA Environmental</td>
<td>5.3</td>
<td>5.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Groundwater Storage</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Subtotal Other Costs</strong></td>
<td><strong>$36.2</strong></td>
<td><strong>$33.2</strong></td>
<td><strong>$29.1</strong></td>
</tr>
<tr>
<td><strong>TOTAL SUPPLY COST</strong></td>
<td><strong>$376.7</strong></td>
<td><strong>$351.3</strong></td>
<td><strong>$347.2</strong></td>
</tr>
<tr>
<td><strong>A/F RATE (Total Supply Cost /Total A/F Sales)</strong></td>
<td><strong>$764</strong></td>
<td><strong>$773</strong></td>
<td><strong>$764</strong></td>
</tr>
</tbody>
</table>
# Proposed Rates & Charges

<table>
<thead>
<tr>
<th>Water Authority Rates and Charges</th>
<th>CY 2013 Previous</th>
<th>CY 2014 Current</th>
<th>CY 2015 Proposed</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable Rates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melded Supply Rate ($/AF)</td>
<td>$714</td>
<td>$732</td>
<td>$764 or $7731</td>
<td>4.4% or 5.6%</td>
</tr>
<tr>
<td>Melded Treatment Rate ($/AF)</td>
<td>$256</td>
<td>$274</td>
<td>$278</td>
<td>1.5%</td>
</tr>
<tr>
<td>Transportation Rate ($/AF)</td>
<td>$93</td>
<td>$97</td>
<td>$101</td>
<td>4.1%</td>
</tr>
<tr>
<td><strong>Fixed Charges</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Charge (millions)</td>
<td>$60.2</td>
<td>$63.2</td>
<td>$63.2</td>
<td>0%</td>
</tr>
<tr>
<td>Customer Service Charge (millions)</td>
<td>$26.4</td>
<td>$26.4</td>
<td>$26.4</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Other Rates and Charges</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Untreated Special Agricultural Water Rate ($/AF)</td>
<td>$593</td>
<td>$593</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Treated Special Agricultural Water Rate ($/AF)</td>
<td>$849</td>
<td>$867</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>IAC</td>
<td>$2.65/ME3</td>
<td>$2.68/ME</td>
<td>$2.76/ME</td>
<td>3.0%</td>
</tr>
<tr>
<td>Standby Availability Charge4 per parcel or acre, whichever is greater</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
<td>0%</td>
</tr>
<tr>
<td>System Capacity Charge</td>
<td>$4,326/ME</td>
<td>$4,681/ME</td>
<td>$4,681/ME</td>
<td>0%</td>
</tr>
<tr>
<td>Treatment Capacity Charge</td>
<td>$166/ME</td>
<td>$119/ME</td>
<td>$119/ME</td>
<td>0%</td>
</tr>
</tbody>
</table>

1 The rates shown correspond to the Board’s requested rate options
2 Per Board Policy, Special Agricultural Water Rate end December 31, 2014
3 ME means meter equivalent as defined in the resolution establishing the Infrastructure Access Charge
4 Fiscal year charge
### Proposed CY 2015 “All-in” M&I Water Rate Breakdown

<table>
<thead>
<tr>
<th>Rates and Charges ($/AF)</th>
<th>Adopted CY 2014 Rates</th>
<th>Proposed CY 2015 Rates</th>
<th>Proposed CY 2015 Change in Rate</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melded Supply Rate</td>
<td>$732</td>
<td>$764 or $773</td>
<td>$32 or $41</td>
<td>4.4% or 5.6%</td>
</tr>
<tr>
<td>Melded Treatment Rate</td>
<td>274</td>
<td>278</td>
<td>4</td>
<td>1.5%</td>
</tr>
<tr>
<td>Transportation</td>
<td>97</td>
<td>101</td>
<td>4</td>
<td>4.1%</td>
</tr>
<tr>
<td>Storage*</td>
<td>144</td>
<td>140</td>
<td>-4</td>
<td>-2.8%</td>
</tr>
<tr>
<td>Customer Service*</td>
<td>56</td>
<td>54</td>
<td>-2</td>
<td>-3.6%</td>
</tr>
<tr>
<td><strong>Total Cost of Treated Water</strong></td>
<td>$1,303</td>
<td>$1,337 or $1,346</td>
<td>$34 or $43</td>
<td>2.6% or 3.3%</td>
</tr>
<tr>
<td><strong>Total Cost of Untreated Water</strong></td>
<td>$1,029</td>
<td>$1,059 or $1,068</td>
<td>$30 or $39</td>
<td>2.9% or 3.8%</td>
</tr>
</tbody>
</table>

*Fixed charges converted to $/AF using sales forecast and may not foot due to rounding.
## Proposed CY 2015 Rate and Charge Summary

<table>
<thead>
<tr>
<th>Rates and Charges ($/AF)</th>
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<th>Proposed CY 2015 Rates</th>
<th>Proposed CY 2015 Change in Rate</th>
<th>Percent Change</th>
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</thead>
<tbody>
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<td>4.4% or 5.6%</td>
</tr>
<tr>
<td>Melded Treatment Rate</td>
<td>274</td>
<td>278</td>
<td>4</td>
<td>1.5%</td>
</tr>
<tr>
<td>Transportation</td>
<td>97</td>
<td>101</td>
<td>4</td>
<td>4.1%</td>
</tr>
<tr>
<td>Storage(^1)</td>
<td>144</td>
<td>140</td>
<td>-4</td>
<td>-2.8%</td>
</tr>
<tr>
<td>Customer Service(^1)</td>
<td>56</td>
<td>54</td>
<td>-2</td>
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</tr>
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</table>

\(^1\)Fixed charges converted to $/AF using sales forecast and may not foot due to rounding

<table>
<thead>
<tr>
<th>Rates and Charges</th>
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<th>Proposed CY 2015 Rates</th>
<th>Proposed CY 2015 Change in Rate</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAC</td>
<td>$2.68/ME/Month</td>
<td>$2.76/ME/Month</td>
<td>$0.08</td>
<td>3.0%</td>
</tr>
<tr>
<td>Standby Availability(^2)</td>
<td>$10/acre or parcel less than 1 acre</td>
<td>$10/acre or parcel less than 1 acre</td>
<td>$0</td>
<td>0%</td>
</tr>
<tr>
<td>MWD Capacity Charge(^3)</td>
<td>$8,268,900</td>
<td>$10,738,140</td>
<td>$2,469,240</td>
<td>29.9%</td>
</tr>
<tr>
<td>MWD Readiness-to-Serve(^2,3)</td>
<td>$24,498,074</td>
<td>$25,043,402</td>
<td>$545,328</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

\(^2\)Fiscal Year Charge  
\(^3\)Adopted by the MWD Board on April 8, 2014
Proposed All-in Untreated Water Rate

All-in Untreated Water Rate

Proposed CY 2015 All-in Untreated Water Rate
OPTION 2A: $1,068 (3.8%)

Current Rate $1,029

OPTION 1 & 2B: $1,059 (2.9%)

2011 Rate Forecast
High Rate Scenario $1,344
Low Rate Scenario $1,160

San Diego County Water Authority
Proposed All-in Treated Water Rate

All-in Treated Water Rate

- **Current Rate:** $1,303
- **Proposed CY 2015 All-in Treated Water Rate**
  - OPTION 1 & 2B: $1,337 (2.6%)
  - Proposed CY 2015 All-in Treated Water Rate
    - OPTION 2A: $1,346 (3.3%)

**2011 Rate Forecast**
- High Rate Scenario: $1,559
- Low Rate Scenario: $1,231

**2011 Rate Forecast**
- High Rate Scenario: $1,648
- Low Rate Scenario: $1,404

**Calendar Year**
- 2014
- 2015
- 2016
- 2017

San Diego County Water Authority
Financial Performance Metrics Option 1

Current Board Policy - RSF Fund Balance Requirements

Fiscal Year:
- Rate Stabilization Fund
- RSF Target Ending Balance
- RSF Maximum Allowable Ending Balance
Financial Performance Metrics
Option 2A

Current Board Policy - RSF Fund Balance Requirements

Fiscal Year
- Rate Stabilization Fund
- RSF Target Ending Balance
- RSF Maximum Allowable Ending Balance
Financial Performance Metrics
Option 2B

Current Board Policy - RSF Fund Balance Requirements

- Rate Stabilization Fund
- RSF Target Ending Balance
- RSF Maximum Allowable Ending Balance
Summary

• Key rate and charge drivers
  – Delivery of desalinated water – Fall 2015
  – Maintaining Board financial policies
• Rate and charge volatility mitigation
  – Very successful debt management
  – Improving sales environment and continued cost control measures
• Moderate increase in overall water rates and charges
  – Treated increase 2.6% or 3.3%
  – Untreated increase 2.9% or 3.8%
• Overall rate and charge increase will vary by member agency depending upon the fixed charge allocations
Cost of Service: Carlsbad Desalination Project Allocation

May 22, 2014
Agenda

- Cost of Service Process Overview
- CY 2015 Rate Impacts and Recommendations
- Questions
Carlsbad Desalination Project Cost of Service Study Objectives

• Evaluate the Board’s March 27th direction for compliance with AWWA cost-of-service standards, industry best practices, Board policies, and California legal requirements

• Evaluate basis for distributing Desalination Project costs to appropriate rate categories and components

• Evaluate the proposed CY 2015 rates and charges for the appropriate recovery of costs related to the Carlsbad Desalination Project
## Cost of Service Study Timeline

<table>
<thead>
<tr>
<th>December 2012</th>
<th>May 2013</th>
<th>June 2013</th>
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</thead>
<tbody>
<tr>
<td><strong>Cost of Service Study – Phase I</strong>&lt;br&gt;CY 2014 Rates and Charges</td>
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</table>

<table>
<thead>
<tr>
<th>May 2013</th>
<th>June 2013</th>
<th>September 2013</th>
<th>December 2013</th>
<th>January 2014</th>
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<tbody>
<tr>
<td><strong>Fiscal Sustainability Task Force &amp; COS Workgroup</strong></td>
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<table>
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<tr>
<th>September 2013</th>
<th>October 2013 – May 2014</th>
<th>June 2014</th>
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</thead>
<tbody>
<tr>
<td><strong>COS Study – Phase II Desal</strong></td>
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</table>
Cost of Service Review Process

- Independently reviewed rate methodologies for equity and consistency with AWWA guidelines and Board policies
- Reviewed FSTF and COS Workgroup presentations and recommendations
- Reviewed recommendations and rate impacts with Water Authority staff
- Confirmed impact of Desalination Project on proposed CY 2015 rates and charges
Desalination Cost of Service Integration in CY 2015 Water Rate and Charge Calculations

- Identified Project Costs
  - Plant

- Allocation of Project Costs/Benefits
  - Supply
  - Treatment

- Water Rates & Charges
  - Supply Commodity Rate
  - Treatment Commodity Rate
Desalination Cost of Service Integration in CY 2015 Water Rate and Charge Calculations

- Identified Project Costs
  - Pipeline

- Allocation of Project Costs/Benefits
  - Transportation

- Water Rates & Charges
  - Transportation Commodity Rate
  - IAC
• Two cost components and debt issuances
  • Plant - $32.6 million
  • Pipeline - $3.4 million
• Water Purchase Agreement with minimum annual commitment
• Plant provides ‘treated’ water supply
  • Direct and incidental benefits
  • Primary categorization to Supply
  • Allocation to Treatment commensurate with melded Treatment rate
• Pipeline provides transportation
  • Categorization to Transportation
- Recovery of Plant costs through Supply & Treatment rates
- Recovery of Pipeline costs recovered through Transportation rate and IAC
Desalination Cost of Service Allocations to CY 2015 Water Rate and Charges

Desalination Project

- Plant: $32.6 M
- Pipeline: $3.4 M
Desalination Plant Cost of Service Allocations to CY 2015 Supply and Treatments Rates

- **Plant**: $32.6 M
  - **Supply**: $28.1 M
  - **Treatment**: $4.5 M
Desalination Pipeline Cost of Service Allocations to CY 2015 Transportation & IAC

Pipeline $3.4 M

Transportation Commodity Rate

IAC*

*Calculated using the forward looking 4-year average debt payments
Carollo’s Findings and Recommendations

• Allocation to the melded Supply rate for CY 2015 of Desalination Plant costs is reasonable and consistent with cost of service requirements and Water Authority policies.

• Providing a Treatment Charge Credit for a portion of the Plant costs as recommended by the Workgroup is reasonable and consistent with cost of service requirements and Water Authority policies.

• Pipeline allocation to the Transportation Rate and IAC of Project costs associated is reasonable and consistent with cost of service requirements and existing Water Authority policies.

• System Improvements allocation to the Transportation Rate and IAC is reasonable and consistent with cost of service requirements and existing Water Authority policies.
Bay-Delta Conservation Plan: Draft EIR/EIS
Comment Letter

Imported Water Committee
May 22, 2014

Presented by:
Larry Purcell, Water Resources Manager
BDCP Review Process

- Monitoring Delta issue for years
- Multi-disciplinary staff analysis
- Over one year of Board discussion
- Formal comment letter is first milestone in developing an official position
Environmental Review

BDCP is an ESA permitting approach addressing Delta:

- Ecosystem health and productivity
- Water supply reliability
- Hydrology and water quality
Environmental Review

- EIR/EIS is a joint CEQA and NEPA document
- Analyzes potential environmental effects if BDCP is approved
- Required for execution of Implementing Agreement and HCP/NCCP permits
Documents Reviewed

- BDCP
  - Conservation Measures
  - Economic Benefits
  - Financing
  - Governance
  - Water Supply
- Conceptual Engineering Report
  - Infrastructure
- Draft EIR/EIS
  - Environmental Effects
  - Mitigation Measures
## Comment Subject Areas

<table>
<thead>
<tr>
<th>Draft BDCP &amp; EIR/EIS</th>
<th>Comment Number</th>
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<tbody>
<tr>
<td>Governance</td>
<td>1, 13-22</td>
</tr>
<tr>
<td>Funding</td>
<td>23-30</td>
</tr>
<tr>
<td>Economic Benefits</td>
<td>31-38</td>
</tr>
<tr>
<td>Implementation</td>
<td>2, 5, 6, 10-12</td>
</tr>
<tr>
<td>Decision Tree</td>
<td>7-9</td>
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<tr>
<td>Environmental Analysis</td>
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<td>Environmental Baseline</td>
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<table>
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<tr>
<th>Conceptual Engineering Report</th>
<th>Comment Number</th>
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<td>Schedule</td>
<td>39-41</td>
</tr>
<tr>
<td>Cost Estimate Accuracy</td>
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</tr>
<tr>
<td>Project Risks</td>
<td>42</td>
</tr>
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</table>
Adopt Positions on Bills

Legislation, Conservation & Outreach Committee
May 22, 2014

Glenn Farrel, Government Relations Manager
Recommended Bill Positions Consistent With Legislative Policy Guidelines

- **AB 1434 (Yamada) – Low Income Water Rate Assistance Program**
  - Staff Recommendation: Oppose Unless Amended

- **AB 1705 (Williams) – Public Contract Retention Proceeds**
  - Staff Recommendation: Oppose Unless Amended
Renewable Energy and Salton Sea Restoration

- **SB 1139 (Hueso): California Renewables Portfolio Standard Program**
  - Would require each retail energy provider to procure a share of a statewide total of 500 MW of geothermal energy
  - Would provide that geothermal energy procured pursuant to the requirements in SB 1139 would not count toward meeting obligations under the California Renewables Portfolio Standard Program
Renewable Energy and Salton Sea Restoration

- **Objective of SB 1139 (Hueso)**
  - Sponsored by the Imperial Irrigation District
  - SB 1139 would advance opportunities for implementation of the *Salton Sea Restoration & Renewable Energy Initiative*
  - Intended to leverage funds generated by new renewable energy projects located at the Salton Sea to help finance activities for air quality management and restoration

- **Issues with SB 1139 (Hueso)**
  - Lack of eligibility for geothermal power to count towards achieving obligations under the California Renewables Portfolio Standard Program
  - Precedent could create disincentives for advancing feasible renewable energy projects, such as pumped hydropower storage
Renewable Energy and Salton Sea Restoration

- Staff recommendation on SB 1139 (Hueso)
  - Staff recommended position on SB 1139: Support if Amended
  - Proposed amendment: Ensure that geothermal power counts toward achievement of the California Renewables Portfolio Standard
Staff Recommendation

- Adopt the following bill positions:
  - AB 1434 (Yamada): Oppose Unless Amended
  - AB 1705 (Williams): Oppose Unless Amended
  - SB 1139 (Hueso): Support if Amended
Drought Response/Conservation Outreach Update

Legislation, Conservation and Outreach Committee
May 22, 2014
Campaign Launch

April 29 media event
Member Agency Coordination

- May 5 - Joint Public Information Council meeting
- Message and materials development
Advertising

- Radio and online ads under way

- TV partnerships starting in June
Partnerships

San Diego Regional Airport Authority

Terminal 1
Partnerships

San Diego Regional Airport Authority

Terminal 1
Partnerships

San Diego Regional Airport Authority

Terminal 2
Upcoming Activities

- Rock ‘n’ Roll Marathon
- San Diego County Fair
- Succulent Celebration
Web Portal

Hub for drought response

www.sdcwa.org
www.whenindrought.org
Expanded Community Outreach, Civic Engagement and Government Relations Plan

Legislation, Conservation and Outreach Committee
May 22, 2014

Denise Vedder
Public Affairs Manager
Public Outreach and Conservation
Drivers of Expanded Civic Engagement, Outreach and Government Relations

- Unprecedented challenges:
  - Multi-year drought and potential to continue 2015+
  - Bay Delta, BDCP, water bond decisions
  - MWD rate litigation still years away from final decision
- Continued implementation of supply diversification strategy
- Achievement of Business Plan goals
- Clarify information on San Diego region’s water reliability investments
Key Business Plan Goals Related to Enhanced Civic Engagement

- Educate key stakeholders and the general public about the value of water.
- Conduct public outreach that achieves support for water supply diversification strategy.
- Sustain 90% or greater public acceptance of water use efficiency as an important civic duty.
- Identify, assess and make recommendations to support the Water Authority’s rate case efforts ensure the public and elected officials understand the litigation.
- Execute public outreach strategies, plans and tactics that sustain a 67% or greater awareness among residents that indirect potable reuse is a safe and acceptable supply.
Water Supply Issues Are a Top Community Concern

- Poor economy/unemployment: 22%
- Water Supply/drought: 16%
- Affordable housing: 6%
- Crime/safety: 5%
- Cost of living: 5%
- City politics: 5%
- Infrastructure: 5%
- Education: 4%
- City financial problems: 3%
- Immigration/border issues: 3%
- Other: 17%
- (Unsure): 9%

Source: 2014 Water Authority Public Opinion Poll
Public Awareness of Water Supply Reliability Efforts Can Be Improved

“People have different views and behaviors when it comes to San Diego County’s water supplies. For each statement below, please indicate if you agree or disagree. Using a five-point scale where a “1” means you strongly disagree and a “5” means you strongly agree. I have a good understanding of the ways we are trying to enhance the reliability of water supplies in our region.” (n=1,000)

Source: Water Authority 2014 Public Opinion Poll
Once Informed, Public Support for Regional Water Supply Diversification Strategy Is High

“Twenty years ago, almost all of region’s water was imported from a single supplier, ‘The Metropolitan Water District of Southern California.’ Since then, the region has diversified its water supply sources so that today a little less than half of our water is imported from that single supplier. That strategy has included water transfers from the Colorado River, increased conservation, groundwater development, water recycling, and, by 2016, seawater desalination. Do you strongly support, moderately support, moderately oppose or strongly oppose this plan to diversify our water sources? (n=1,000)

Public Awareness of MWD Rate Challenge Is Low

“Have you seen, read or heard anything about the San Diego County Water Authority lawsuit which alleges the Metropolitan Water District is overcharging the San Diego County ratepayers for their water.” (n=1,000)

- Yes, 29%
- No, 63%
- Unsure, 8%

Source: 2014 Water Authority Public Opinion Poll
# Perceived Value of Selected Household Utilities/Services

<table>
<thead>
<tr>
<th>Rank in 2012</th>
<th>Rank in 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gas &amp; Electric</td>
<td>1. Trash Collection</td>
</tr>
<tr>
<td><strong>2. Water</strong></td>
<td>2. Cell Phone</td>
</tr>
<tr>
<td>3. Cell Phone</td>
<td>3. Gas &amp; Electric</td>
</tr>
<tr>
<td>4. Telephone (land-line)</td>
<td>4. Internet</td>
</tr>
<tr>
<td>5. Internet</td>
<td>5. Telephone (land-line)</td>
</tr>
<tr>
<td>7. Cable TV</td>
<td><strong>7. Water</strong></td>
</tr>
<tr>
<td>8. Sewer</td>
<td>8. Cable TV</td>
</tr>
</tbody>
</table>

Source: 2012 and 2014 Water Authority Public Opinion Polls
Water Authority Presentations: 2012

- Helix Water District
- Vallecitos Water District
- Santa Fe Irrigation District
- San Dieguito Water District
- City of Oceanside
- San Diego Regional EDC
- Olivenhain Municipal Water District
- Otay Water District
- Carlsbad Municipal Water District
- Rincon del Diablo Municipal Water District
- City of Poway
- City of Escondido
- City of Del Mar
- Sweetwater Authority
- San Diego Regional Chamber of Commerce
- Yuima Municipal Water District
- County Board of Supervisors
- Downtown San Diego Partnership
- Ramona Municipal Water District
- City / County Managers Association
- Lakeside Water District
- Lemon Grove City Council
- City of National City
- Apartment Association Legislative Committee
- NAIOP San Diego Chapter of Commercial Real Estate Development Association
- League of Women Voters, North County Division
- San Diego and Imperial Valley Regional Forum
- League of California Cities, San Diego Division
- South Bay Irrigation District
- City of San Diego Independent Rate Oversight Committee
- Asian Business Association
- City of San Diego Natural Resources and Culture Committee
- San Diego East County Chamber of Commerce
- BIA Public Policy Committee
- Santee Chamber of Commerce
- Vista Chamber of Commerce Government Affairs Committee
- San Diego North Chamber of Commerce
- San Diego North EDC
- Lemon Grove Rotary
- 22nd District Agricultural Association
- San Marcos Chamber of Commerce
- Past Grand Jurors
Water Authority Presentations: 2012

- League of California Cities San Diego
- Rancho Bernardo Kiwanis
- Escondido Chamber of Commerce
- IROC (Bay-Delta)
- Point Loma Kiwanis
- City of Imperial Beach
- The Hispanic Chamber Board
- San Ysidro Chamber of Commerce
- AGC – Governmental Relations Committee
- City of Solana Beach
- San Diego Association of Realtors
- Fallbrook Chamber of Commerce
- San Diego North Chamber
- EGCA
- California Apartment Association Board of Directors
- La Jolla Golden Triangle Rotary
- Vista After Five Rotary
- Poway Rotary
- Western Textile Services Association
- Building Owners & Managers Assoc. (BOMA)
- National City Rotary
- San Diego North Rotary
- Carlsbad Chamber of Commerce
- Bonsall Rotary
- San Diego Old Mission Rotary
- Chula Vista Sunrise Rotary
- Rancho San Diego/Spring Valley Rotary
- Torrey Pines Rotary
- The Twelve Thirty Club
- San Marcos Rotary
- Alpine Kiwanis
- Chula Vista Chamber of Commerce
- Santa Fe Rotary Club
- Vista Rotary
- Northwest Civic Association
- Valley Center Rotary
- County Grand Jury Office
- National City Chamber of Commerce
- La Prensa
- Lakeside Chamber of Commerce
- Business Leadership Alliance (BLA)
- Old Town Chamber of Commerce
- Fallbrook Rotary
- Oceanside Chamber of Commerce
- San Diego County Apartment Association
- Santee Kiwanis
- East County EDC
Water Authority Presentations: 2013

- Padre Dam Engineering Dept.
- Bethel Memorial African Methodist Episcopal Church
- Mana de San Diego
- Padre Dam MWD
- Agua Hedionda Lagoon Foundation
- Southeast San Diego Rotary
- League of CA Cities
- Poway Kiwanis
- San Diego North Chamber of Commerce
- San Diego Regional Chamber BDCP Panel
- BOMA Government Affairs Committee
- EDC Roundtable w/Craft Beer Industry
- San Diego Downtown Breakfast Rotary
- EDC Public Policy Committee
- Albondigas
- East County EDC
- Downtown Partnership Downtown Planning Committee
- Del Cerro Action Council
- South County EDC Infrastructure Committee
- San Diego North EDC
- Equinox Center
- Imperial Beach Kiwanis
- Asian Business Assoc.
- San Diego Taxpayers Association Board
- EDC Roundtable w/Cleantech leaders
- Point Loma Nazarene University leadership
- Mission Trails Regional Park Foundation
- San Diego County Apartment Association Legislative Committee
- Latina Women’s Business Council
- San Diego Chamber of Commerce Board –Elected official update
- National Association of Women in Construction –San Diego Chapter
- California Association of Sanitation Agencies
- International Right of Way Association – San Diego Chapter
- Urban Water Institute

San Diego County Water Authority
Water Authority Presentations: 2013

- Lakeside Chamber of Commerce
- Commercial Real Estate Development Assoc. (NAIOP)
- Fallbrook Chamber of Commerce
- Building Owners & Managers Association (BOMA)
- San Diego Regional EDC
- Santee Chamber of Commerce
- BIOCOM
- San Diego County Taxpayers Association
- San Regional Chamber of Commerce
- Chula Vista Sunset Rotary
- Water Talks forum on BDCP
- National City Quarterly Breakfast
- Asian Business Association
- Vallecitos Water District
- CONNECT
- South County EDC
- Del Mar Rotary
- Equinox Center

- Albondigas
- La Mesa Lions
- El Cajon Valley Lions
- Ramona Rotary
- San Diego River Foundation
- Batiquitos Lagoon Foundation
- Rancho Bernardo Sunrise Rotary
- San Diego Coastkeeper
- PEO International
- EDC Roundtable w/Cleantech leaders
- Point Loma Nazarene University leadership
- Mission Trails Regional Park Foundation
- San Diego County Apartment Association Legislative Committee
- Latina Women’s Business Council
Water Authority Presentations: First Quarter 2014

- Agua Hedionda Lagoon Foundation
- San Diego River Foundation
- Surfrider Know Your H2O Committee
- Lemon Grove Rotary
- San Diego Rotary Club 33
- San Diego North EDC
- South County EDC public policy committee
- San Diego North Rotary
- University of San Diego leaders
- EDC Roundtable w/Advanced Manufacturing leaders
- Equinox Center (climate change update)
- San Diego Unified Disaster Council
- Fallbrook Rotary
- Oceanside Rotary
- BIOCOM Public Policy Committee
- San Diego Coastkeepers
- Charter 100
- Citizens Coordinate for Century 3
- Water for People
- Avocado Commission
- BIA
- Equinox & SD Foundation Water Policy Roundtable
- San Carlos Area Council
- CleanTech
- Southern California Water Utilities Council
- Del Mar City Council
- San Diego Taxpayers TEWI Committee
- Councilman Kersey (San Diego) Drought Workshop
- Southwest Membrane Operators
- SDG&E Green Team
- Horizon Landscapers
- CONNECT public policy committee
- San Diego Regional Chamber Water & Energy Committee
- La Jolla Golden Triangle Rotary
- EDC Roundtable w/ Tourism Industry
- Coronado Roundtable
- QED San Diego (Quandaries, Explanations, Decisions)
Water Authority Presentations: April – May 2014

- San Diego Regional Chamber Energy & Water Committee
- Food and Beverage Association Board Meeting
- San Diego EDC Policy Committee Meeting
- LEAD San Diego "Hot Topic"
- University Club
- Chula Vista Town Hall meeting
- San Diego County Apartment Association
- San Diego Regional Chamber of Commerce – Public Policy Committee
- Conservative Order for Good Government
- La Jolla Professional Men’s Society
- Remington Club
- St. James by-the-Sea Episcopal Church
- Hotel Engineers Association
- San Diego Regional Chamber of Commerce – Board of Directors
- San Ysidro Chamber of Commerce
- Vista Rotary
- Poway–Scripps Rotary Club
Water Authority Presentations: Three-Year Trend

- Number of Presentations
- Projected
Support for Water Authority’s Rate Challenge

- 22nd District Agricultural Association
- Associated General Contractors of America, San Diego Chapter
- Biocom
- CONNECT
- San Diego Regional Chamber of Commerce
- San Diego Regional Economic Development Corporation
- The Strategic Roundtable
- Downtown San Diego Partnership
- San Diego County Taxpayers Association
- League of California Cities, San Diego County Division
- San Diego County Apartment Association
- Asian Business Association
- East County Economic Development Council
- Building Owners & Managers Association
- Engineering and General Contractors Association
- Fallbrook Chamber of Commerce
- San Diego County Hispanic Chamber of Commerce
- NAIOP Commercial Real Estate Development Association
- National City Chamber of Commerce
- San Diego North Chamber of Commerce
- San Ysidro Chamber of Commerce
- Lakeside Chamber of Commerce
- Santee Chamber of Commerce
- Old Town Chamber of Commerce
- San Diego County Board of Supervisors
- City of San Diego
- City of Del Mar
- City of Escondido
- City of Imperial Beach
- City of Lemon Grove
- City of National City
- City of Oceanside
- City of Poway
- City of Solana Beach
- Carlsbad MWD
- Fallbrook PUD
- Helix Water District
- Lakeside Water District
- Olivenhain MWD
- Otay Water District
- Padre Dam MWD
- Rainbow MWD
- Ramona MWD
- San Dieguito Water District
- Santa Fe Irrigation District
- South Bay Irrigation District
- Sweetwater Authority
- Vallecitos Water District
- Valley Center MWD
- Yuima MWD
Meeting the Challenges

- Expand civic engagement
  - Broaden reach of memberships/participation
  - Expand partnerships – e.g. industry leader and elected official roundtable and events
  - Increase number of presentations/updates to business and community organizations

- Elevate engagement with key civic leaders
  - Water leaders group
  - Water Leaders Academy

- Strengthen local government relations
  - 18 cities, County, local district offices of state and federal elected officials
Meeting the Challenges (Cont.)

- Restore key positions in MWD Program and Public Outreach and Conservation Departments
  - MWD Program: Senior Water Resources Specialist
  - POC: Local Government Relations position
- Conduct additional complex policy analyses on key issues
- Use consultants to supplement staff efforts
- Dialog with Southern California leaders
- Conduct additional research
Recommendation:

- Authorize Expanded Community Outreach, Civic Engagement and Government Relations Plan
  - Action authorizes General Manager to reallocate resources and transfer operating funds to MWD Program and Public Outreach and Conservation budgets to support achievement of the agency’s strategic business plan objectives through enhanced civic engagement and outreach.
Potable Reuse

May 22, 2014
Water Planning Committee

Presented by: Ken Weinberg, Director of Water Resources
& Toby Roy, Water Resources Manager
Agenda

• Background on Potable Reuse
• Potable Reuse in San Diego County
  • Water Authority Activities in support of Potable Reuse
  • Member Agency Potable Reuse Planned Projects
• Presentation by City of San Diego on Pure Water San Diego Program
  • Request to approve Resolution in support of Pure Water San Diego Program
Non-Potable Reuse

- Reliant on seasonal irrigation use due to lack of:
  - Year round industrial demand
  - Opportunities for groundwater recharge
- Limits utilization of recycled water treatment capacity
- Requires intensive investment in “purple” pipe
Current Perspectives on Potable Reuse

Public Health Protection

Multi-Barrier Water Purification Steps

- Recycled Water
- Membrane Filtration
- Reverse Osmosis
- UV / Advanced Oxidation
- Detention Time in Reservoir
- Treatment at Drinking Water Plant
- Drinking Water Supply

Water Purification Process
Incidental Reuse

- Water sources protected through CWA-discharge requirements
  - Secondary or Tertiary treatment required

- Water Supplies regulated under SDWA-Surface Water Treatment Rule
  - High level of treatment through filtration plants
  - Increased pathogen removal requirements for impaired sources

Total Wastewater Discharge
- South of Las Vegas into Colorado River
  - 336 Million Gallons/Day

Total Wastewater Discharge of major cities in / around Bay Delta
- 390 Million Gallons/Day
  + Additional discharge upstream
  - 600 MGD/Day

= Nearly 1 Billion Gallons/Day
Six Decades of Planned Potable Reuse in Southern California

1962
Montebello Forebay

1977
Water Factory 21

1980
City of San Diego Aquaculture Mission Valley Plant

1987
Aquaculture Plant moves to San Pasqual; adds reverse osmosis for potable uses

1992

6 year drought

6 year drought
**Potable Reuse Begins**

- **1993:** Water Authority & City of San Diego presented conceptual study on indirect potable reuse to state health department
  - Advanced water treatment at North City Water Reclamation Plant
  - Blended with imported water in San Vicente Reservoir
  - Subsequent treatment at conventional drinking water treatment plant
  - Relied on treatment technology and environmental buffer
• **1994** Water Authority led full scale feasibility study and regulatory discussions
  - City of SD conducted health effects and monitoring studies

• **1996** letter from CDPH to Water Authority granting conceptual approval
  - Indirect potable reuse via surface water reservoir
Stakeholder Involvement

REPURIFLED WATER REVIEW COMMITTEE
FINAL REPORT TO THE
SAN DIEGO COUNTY WATER AUTHORITY STAFF

This report makes recommendations regarding the suitability of repurified water for San Diego County

November 17, 1994
repurified water review committee
1994 RWRC

Repurified Water Review Committee
List of Individuals (and their respective organizations)
Adopting the Report
(Signature Page)

Steve Beck
San Diego Council of Bass Fishing Clubs

Lisa Clements
Industrial Environmental Association
Water Committee

Robin Davis
San Diego Restaurant Association

Steve Erickson
San Vicente Reservoir
Recreational Interests/User

Mona Favorite-Hill
San Diego County Black Chamber of Commerce

John Fowler
Greater San Diego Chamber of Commerce
Government Affairs Steering Committee

Steve Frates
San Diego Taxpayers Association

Wendall Gayman
Sierra Club
Water Reclamation Committee Chair

Dr. Frances Goldin
UCSD School of Medicine

Robert Hanson
Kelco

Elmer "Burr" Keen
Citizens Coordinator for Century 3

Thomas Miller
Special Assistant to San Diego City Councilmember George Stevens on Senior Issues

Ted Roth
Biomedical Industries Council

Dennis Russell
Metropolitan Wastewater Department Oversight Committee

Denise Sanchez
Parent Teachers Association

Mr. Chet Young
Asian Business Association
“Toasting the Millennium”

- Water Authority Co-sponsored National Research Council Report
- Facilities planning and environmental review initiated by City of San Diego, but project halted
  - “planned, indirect potable reuse is a viable application of reclaimed water”
Water Authority Activities in Support of Potable Reuse

- Legislation sponsored or supported by the Water Authority
  - SB 918 in 2010
  - SB 322 in 2013
- Directed Department of Public Health to form an expert panel on DPR

“This information is past due...I am directing the Water Board to ensure that this work is completed expeditiously...California needs more high quality water, and recycling is the key to getting there.”

Edmund G. Brown, Jr.
Member Agency Projects

- City of San Diego IPR
- North City WRP to SVR
Member Agency Projects (cont.)

Other Agencies
• Olivenhain MWD
• Santa Fe ID
• San Dieguito WD
• San Elijo JPA
• Fallbrook PUD
• Vallecitos WD
• Ramona MWD
WateReuse Research Foundation-DPR Initiative

- Approximately $6 million in funding raised
  - $100,000 North County Agencies
  - $50,000 City of San Diego
  - $125,000 Water Authority (via $500K MWD Grant)
  - Additional $2.1 million San Diego IRWM Grant

- Research:
  - Supports regulatory development
  - Documents capability of technology
  - Supports public information and outreach
Future Water Authority Activities in Support of Potable Reuse

- Develop regional outreach strategies
- Share information and coordinate on regulatory issues
- Share information with the state expert panel
  - Informed evaluation of future regulatory requirements
Your Public Utilities Department...

• Delivers high quality drinking water, collects and treats wastewater, produces delivers recycled water, and generates green energy—everyday
• Maintains and operates extensive infrastructure
• Keep rate-payer affordability top of mind
85% of San Diego’s water is imported
Water Supply Challenges

- Limited local supplies
- Imported water at risk as competition for the resource rises
- Recurring drought
- Population growth
- Regulatory constraints
- Natural disasters/climate change

Gov. proclaims drought emergency

California Has Driest Year Ever -- And It May Get Worse
Actual Imported Water Costs

Cost/Acre-Foot

Imported Water Supply Cost


$0 $200 $400 $600 $800 $1,000 $1,200
What Options Does San Diego Have?

Regional:
- Importing Water
- Water Conservation
- Desalination (SDCWA)

City of San Diego:
- Water Conservation
- Groundwater Development
- Recycled Water
- Indirect Potable Reuse (Pure Water)
Pure Water: Our Opportunity

• A 20-year program to provide a safe, secure, and sustainable local water supply
• Provides over 1/3 of the City’s water (83-mgd)
• A cost effective, integrated water and wastewater solution
Wastewater Treatment System

- Significant Regional Asset:
  - 2.5 million served
  - 12 Participating Agencies
  - 4 Wastewater Facilities
- Point Loma is the main treatment facility
  - Operates with a 5-year modified permit
  - Renewal application due to EPA in January 2015
Pure Water Supports Permit Renewal

• Commitment to Pure Water would divert flow from Pt. Loma
• Reduces treated water flow to the ocean
• Supports legislative changes to the Clean Water Act to allow for “secondary equivalency”
Secondary Equivalency

• Secondary treatment achieves certain levels of water quality in the flow to the ocean

• We can achieve the same outcome and avoid expensive upgrades by reducing flow to the plant

• In the process we create Pure Water, while protecting ocean water quality
Pure Water Facilities Plan

• Initial Phase
  – 15 mgd by 2023

• Future Phase
  – 83 mgd by 2035
  – Over 1/3 of San Diego’s Water Supply
San Diego at a Fork in the Road

**Pure Water**
- Local Water Control
- Most Economical
- Creates sustainable new water supply

**Secondary Treatment**
- Imported Water Dependent
- Vulnerable to Rising Costs
- Continued Ocean Discharge

*Choice*
Pure Water Is The Right Choice

Secondary + Imported Water

Pure Water + Imported Water

<table>
<thead>
<tr>
<th>Year</th>
<th>Pure Water</th>
<th>Secondary</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$500</td>
<td>$600</td>
</tr>
<tr>
<td>2020</td>
<td>$700</td>
<td>$800</td>
</tr>
<tr>
<td>2025</td>
<td>$900</td>
<td>$1,000</td>
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<td>2030</td>
<td>$1,100</td>
<td>$1,200</td>
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<tr>
<td>2035</td>
<td>$1,300</td>
<td>$1,400</td>
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<td>2040</td>
<td>$1,500</td>
<td>$1,600</td>
</tr>
<tr>
<td>2045</td>
<td>$1,700</td>
<td>$1,800</td>
</tr>
<tr>
<td>2050</td>
<td>$1,900</td>
<td>$2,000</td>
</tr>
</tbody>
</table>
Who Supports Pure Water?

• Elected Officials
  – City Council Resolution, April 29, 2014
• Environmental Groups
• Business Community
• Wastewater Participating Agencies
• Water Reliability Coalition
• Engineering Professional Community
• Independent Rates Oversight Committee
Pure Water Program Next Steps

- Stakeholder and Customer Outreach
  - Underway and continuous
- Solicitation for Engineering and Technical Support Services
  - May 2014
- Finalize Facilities Plan and Cost Estimate/Rate Impact
  - September 2014
- Point Loma Permit Application
  - January 2015
- Secondary Equivalency Legislation
  - Enacted Law, December 2015
Staff Recommendation

Approve Resolution No. 2014-____ supporting the “Pure Water San Diego” program sponsored by the city of San Diego
Resolution Establishing Preliminary Informal Terms and Conditions for the Rainbow Municipal Water District’s Proposed Campus Park West Annexation

Water Planning Committee
May 22, 2014

Presentation by: Dana Friehauf, Acting Water Resources Manager
Proposed
Rainbow MWD’s
Campus Park
West Annexation

Existing Land-Uses
Proposed Rainbow MWD’s Campus Park West Annexation

Planned Land-Uses

Estimated Demands of Annexing territory: 270 acre-feet per year
Board Adopted Annexation Policies and Procedures

- Set of 13 polices used to evaluate proposed annexations
- Policies not yet satisfied form the basis for conditions included in the resolution
- Procedures for implementing Annexation Policy 2: *Protection of Member Agency Supply Reliability*
  - Identify conditions to be imposed based on the supply situation
Procedures for Implementing Policy #2

Step 1: Determine if Annexation Applications should be Accepted and Processed

Is Region at Level 3 or 4 of Model Ordinance?

Yes

- Suspend Accepting and Processing of Annexations

No, Currently at Level 1

- Accept and Process Annexations
Procedures for Implementing Policy #2

Step 2: Determine if Annexation will have Adverse Effect on Reliability (Long-term)

Annexation Demands Included in UWMP?

Yes

No

No Adverse Effect

Yes

No, Campus Park West Annexation 270 AF/YR demands not included

Actual Regional Demands lower than UWMP Forecasted Demands

No Adverse Effect
Procedures for Implementing Policy #2

Step 2: Determine if Annexation will have Adverse Effect on Reliability (Short-term)

Has the WSDRP Been Activated?

- Yes, Stage 1
  - Condition Annexation: Rainbow MWD Allocation Base Year will not be increased due to annexation
  - No Adverse Effect
- No
  - No Adverse Effect
Staff recommendation:

Adopt resolution No. 2014-___, establishing preliminary informal terms and conditions for the Rainbow Municipal Water District’s proposed Campus Park West Annexation, and requesting that Metropolitan Water District of Southern California grant conditional approval and give notice of intent to impose water standby charges
IRWM Planning for San Dieguito Watershed and Hodges Reservoir

Water Planning Committee – May 22, 2014
Presented by Toby Roy, Water Resources Manager
Watershed

Urbanization of Watershed

Urban/AG Runoff

Increased Nutrient and Turbidity Loadings

Reduced Habitat Buffer

Olivenhain Reservoir

Lake Hodges
Reservoir Stratification

Epilimnion

Thermocline

Hypolimnion
Hodges Reservoir Cycle

Heavy Nutrient Loads – First Flush and Urban Runoff

Algae Blooms

Fish Kills

Turn Over
Water Quality to Impacts to Beneficial Uses

- High Manganese/Sulfur
- High TOC/DOC
- Low Oxygen Levels
- Methyl Mercury
- Severe Algae Blooms

- Water Supply
  - Treatment Costs
  - Moving Water
- Recreation
- Habitat
IRWM Solutions To Improve Lake Hodges Water Quality

**Prop 50**
San Dieguito River Valley Conservancy
- Watershed based solutions
- Natural treatment system

**Proposition 84**
Water Authority & City of San Diego
- Quagga control methodologies
- Focused In-lake water quality solution
  - Mechanical
  - Natural

**Prop 84**
Data Management
- Opportunities for data sharing
- Case study
LAKE HODGES NATURAL TREATMENT SYSTEM PROJECT

LAND USE COMPARISON (HISTORICAL vs. CURRENT)

Historical Land Use 1970-1980
- Undeveloped: 74%
- Agriculture: 19%
- Urban: 7%

Current Land Use 2008 SANGIS
- Undeveloped: 62%
- Agriculture: 15%
- Urban: 23%

Source: Dudek Prop 50 Presentation
Nutrient Loading Must Be Reduced

LAKE HODGES NATURAL TREATMENT SYSTEM PROJECT

STORM WATER MANAGEMENT MODEL (SWMM)

Table 1. Nutrient Loading during 2010-2011 Water Year

<table>
<thead>
<tr>
<th>Tributary</th>
<th>Total Discharge (acre-feet)</th>
<th>Nutrient Loading</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Ysabel Creek</td>
<td>20,060</td>
<td>60,210</td>
<td>18,330</td>
<td></td>
</tr>
<tr>
<td>Urban Watersheds (Green Valley, Kit Carson, and Felicita)</td>
<td>7,100</td>
<td>16,390</td>
<td>3,530</td>
<td></td>
</tr>
</tbody>
</table>
Prop. 50

NTS Study Recommendations (Dudek)

Legend
- Stream
- NTS Option A
- NTS Option B
- NTS Options A & B
Prop. 84 Alternatives
Prop. 84
Prop. 84
## Preliminary Cost Estimate

<table>
<thead>
<tr>
<th>ID</th>
<th>Alternative</th>
<th>Cost ($ Millions)</th>
<th>Comment</th>
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<tbody>
<tr>
<td>1</td>
<td>Reservoir Hypolimnetic Oxygenation System</td>
<td>2.7</td>
<td>3-tpd system</td>
</tr>
<tr>
<td>2</td>
<td>Mid-Lake Vigorous Epilimnetic Mixing</td>
<td>1.1</td>
<td>Demonstration system</td>
</tr>
<tr>
<td>3</td>
<td>Upper Wetlands Filtering</td>
<td>7.5</td>
<td>25-acre system</td>
</tr>
</tbody>
</table>
Regional Board Oversight of Watershed

- General Permit for Agriculture
  - Best Management Practices
  - Monitoring

- MS4 (Storm water Permit)-Water Quality Improvement Plan
  - Highest Priorities, Strategies
    - Proposed bacteria at the coast
  - Alternative Compliance
Conclusions

• Water quality can be improved
• Cost effective solutions are available
• Collaboration is required
• Grant and other funding can help
Manual and electronic readings recorded statewide snowpack’s water content at a mere 18% of average.
Average Water Year Statewide Runoff

Percent of Average (Water Year: Oct 1 – Sept 30)

*May 1, 2014 forecasted water year runoff
# MWD 2014 Water Supply and Demand Balance

<table>
<thead>
<tr>
<th>Water Balance</th>
<th>Acre-Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Supplies</strong></td>
<td>858,000</td>
</tr>
<tr>
<td>- <em>Colorado River</em></td>
<td>755,000</td>
</tr>
<tr>
<td>- <em>State Water Project</em></td>
<td>103,000</td>
</tr>
<tr>
<td><strong>Estimated Member Agency Demands</strong></td>
<td>1,922,000</td>
</tr>
<tr>
<td><strong>New Water Balance</strong></td>
<td>-1,064,000</td>
</tr>
</tbody>
</table>

- Excludes Water Authority Colorado River Transfers
- Negative balance made up through storage and other supplies
- Actual balance may change as year progresses

Source: MWD May 12, 2014 Water Surplus and Drought Management Plan Report
Due to reduced storage reserves, MWD may need to implement its Water Supply Allocation Plan in 2015 if conditions continue to be dry.

Source: MWD May 12, 2014 Water Planning and Stewardship Committee
Fiscal Year Potable Water Use in Water Authority Service Area

July – April of FY 2014 is 3% more than in FY 2013

Warmer Nov – Apr in FY 2014
Average Daily Maximum Temperature at Lindbergh Field - Departure from Normal (°F)

**Ave Daily Max Temp:**
FY 2014: January – April was 4.2°F warmer than normal
“Chance of El Niño increases during the remainder of the year, exceeding 65% by summer.” May 12, 2014
Climate Prediction Center