Aqueduct Operating Plan (Information)

Engineering & Operations Committee
June 27, 2013
Aqueduct Operating Plan (AOP)

- Improve communication
- Coordinate operations
- Maximize regional resources
- Monthly Operating Heads meeting
Aqueduct Operating Plan

1. Water Supply (Treated and Untreated)
   Untreated Water Distribution Priorities
2. Aqueduct Shutdowns
3. Member Agency Shutdowns
4. Energy Production/Consumption
5. Reservoir Operation/Coordination
6. Asset Management Activities
Treated Water: Projected Demand vs Deliveries for Fiscal Year (FY) 2013

Average Monthly Flow (cfs)

FY2013 Deliveries
FY 2013 AOP Projections
Historical High Demand (FY2004)
Untreated Water: Projected Demand vs Deliveries for FY2013
Treated Water Delivery (FY2014)

Historical High Demand (FY2004) AF per Month (2004)

Average Monthly Flow (cfs)

Percent Treated Water System Capacity

Historical High Demand (FY2004) AF per Month (2004)
Untreated Water Delivery (FY2014)

Historical High Demand (FY2004) AF per Month (2004)

Average Monthly Flows (cfs)

Percent Untreated Water System Capacity

Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

0 20 40 60 80 100

78 156 234 312 390 468 546 624 702 780
Untreated Distribution Priorities

June 1, 2013 - October 31, 2013
Summer Untreated Water Delivery Priority
1) Member Agency Treatment Plants
2) Water Authority Treatment Plants
3) Storage

July 13  Aug-13  Sep-13  Oct-13  Nov 13  Dec-13  Jan-14  Feb-14  Mar-14  Apr-14  May-14

June 1, 2013

Winter Untreated Water Delivery Priority
1) Member Agency Treatment Plants
2) Storage
3) Water Authority Treatment Plants
   November 1, 2013 - May 31, 2014

May 31, 2014
Aqueduct Shutdowns and Outages

**Dec 16, 2013 – Jan 5, 2015: Treated**
1. Pipeline 4 condition assessment from Twin Oaks to Paint Mountain
2. Pipeline 3 bulkhead installation at Twin Oaks
3. Pipeline 3 valve vault construction at Twin Oaks

**Oct 6 – Oct 26, 2013: Treated**
1. Pipeline 4 condition assessment from Twin Oaks to Paint Mountain

**Feb 6 – Mar 7, 2014: Untreated**
4. Pipeline 3 condition assessment from MWD to Twin Oaks
5. Pipeline 3 pipe replacement at SR-76 (possible one year delay)

**Jun 22 – Jun 28, 2014: Untreated**
6. Pipeline 3 bulkhead removal at Sweetwater

**Mar 16 – Mar 25, 2014: Untreated**
1. Lake Hodges Hydroelectric Facility warranty inspection

**Mar 18 – Mar 28, 2014: Treated**
4. Pipeline 3 and 4 San Marcos Vent Modifications
5. Twin Oaks Valley WTP Treated Water FCF modifications
6. Pipeline 4 bulkhead installations near SR-76 (possible one year delay)

**Apr 17 – Apr 23, 2014: Treated**
7. Pipeline 4 bulkhead removals near SR-76 (possible one year delay)

Untreated P3 flows will terminate at NCSB 3: Nov 2013 – Jun 2014

Treated P3 flows will be terminated between the Diversion Structure and San Marcos Vent: Dec 2013 – Feb 2015 (386 days)

* Green = untreated shutdown, Blue = treated shutdown, Orange = outage
Member Agency Shutdowns

11/1/2013 - 5/31/2014
Red Mountain Reservoir
(Fallbrook)

Perdue WTP Offline
(Sweetwater)

Aug-13  Sep-13  Oct-13  Nov-13  Dec-13  Jan-14  Feb-14  Mar-14  Apr-14  May-14  Jun-14

7 MG Reservoir adjacent to OTAY10 out of service
(Otay)
1/2014 - 6/2014

Jul 1, 2013
Jun 30, 2014
Energy Production

- FY2013
  - Rancho Peñasquitos
    - Actual (11 Months): $772,643
  - Lake Hodges Pump Storage
    - Actual (11 months): $1,614,464
FY 14&15 Projected Energy Production

- **Rancho Peñasquitos**
  - FY 14&15 Budgeted Revenue: $1,800,000

- **Lake Hodges Pump Storage**
  - FY 14&15 Budgeted Revenue: $3,640,000
    (based on availability charges)

- **Total FY14&15 Hydroelectricity Generation**: $5,440,000
Reservoirs and Regional Storage

- Regional Usable Capacity
  - 516,591 Acre Feet (AF)

- May 1 Inventory
  - 248,180 AF (48%)
Asset Management Activities

Last year included:

- Spool replacement (36 structures): Pipelines 1/2
- Abandoned: San Diego 3 Flow Control Facility (FCF)
- Demolished: Vallecitos 6 FCF
- Control valve/meter replacement: Fallbrook 4, Ramona 1 FCFs
- 60-inch valve replacement: Olivenhain Dam

Next Year:

- Demolish: Padre Dam 3, Otay 3, Otay 9 FCFs
- Valve Replacement: Pipeline 4/Valley Center Pipeline
Aqueduct Operating Plan – Future

- Operating Heads (monthly)
- FY2015 AOP Schedule
  - Shutdown schedule to Operating Heads/MWD – Jan 2014
  - General Managers – June 2014
  - Board – June 2014
Update of the Carlsbad Desalination Project

Engineering and Operations Committee
June 27, 2013

Frank Belock
Board Meeting of June 27, 2013
Carlsbad Desalination Project Items

Engineering & Operations

1-A  Project Update
1-B  Plant Compliance Services
1-C  San Marcos Vent Design-Build Selection
1-D  Environmental Construction Monitoring – P3 Relining and San Marcos Vent

Board
P3 Property Acquisition/Eminent Domain
Public Hearing
Desal Conveyance Pipeline
10-miles of new 54-inch pipe

TOVWTP Improvements
Pipeline 3 Relining (27,100 feet)

Desalination Plant
Preparing for tunnel work

Current trench work
Complete
Current tunnel work
Aqueduct Connection Facilities
Las Flores Drive – San Marcos
Poinsettia Avenue - Vista
Post construction on 9th Street – San Marcos prior to Restorations
Prefabrication of Concrete Forms
72" Seawater Feedline
Permeate Storage Tank
Filter Clearwell
Looking South (April)
Looking South (June)
Focus Areas

- Public Outreach
  - 9th Avenue, Las Flores Avenue
  - Carlsbad
- Pipe Production
- Macario Canyon
  - Bridge or Tunnel
- Desalination Plant – Subsurface Structures
- Twin Oaks Modifications – Contract Issued to Shea Construction
Pipeline 3
Property Acquisition (Board Item)
Resolution of Necessity

- Pipeline 3
- 14 affected portals, 17 owners
- 13 owners signed
- 4 owners not signed
  - 1 out of the country
  - 1 negotiating, likely will sign
  - 2 negotiating, likely will not sign
- Property owners notified of Hearing – have right to speak
Resolution of Necessity

- Board Meeting – Public Hearing to consider adoption of Resolution of Necessity

- Purpose of the hearing is not to address or negotiate valve

- Board considers the necessity of the property for the project

- Four Findings
  - Public interest and necessity require the project
  - Project is planned compatible with public good and least private injury
  - The property is necessary for project
  - Water Authority has complied with the Government Code as applicable.
Condemnation Schedule (if necessary)

- June 27: Adopt Resolution of Necessity
- July 10: File Lawsuits & Funds Deposited
- July 22: Complete Service to Owners
- Aug 22: Right to Challenge Expires
- Oct 22: Possession Granted
Today’s Action Items
1-B Desalination Plant Design and Construction Performance and Compliance Monitoring Services

- Water Authority contractual responsibilities under Carlsbad WPA
  - Desalination plant design review and construction monitoring
    - Ensure conformance to WPA contract standards
  - Review and approval of certain plant site equipment
    - Plant flow meter
    - Fiber optic information system
  - Review and approval of key construction/performance milestones
    - Mechanical completion
    - Completion of Performance Test
- SAIC currently providing interim support from prior contract
  - Board-approved contract amendment in November 2012
Desalination Plant Design and Construction
Performance and Compliance Monitoring
Services

- RFP for professional engineering services to support Water Authority contractual responsibilities under Carlsbad WPA issued on March 18, 2013.
  - 15 firms attended the pre-proposal meeting
  - Only SAIC submitted a proposal
    - Thorough understanding of WPA terms
    - Prior experience on Carlsbad and advising Tampa Bay Water
    - SAIC fee proposal in-line with previous professional services provided
  - Recommend not-to-exceed contract for $725,000 for 2 ½ years.
1-C San Marcos Vent Modifications
Design-Build Selection

- **Project Scope:**
  - Maintain treated water delivery in Pipeline 3 south of San Marcos

- **Construction Components:**
  - Build Pipeline 4 weir structure
  - Build Pipeline 3 / Pipeline 4 pipe interconnect

- **Selection Criteria:**
  - Approach to the work
  - Technical experience and qualifications
  - Quality assurance processes for design-build work
  - Past performance and reference checks to verify their ability to meet the project schedule
  - Contract price
Teams Submitting Proposals (Contractor/Designer)

- TC Construction Co. / RBF Consulting
- L.H. Woods & Sons, Inc. / Infrastructure Engineering Corp. (IEC)
- J.F. Shea Construction, Inc. / Tetra Tech
1-D Environmental Construction Monitoring

- Covers two projects
  - Pipeline 4 Vent Modifications
  - Pipeline 3 Reline: San Marcos to Twin Oaks

- Required measures listed in Carlsbad FEIR and First Addendum Mitigation Monitoring Reporting Program and various permits

- Second Addendum to FEIR adopted by Board on November 29, 2012
Environmental Construction Monitoring

- Competitive RFP process
  - Advertised on “The NetWork” online database
  - 20 firms attended pre-proposal meeting
  - 9 proposals received
  - 4 finalists interviewed

- Dudek selected as best qualified for a 2-year contract not-to-exceed $365,000
Recommendation

1-B Authorize the award of a contract in the amount of $725,000 to SAIC to provide performance and compliance monitoring for the Carlsbad Desalination Water Purchase Agreement for two and one-half years.

1-C Authorize the award of a design-build contract to TC Construction in the amount of $1,714,000 for the San Marcos Vent Modifications project.

1-D Authorize a contract in the amount of $365,000 to Dudek to provide environmental monitoring services for a 2 year period.
San Vicente Dam Raise
Construction Update

Engineering & Operations Committee Meeting
June 27, 2013
Low Level Outlet Gate Structure
Low Level Outlet Gate Structure
Outlet Tower
Crest Control Building
Outlet Works

- Emergency Discharge
- Water Authority 90-inch Diameter Pipe
- City 66-inch Diameter Pipe
- Lower Level Outlet 108-inch Diameter Pipe
Schedule Update

Contractor’s Baseline Schedule

(Construction Contract Duration) 6 Months

Complete Outlet Works

Start-up Testing

Decommission Exist OW

May Begin Reservoir Fill

DECEMBER 2013 FINISH

RESERVOIR FILL TO EL.640
FALL 2014 - 2017

CONTRACTORS BASELINE SCHEDULE
Outlet Works Delay
Upcoming Activities

- Award Package 5 Marina Construction - Summer of 2013
- Award Package 4 Bypass Pipeline Construction - Summer of 2014
- Complete Filling to Height of Existing Dam (2014-2017)
- Obtain Division of Safety of Dams Certification
- Complete Package 4 Bypass Pipeline Construction - Winter of 2015
- May Begin Filling to Full Height of Raised Dam
Upcoming Activities

- Award Package 5 Marina Construction - Summer of 2013
- Award Package 4 Bypass Pipeline Construction - Summer of 2014
- Complete Filling to Height of Existing Dam (2014-2017)
- **Obtain Division of Safety of Dams Certification**
- Complete Package 4 Bypass Pipeline Construction – Winter of 2015
- May Begin Filling to Full Height of Raised Dam
Core Testing
Water Resources Development Act

- WRDA was last authorized in 2007
- WRDA is vehicle used to authorize Army Corps programs and policies
  - Maritime navigation
  - Water resource management of Army Corps-operated facilities
  - Flood Control
  - Environmental protection and mitigation of impacts on waters subject to the CWA
Water Resources Development Act

- Army Corps manages water supply facilities and serves as primary regulator of aquatic ecosystems
  - Vests Army Corps with direct role in Water Authority’s efforts to expand water resources while reducing degradation of existing supplies
  - Army Corps currently authorized to assist in planning and construction of water treatment facilities that further these goals
- WRDA 2013 offers opportunity to clarify that this authority extends to desalination
WRDA 2013

- **S. 601 (Boxer) Water Resources Development Act of 2013**
  - Passed in Senate May 15 by a vote of 83–14
  - Includes new five-year, $100 million/year WIFIA pilot program
  - Would task EPA with funding desalination projects
  - Would require Army Corps to notify Congress of authorized but unfunded projects

- **Companion legislation in the House not yet introduced**
  - Unclear if House bill will include a WIFIA component
  - Likely will address issue of EPA’s authority to overturn existing Section 404 CWA permits
Recommended Policy Principles

1. Encourage and extend funding eligibility for the development of seawater and brackish water desalination facilities, including fresh water distribution networks originating from these facilities.

2. Clarify that Army Corps’ authority to participate in the planning and construction of water treatment facilities extends to those utilizing desalination technology and the distribution of treated water from these facilities.
Recommended Policy Principles

3. Direct the Army Corps to work with other branches of the U.S. military in the planning and construction of mission-sustaining water facilities where water resources are constrained due to population or environmental factors outside the base (collaboration should include the uniformed managers of military bases and public/private entities working to secure reliable water resources for our military services)

4. Funding to the Army Corps for developing military base water resources shall include the authority to support planning, construction, and maintenance of desalination facilities
5. Encourage efforts to complement existing funding with innovative financing options for planning, construction, operation, and mitigation of water infrastructure facilities. Eligibility for funding should include desalination projects. However, this eligibility for innovative financing should not come at the exclusion from other Army Corps assistance. Furthermore, tax-exempt borrowing authority by local sponsors for projects should not be excluded as a financing option.
Recommended Policy Principles

6. Ensure that the project deauthorization process includes local sponsors in any decision and allow for modification of project authorizations as an alternative to deauthorization. Projects should not be deauthorized solely through Army Corps or other Executive Branch actions; congressional and local sponsor input must be preserved.

7. Clarify that Section 404 permits issued by the Army Corps may not be revoked by the EPA at a future date if the terms of permit have not been violated.
8. Support member agencies’ efforts to secure Title XVI appropriations, WRDA authorizations and other federal funding for recycling
Staff recommendation

- Adopt policy principles for Water Resources Development Act (WRDA) legislation
All American and Coachella Canal Lining Projects Environmental Mitigation Status Update

Imported Water Committee
June 27, 2013
Background

- Water Authority lined 35 miles of the Coachella Canal and 23 miles of All American Canal
- Both projects produce approximately 80,000 AF for the Water Authority every year
- Conserving the water that used to seep from the original unlined canals impacted the surrounding environment
- Project environmental documents require mitigating these impacts
Environmental Mitigation Projects

- Dos Palmas Projects
  - Water Supply System
  - Mature Tree Planting
  - 17-Acre Created Marsh
  - Desert Riparian Restoration
  - 105-Acre Core Marsh/Aquatic Habitat
  - Desert Pupfish Habitat
- Chanan Remington Memorial Wetland
- Dune Restoration
- Large Mammal Monitoring and drinkers
- Sport Fishery Pond
Percolation Ponds
Mature Trees

Mesquite

Palo Verde
17–Acre Created Marsh
Desert Riparian Restoration
105–Acre Core Marsh
Desert Pupfish Habitat
Chanan Remingtion Memorial Wetland Enhancement
Dune Restoration
Large Mammal Monitoring and Drinkers
Sport Fishery Pond
Lining of All American and Coachella canals reduced sport fishery habitat

Requirement to construct sport fishery pond to mitigate for the impact

California Fish and Wildlife will manage the pond
Project Construction

- Project main components:
  - Approximately 50-acre pond
  - 5-acre sediment forebay
  - Approximately 1,400 LF of pipe for supply water

- Anticipated to begin construction late 2013

- Estimated construction cost is approximately $3.8 mill
Purpose for Agreements

Two agreements required:

1. O&M agreement for perpetual pond management and maintenance
2. Water supply agreement to supply water to the pond
O&M Agreement

- Water Authority pays for a one-time endowment of $668,019

- National Fish and Wildlife Federation will hold funds in trust for operating and maintaining the pond

- Once construction is complete, Water Authority would have no further obligations for funding pond costs
Water Authority pays for a one-time endowment of $459,690

National Fish and Wildlife Federation will hold funds in trust to purchase water for operating the pond

Fish pond requires up to 500 af/yr

Water Authority would have no further responsibility for supplying water to pond
1. Authorize General Manager to execute MOA with DFW for a one-time endowment of $668,019 to operate and maintain pond
2. Authorize General Manager to execute MOA with DFW for a one-time endowment of $459,690 to pay for pond water supply

- Total cost of endowments: $1,127,709
Financial Review of Metropolitan Water District’s Mid-Term Biennial Budget

Imported Water Committee
June 27, 2013
Overview

- Financial Outlook when MWD adopted Biennial Budget for FYs 2012/13 and 2013/14
- MWD’s Current Financial Outlook
- MWD’s Updated five-year financial forecast
  - FYs 2012/13-2016/17
- June MWD Board Actions
MWD’s Adopted Biennial Budget: FYs 2012/13 and 2013/14

Adopted in April 2012

- Before adopting the rates, MWD had increased rates by nearly 90% since 2004, while sales declined by more than 35%
- Under-collected revenues in 3 of 5 years
- Staff proposed 7.5% and 5% average rate increases for Calendar Years 2013 and 2014, respectively
  - Water Authority advocated for no more than 3%/3% average rate increases
- 5%/5% average rate increases adopted

Key Budget Assumptions

- Water sales and exchanges of 1.7 MAF to better reflect trend
- Average rate increases of 3%-5% for FYs 2014/15-2016/17
- Reserves to remain at minimal levels through FY 2016/17
### Financial Indicators Presented in 4/2012

#### Fiscal Year Ending

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<th>14%</th>
<th>20%</th>
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*Includes Water Stewardship Fund and SDCWA litigation amount FY2013 and beyond are based on modified accrual*
MWD’s Updated Financial Outlook

- **FY 2011/12**
  - In April 2012, projected a draw from reserves to meet expenses
  - Ended year on June 30, 2012 by adding $97 million to reserves

- **FY 2012/13 Projections**
  - Sales tracking at 1.86 maf
  - Projected to over-collect revenues
  - Expenditures tracking under budget
  - Reported in April 2013: adding $178 million to reserves
    - $36 million over board-established maximum level
  - Updated in May 2013: adding $210-220 million to reserve
    - $50-70 million over board-established maximum level
  - Updated in June 2013: adding $217 million to reserves
    - $75 million over board-established maximum level
  - Projected to end FY 2013 with reserves balance of $549 million
Updated Financial Indicators

Current Forecast

Reserves* | Maximum Reserve | Minimum Reserve
---|---|---

Million Dollars


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* Includes Water Stewardship Fund
FY2013 and beyond are based on modified accrual
Water Authority Delegates Position

- Refund surplus to member agencies
- MWD board to reconsider adopted rates and charges for CY 2014
  - Minimize over-collection of funds
  - Ensure rates meet cost of service
- Reconcile revenue collection and expenditures by rate categories
  - Avoid cross-subsidies of rates
- Return to annual rate-setting
- Restart Long Range Finance Plan process
  - Form Fiscal Sustainability Task Force
June MWD Board

Board Actions

- Public hearing to consider suspending tax rate limitation
- Disbursement of over-collection

Public hearing/comments

- Over 20 speakers provided comments
- Letters were submitted
June MWD Board Actions

- Kept the over-collection and split $75 million in excess reserves to fund unbudgeted expenses:
  - OPEB trust
  - PAYGo Fund
  - Water Transfer Fund

- Suspended Ad Valorem tax rate limitation for Fiscal Year 2014
  - Additional revenues of approximately $4.4 million
  - Declared these revenues as “essential” for MWD’s “fiscal integrity”

- Did not modify adopted CY 2014 rates and charges
A & N Technical Services, Inc
Dr. Tom Chesnutt, President

A&F Committee
Tracy McCraner, Finance Director/Treasurer
June 27, 2013
Agenda

➢ Tom Chesnutt Biography & Experience
➢ Project Objectives & Tasks
➢ Budget & Schedule
➢ Staff Recommendation
Dr. Tom Chesnutt

- Firm: A&N Technical Services
- Position: President
- Background:
  - Educational – Ph.D and Masters
    - Ph.D. & Masters of Philosophy Policy Analysis RAND
    - M.S. Technology & Science Policy Georgia Institute
    - B.A. Economics Kenyon College
Dr. Tom Chesnutt (cont.)

- Industry Experience:

- Water Authority Specific Experience:
  - 2000 rate and charge cost of service study
  - CY 2003 rate and charge “unbundling”
  - Financial Rate Modeling and Forecasting
    - 2004 Regional Water Facilities Master Plan
  - 2009 developed a drought rate model for MA’s to use in setting their usage tiers
  - 2012 Carlsbad Seawater Desalination Project
Project Objectives & Tasks

- Task 1: Develop conceptual framework of costs & benefits of regional desalination
- Task 2: Provide technical assistance to Fiscal Sustainability Task Force
- Task 3: Provide Technical Assistance to Member Agency Working Group
- Task 4: “Other” identified technical assistance
Budget & Schedule

- Task 1: Conceptual Framework $58,700
- Task 2: Fiscal Sustainability $7,900
- Task 3: Member Agency Workgroup $109,300
- Task 4: “Other” includes travel $1,500

Proposed Phase II Contract Budget $177,400

- Begins July, 2013
- Includes 3 meetings w/Fiscal Sustainability
- Includes 8 meetings w/Member Agency Workgroup
- Ends June, 2014
- Any extension or amendment needs Board approval
Staff Recommendation

- Authorize the General Manager to award a professional services contract to A&N Technical Services, Inc. for an amount not-to-exceed $177,400 for consulting services for C.O.S. Phase II: Fiscal Sustainability & Desal.

  - This action is contingent upon Board adoption of the FY 2014 & FY 2015 recommended budget
Agenda

• History of Rate Increases
• Calendar Year 2014 Rate and Charge Drivers
• Proposed Rates and Charges
• Prudent Financial Management
  – Debt management
  – Operational efficiencies
• Modest increase in water sales, still not back to pre-recession sales
• MWD decreasing transportation by 1.8% in CY 2014 compared to last year’s increase of 14.4%
CY 2014 Rate and Charge Drivers

• Scheduled IID water price increase of 10%
  – In CY 2015, the contract price increase = 5%
  – In CY 2016, the price of IID water will be tied to an inflation index which has averaged 2.3% over last 10 years

• MWD’s treatment rate increase
  – MWD’s CY 2014 rate increase is focused on treatment – 17% increase

• Securing a prudent financial position
  – Advancing towards the Board policy targets
    • Coverage target of 1.50x achieved
    • RSF approximately 85% of target with projected $5M deposit
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 2014
- **By 2021, 34% of region’s supply**

**IID and Canal Lining Deliveries 2003-2021**

- **Acre-Feet**
  - 300,000
  - 250,000
  - 200,000
  - 150,000
  - 100,000
  - 50,000
  - 0

- **Calendar Year**
  - 2003
  - 2004
  - 2005
  - 2006
  - 2007
  - 2008
  - 2009
  - 2010
  - 2011
  - 2012
  - 2013
  - 2014
  - 2015
  - 2016
  - 2017
  - 2018
  - 2019
  - 2020
  - 2021

- **Lining the Coachella Canal**
# QSA Transfer Schedule

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<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>200,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2022-34</td>
<td>200,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2035-47</td>
<td>200,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*GDP/IPD 10-Year (2001-11) Compound Annual Growth Rate is 2.3%

<table>
<thead>
<tr>
<th>CY</th>
<th>AF</th>
<th>Estimated O&amp;M**</th>
</tr>
</thead>
<tbody>
<tr>
<td>80,200</td>
<td>$5 - $8/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$5 - $8/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$5 - $9/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$6 - $9/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$6 - $9/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$6 - $10/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$6 - $10/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$7 - $10/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$10 - $15/AF</td>
<td></td>
</tr>
<tr>
<td>80,200</td>
<td>$14 - $23/AF</td>
<td></td>
</tr>
</tbody>
</table>

**Based on increases to 10-year historical cost index**
## Adopted MWD CY 2014 Rates

<table>
<thead>
<tr>
<th>Adopted MWD</th>
<th>CY 2013</th>
<th>CY 2014</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1 Supply</td>
<td>$140</td>
<td>$148</td>
<td>5.71%</td>
</tr>
<tr>
<td>System Access</td>
<td>$223</td>
<td>$243</td>
<td>8.97%</td>
</tr>
<tr>
<td>Water Stewardship</td>
<td>$41</td>
<td>$41</td>
<td>0.0%</td>
</tr>
<tr>
<td>System Power</td>
<td>$189</td>
<td>$161</td>
<td>-14.81%</td>
</tr>
<tr>
<td>Treatment</td>
<td>$254</td>
<td>$297</td>
<td>16.93%</td>
</tr>
<tr>
<td>Tier 1 Untreated</td>
<td>$593</td>
<td>$593</td>
<td>0.0%</td>
</tr>
<tr>
<td>Tier 1 Treated</td>
<td>$847</td>
<td>$890</td>
<td>5.08%</td>
</tr>
</tbody>
</table>

- Fixed charge increases
  - Readiness-to-Serve Charge (RTS) = 17% increase
  - Capacity Charge (CRC) = 34% increase
MWD Remains the Largest Share of Water Cost

- MWD Supply Costs: 52%
- MWD Exchange Agreement Costs: 28%
- IID Water Purchases*: 20%
- Canal Water Purchases*: <1%

Total Cost = $294M

MWD Represents 80% of the Cost of Water

Excludes MWD’s fixed RTS and CRC charges
*Excludes the debt service for capital projects and recovery of settlement expenditures
MWD treatment costs increase by 16.9% while Water Authority costs decreased by 4.8%
# Proposed Rates & Charges

<table>
<thead>
<tr>
<th>Water Authority Rates and Charges</th>
<th>CY 2012 Previous</th>
<th>CY 2013 Current</th>
<th>CY 2014 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 M&amp;I Supply Rate ($/AF)</td>
<td>$638</td>
<td>$714</td>
<td>$732</td>
<td>2.5%</td>
</tr>
<tr>
<td>Melded M&amp;I Treatment Rate ($/AF)</td>
<td>$234</td>
<td>$256</td>
<td>$274</td>
<td>7.0%</td>
</tr>
<tr>
<td>Transportation Rate ($/AF)</td>
<td>$85</td>
<td>$93</td>
<td>$97</td>
<td>4.3%</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>$54.2</td>
<td>$60.2</td>
<td>$63.2</td>
<td>5.0%</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>$560</td>
<td>$593</td>
<td>$593</td>
<td>0%</td>
</tr>
<tr>
<td>Treated Special Agricultural Water Rate ($/AF)</td>
<td>$794</td>
<td>$849</td>
<td>$867</td>
<td>2.1%</td>
</tr>
<tr>
<td>IAC</td>
<td>$2.60/ME$^2</td>
<td>$2.65/ME</td>
<td>$2.68/ME</td>
<td>1.1%</td>
</tr>
<tr>
<td>Standby Availability Charge$^3$ 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>$4,326/ME</td>
<td>$4,681/ME</td>
<td>8.2%</td>
</tr>
<tr>
<td>Treatment Capacity Charge</td>
<td>$166/ME</td>
<td>$166/ME</td>
<td>$119/ME</td>
<td>-28.3%</td>
</tr>
</tbody>
</table>

$^1$ Fiscal year charge  
$^2$ ME means meter equivalent as defined in the resolution establishing the Infrastructure Access Charge  
$^3$ ME means meter equivalent as defined in the resolution establishing the Infrastructure Access Charge
Proposed CY 2014 “All-in” M&I Water Rate Breakdown

<table>
<thead>
<tr>
<th>Rates and Charges ($/AF)</th>
<th>Adopted CY 2013 Rates</th>
<th>Proposed CY 2014 Rates</th>
<th>Proposed CY 2014 Increase</th>
<th>Increase in Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melded Supply Rate</td>
<td>$714</td>
<td>$732</td>
<td>$18</td>
<td>2.5%</td>
</tr>
<tr>
<td>Melded Treatment Rate</td>
<td>256</td>
<td>274</td>
<td>18</td>
<td>7.0%</td>
</tr>
<tr>
<td>Transportation</td>
<td>93</td>
<td>97</td>
<td>4</td>
<td>4.3%</td>
</tr>
<tr>
<td>Storage*</td>
<td>139</td>
<td>144</td>
<td>5</td>
<td>3.6%</td>
</tr>
<tr>
<td>Customer Service*</td>
<td>57</td>
<td>56</td>
<td>-1</td>
<td>-1.8%</td>
</tr>
<tr>
<td><strong>Total Cost of Treated Water</strong></td>
<td><strong>$1,259</strong></td>
<td><strong>$1,303</strong></td>
<td><strong>$44</strong></td>
<td><strong>3.5%</strong></td>
</tr>
<tr>
<td><strong>Total Cost of Untreated Water</strong></td>
<td><strong>$1,003</strong></td>
<td><strong>$1,029</strong></td>
<td><strong>$26</strong></td>
<td><strong>2.6%</strong></td>
</tr>
</tbody>
</table>

*Fixed charges converted to $/AF using sales forecast and may not foot due to rounding
Breakdown of the CY 2014 Treated Water Rate and Charge Increases

“All-in***” Increase Distribution
$44/AF

- Customer Service
  -2% (-$1)
- Storage
  11% ($5)
- Transportation
  9% ($4)
- Melded Treatment**
  39% ($18)

Melded Supply Rate Increase
$18/AF

- IID Supply Rate
  ($12)
- MWD Wheeling
  (-$3)
- Other
  ($2)
- QSA Mitigation
  ($7)

*Converted to $/AF based on sales forecast
**MWD treatment costs represent 100% of the increase in the Melded Treatment Rate
Proposed All-in Untreated Water Rate

- **2011 Rate Forecast**
  - High Rate Scenario: $1,334
  - Low Rate Scenario: $1,210

- **Proposed CY 2014 All-in Untreated Water Rate**: $1,029 (2.6%)

- **Current Rate**: $1,003

- **Calendar Year**:
  - 2013: $986
  - 2014: $1,121
  - 2015: $1,208
  - 2016: $1,273
  - 2017: $1,334

- **Note**: The rate for 2013 is $1,003, which is 2.6% higher than the previous year's rate of $986.
Proposed All-in Treated Water Rate

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>2011 Rate Forecast Low Rate Scenario</th>
<th>Proposed CY 2014 All-in Treated Water Rate $1,303 (3.5%)</th>
<th>Current Rate $1,259</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>$1,231</td>
<td>$1,418</td>
<td>$1,259</td>
</tr>
<tr>
<td>2014</td>
<td>$1,280</td>
<td>$1,484</td>
<td>$1,259</td>
</tr>
<tr>
<td>2015</td>
<td>$1,334</td>
<td>$1,559</td>
<td>$1,259</td>
</tr>
<tr>
<td>2016</td>
<td>$1,404</td>
<td>$1,648</td>
<td>$1,259</td>
</tr>
<tr>
<td>2017</td>
<td>$1,478</td>
<td>$1,717</td>
<td>$1,259</td>
</tr>
</tbody>
</table>

- **2011 Rate Forecast High Rate Scenario**: $1,717
- **2011 Rate Forecast Low Rate Scenario**: $1,530
Prudent Debt Management*

- Debt Service savings of $6.1 million in FY 2013

*Excludes CP program fees and trustee services
Financial Performance Metrics – Debt Service Coverage Ratios

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Senior Lien Debt Service Coverage</th>
<th>Overall Debt Service Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>1.49</td>
<td>1.42</td>
</tr>
<tr>
<td>2014</td>
<td>1.50</td>
<td>1.41</td>
</tr>
<tr>
<td>2015</td>
<td>1.50</td>
<td>1.40</td>
</tr>
</tbody>
</table>

- Achieves the Board’s policy target of 1.50x in FY 2014
Financial Performance Metrics

- Target level not achieved during projection period
Financial Performance Metrics

- Significant withdrawals from the PAYGO fund are projected
- Stable to slightly increasing balances in Operating and Rate Stabilization Funds are projected
Impact of CY 2014 Rate Increase on Composite Monthly Residential Bill

• 5 Retail Agency Average Composite Cost (CY 2013)
  – Fixed Charge: $19.88 monthly
  – Commodity Charge: $52.58
  – Composite Monthly Residential Bill: $72.46

<table>
<thead>
<tr>
<th>Wholesale Charges</th>
<th>Proposed Rates Monthly Retail Cost</th>
<th>Percent Retail Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated</td>
<td>$0.90</td>
<td>1.2%</td>
</tr>
<tr>
<td>Treated</td>
<td>$1.52</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Actual rate impact will vary by member agency

Notes:
1. Analysis based on retail rates for the City of Carlsbad, Helix Water District, the City of San Diego, Sweetwater Authority, and Otay Water District.
2. Tier 1 and Tier 2 pricing blocks vary by member agency.
3. Historic water demand used to calculate member agency specific weighting factors.
4. Individual member agency commodity charge calculated using its average single family residential water use (hcf).
5. Composite commodity charge is the sum of the individual member agency’s commodity charge times its weighting factor.
Wholesale Monthly Cost of Water to Households

Estimated CY 2014 Wholesale Costs per Household*

- MWD Costs: $28.67
- IID/QSA Costs: $5.72
- Water Authority Operating Costs: $4.45
- Water Authority Capital Costs: $15.48

TOTAL: $54.30/month

• Cost of water purchases is 63% of the wholesale cost of water

• The remaining 37% or $19.93/month is for the Water Authority to:
  – Deliver water and maintain the system
  – Rapidly diversify the region’s water supplies
  – Provide in-region emergency water storage
  – Develop in-region water storage capacity

*Based upon 0.5 AF of consumption a year
Summary

• Key rate and charge drivers
  – 17% increase in MWD treatment costs
  – Scheduled IID water price increase
  – Advancing towards the Board’s financial policy objectives

• Rate and charge volatility mitigation
  – Very successful debt management
  – Improving sales environment and continued cost control measures

• Increase in overall water rates & charges of:
  – 3.5% treated & 2.6% untreated

• Overall rate and charge increase will vary by member agency depending upon the fixed charge allocations
Today’s Action

a) Accept Carollo Engineers’ San Diego County Water Authority Calendar Year 2014 Rates and Charges Cost of Service Rate Study, and San Diego County Water Authority Cost of Service Study Capacity Charge Report dated May 2013 included as Attachment A of this report.

b) Adopt Ordinance No. 2013-__ an ordinance of the Board of Directors of the San Diego County Water Authority setting rates and charges for the delivery and supply of water, use of facilities, and provision of services;

c) Adopt Ordinance No. 2013-__ an ordinance of the Board of Directors of the San Diego County Water Authority amending and restating the amounts and requirements of the System Capacity and Water Treatment Capacity Charges imposed by the Water Authority pursuant to Section 5.9 of the County Water Authority Act;

d) Adopt Ordinance No. 2013-__ an ordinance of the Board of Directors of the San Diego County Water Authority continuing the Standby Availability Charge for successive years at the same rate;

e) Find the actions exempt from CEQA pursuant to Public Resources Code § 21080(b)(8) and authorize the General Manager to file a notice of exemption.
Integrated Regional Water Management

IRWM planning: an innovative way to increase reliable water supplies, improve water quality and protect natural resources through cooperation among public agencies with different jurisdictions and non-profit public interest organizations.

San Diego IRWM Planning Region: 11 hydrologic units within county that flow west to the ocean.
IRWM in California

- IRWM: high priority for state since 2002
  - Key initiative in Water Plan Updates since 2005
- Supports planning on regional and watershed level
- Directs bond funds to cost-effective projects
- Helps achieve state and regional goals
IRWM in San Diego Region

- San Diego among leaders in IRWM across state
- First San Diego IRWM Plan approved 2007
- 2013 San Diego IRWM Plan completion deadline in October
  - Update and expand contents
  - Maintain eligibility for state grant funds
Priorities & Metrics

Workgroup Governance & Financing

Workgroup Land Use Planning Study

Collaboration with Regional Board Planning Study

Land Use Planning Study

Climate Change Planning Study

Integrated Flood Planning Study

Integrated Flood Workgroup

Climate Change Workgroup

Land Use Workgroup

Regulatory Workgroup

2013 IRWM Plan

Governance & Financing Workgroup

Priorities & Metrics Workgroup

Complete

Complete

Complete

Complete

Complete

Complete
2013 IRWM Plan Overview

Why?
- Chapter 1: Introduction
- Chapter 2: Vision and Objectives
- Chapter 3: Region Description

Where?
- Chapter 4: Tribal Nations of San Diego – NEW
- Chapter 5: Watershed Characterizations – NEW

Who?
- Chapter 6: Governance & Stakeholder Involvement
- Chapter 7: Regional Coordination

What?
- Chapter 8: Resource Management Strategies
- Chapter 9: Project Evaluation and Prioritization
- Chapter 10: Data Management & Technical Analysis
- Chapter 11: Implementation
Public Workshops for Draft Plan

San Juan
Santa Margarita
San Luis Rey
Peñasquitos
San Diego River
Carlsbad
San Dieguito
Pueblo
Sweetwater
Otay
Tijuana
Workshop Schedule and Locations

- Carlsbad, San Dieguito watersheds: July 11, 1-3 p.m., Oceanside Civic Center
- Pueblo, Sweetwater, Otay, Tijuana watersheds: July 10, 1-3 p.m., Chula Vista Civic Center Branch Library
- San Juan, Santa Margarita, San Luis Rey watersheds: July 17, 1-3 p.m., Vista City Hall
- San Diego River, Peñasquitos watersheds: July 19, 3-4:30, Mission Valley Library
Draft Plan and highlights document available for public review at San Diego IRWM website, www.sdirwmp.org
Master Plan Development Tasks for Release of Draft Documents

- Supply/Demand Analysis and Scenario Planning
- Evaluation Thresholds and Decision Metrics
- Baseline System Performance
- Storage Utilization Analysis
- New Supply and Conveyance Options (Long-Term)
- Recommended Near-Term System Improvements
- In-Line Hydroelectric Opportunities
- Project Costs & Supply/Conveyance Comparisons (MWD Rates)
- CEQA Process
- Selection of Preferred Project List
Recap of May 16th Workshop

- **Demand Uncertainty and Sensitivity**
  - Conducted sensitivity using SANDAG Series 13 population forecast
  - <5% in 2035 lower than UWMP

- **Role of Storage**
  - Connected surface water storage is optimized for regional and local management of supplies
  - Increasing connected regional Storage limited by infrastructure constraints and supply availability
Untreated Water Delivery System Conveyance Constraints

- **Future System Capacity Constraint – Pipelines 3 and 5 (beyond 2020)**
- **Crossover Pipeline to serve WTP (beyond 2025)**
- **SV Pump Station (to optimize storage use)**

**Existing / Future System Capacity Constraint – Serving South County WTPs**
Conveyance Usage – North of Twin Oaks

Urban Water Management Plan Scenario (Expected)

Lines represent % of traces (frequency)
Conveyance Usage – North of Twin Oaks

Maximum Local Scenario (IPR and Other Local Projects)

Lines represent % of traces (frequency)
Conveyance Usage – 30-inch Intertie

Urban Water Management Plan Scenario (Expected)

Lines represent % of traces (frequency)
Measuring System Performance

- Untreated Water Constraint
  - Additional untreated water conveyance capacity at MWD delivery point
  - 2020 to 2025 time frame

- Internal system bottlenecks need to be addressed
  - South County untreated water service
  - Immediate need to expand capacity – temporary repair insufficient
  - Review timing/scope of other long-term improvements

- Need for new supply development is 2025–30 or later
  - Dependent on local supply development & conservation
## Preliminary CIP Findings

### Construct as Defined

<table>
<thead>
<tr>
<th>Project</th>
<th>Purpose</th>
<th>Prelim Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>New 30-inch South County Intertie*</td>
<td>Alleviate conveyance bottleneck south of Alvarado</td>
<td>$6,000,000</td>
</tr>
<tr>
<td>Pipeline 3/4 Conversion</td>
<td>Address untreated water conveyance constraint at MWD delivery point</td>
<td>~$220,000,000 (includes MWD portion)</td>
</tr>
<tr>
<td>North County ESP Pump Station</td>
<td>Meet ESP treated water delivery needs</td>
<td>$21,563,000</td>
</tr>
</tbody>
</table>

### Revise Scope, Size and Timing (May Decrease Cost)

<table>
<thead>
<tr>
<th>Project</th>
<th>Purpose</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission Trails Suite of projects</td>
<td>Increase untreated water conveyance to serve South County WTPs.</td>
<td>$63,917,000</td>
</tr>
<tr>
<td></td>
<td>(*May replace 30-in. intertie)</td>
<td></td>
</tr>
<tr>
<td>Regulatory Storage</td>
<td>Provide operational storage for increased deliveries</td>
<td>$55,650,000</td>
</tr>
<tr>
<td>Third Pump San Vicente PS</td>
<td>Meet ESP, Carryover Storage needs</td>
<td>$8,044,000</td>
</tr>
</tbody>
</table>
## Preliminary CIP Findings

### Facilities Common To All Alternatives

<table>
<thead>
<tr>
<th>Project</th>
<th>Purpose</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline 6 (Water Authority Facility)</td>
<td>Address untreated water delivery constraint at MWD delivery point</td>
<td>$480,000,000</td>
</tr>
<tr>
<td>Second Crossover Pipeline</td>
<td>Address untreated water delivery constraint s/o Twin Oaks</td>
<td>$371,041,000</td>
</tr>
<tr>
<td>Other Facilities</td>
<td>Flow Controls and Pipeline Rehab (LMSE)</td>
<td>$20,000,000</td>
</tr>
</tbody>
</table>

Current CIP Budget Delay Beyond 2030
Next Steps In Development of Draft

- June 25th Meeting with Member Agency TAC
  - Reviewed cost and technical data
  - Comments and input on selecting a preferred list of projects for CEQA analysis

- Comprehensive evaluation of proposed projects and modifications to current CIP
  - Integrating long-term supply options into analysis
  - Project cost estimates and comparison to future imported water costs
  - Opportunities for in-line hydroelectric generation
  - Analysis of reliability improvements

- Decision matrix on project timing
  - Dependency on Member Agency actions
  - No regrets actions
  - Timing of future Water Authority Board decision
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 11, 2013</td>
<td>Special Meeting of the Water Planning Committee – Review draft Master Plan document, project costs, and rate impacts and draft Staff Recommended alternative for PEIR analysis</td>
</tr>
<tr>
<td>July 25, 2013</td>
<td>Water Planning Committee – Board input for final preparation of the draft Master Plan, Committee consideration of Staff Recommended Preferred List of Projects for analysis in PEIR</td>
</tr>
<tr>
<td>August 2013</td>
<td>Water Planning Committee – Board input and direction for Final preparation of Climate Action Plan and PEIR</td>
</tr>
<tr>
<td>September 2013</td>
<td>Release Draft Master Plan, CAP, and PEIR for member agency and public review and comment</td>
</tr>
<tr>
<td>October 2013- January 2014</td>
<td>Water Planning Committee- Updates and Informational reports on progress of Draft Master Plan and Program EIR</td>
</tr>
<tr>
<td>February 2014</td>
<td>Regular Board Meeting - Certification of Final PEIR and approval of Final Master Plan and CAP.</td>
</tr>
</tbody>
</table>
Bi-National Water Supply Opportunity: Supply to Baja, CA and Excess Supply to the Otay Water District
Future Growth Demands

San Diego Region
FUTURE RESIDENTIAL
AND INDUSTRIAL LAND

New Residential and Industrial Lands (2050)

- **New Residential** (Densities higher than 4 du/acre)
- **New Industrial**
- **Otay Water District**
- **Otay Water District within City of San Diego**
- **Other Water Districts**

New Residential and Industrial Lands by Water District

<table>
<thead>
<tr>
<th>District</th>
<th>Industrial Acres</th>
<th>Industrial Rank</th>
<th>Residential Acres</th>
<th>Residential Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otay Water District</td>
<td>3,862.9</td>
<td>1</td>
<td>1,302.7</td>
<td>2</td>
</tr>
<tr>
<td>City Of San Diego</td>
<td>869.8</td>
<td>2</td>
<td>2,898.6</td>
<td>1</td>
</tr>
<tr>
<td>Vallecitos County Water District</td>
<td>622.9</td>
<td>3</td>
<td>320.9</td>
<td>8</td>
</tr>
<tr>
<td>Padre Dam Mun. Water District</td>
<td>495.3</td>
<td>4</td>
<td>366.4</td>
<td>5</td>
</tr>
<tr>
<td>Carlsbad Mun. Water District</td>
<td>471.8</td>
<td>5</td>
<td>383.1</td>
<td>4</td>
</tr>
<tr>
<td>City Of Oceanside</td>
<td>326.1</td>
<td>6</td>
<td>516.8</td>
<td>3</td>
</tr>
<tr>
<td>Vista Irrigation District</td>
<td>140.2</td>
<td>11</td>
<td>336.0</td>
<td>7</td>
</tr>
<tr>
<td>Helix Water District</td>
<td>10.6</td>
<td>18</td>
<td>348.3</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: SANDAG Series 12 Planned Land Use Inventory
Agreement with Mexico to store water in Lake Mead

5-Year test program that reduces deliveries to Mexico when reservoirs are low and increases deliveries when reservoirs levels are high

Allows Nevada and Arizona to invest in Mexico’s infrastructure to conserve water to be shared with many agencies

Bi-national desalination can be considered a methodology to further conserve water for the benefit of river users in the U.S. and Mexico
Project Background

- 100 MGD desalination plant in Rosarito, Baja California, Mexico.
- Adjacent to the existing power plant
- Ocean intake and cooling ocean water from the power plant
- Desalinated water for Tijuana/Rosarito and the excess for the Otay Water District
- Water quality to meet Mexican and CDPH standards.
- Proposed facilities on the U.S. side include monitoring stations, UV disinfection, and an existing storage tank (37 MGD).
- NSC Agua has secured permission for the construction of the pilot plant on the power plant site and is already testing the first treatment phase
- Diversifies Otay’s water supply
- Potential lower per unit cost by constructing a larger desalination plant.
- Reduces water dependency on Colorado River supplies for both Baja and Otay Water District
Each Side of this Project Includes a Variety of Critical Issues

- Water Quality
- CDPH Approval
- Optimized Cost
- Federal Approval
- Environment
- Federal Approval
- Water Quality
- SEMARNAT Approval
- Optimized Cost
Counterpart Agencies in Mexico / U.S.

**MEXICO**
- CILA
- BECC/COCEF
- NADB
- SEMARNAT
- CONAGUA
- PROFEPAn
- SSA
- CEA
- CESPT
- SPA
- Ayuntamiento

**USA**
- IBWC
- EPA
- CDPH lead
- EPA to some extent
- EPA Attorney’s office
- CDPH lead
- EPA to some extent
- DWR to some extent
- Water Districts to some extent
- Otay Water District
- CalEPA
- City government

Some functions are conducted by different levels of government in each country (e.g. Federal vs. State, or State vs. Local).
Public Outreach – Proactive Community Outreach

Potential Community Concerns

- Unsafe Water Quality
- Potential for Vandalism in Mexico
- Excess Energy Consumption
- Rate Increases
- Past History of Border Water Proposals
- Unreliable/Service Disruptions
## Potable Water Demands District Wide

2009 Water Resources Master Plan  (Revised December 2010)

<table>
<thead>
<tr>
<th>CALENDAR YEAR</th>
<th>AC - FT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>30,400 (actual)</td>
</tr>
<tr>
<td>2015</td>
<td>32,000</td>
</tr>
<tr>
<td>2025</td>
<td>39,000</td>
</tr>
<tr>
<td>2050 (Build-out)</td>
<td>64,500</td>
</tr>
</tbody>
</table>
Maximum Annual Potential Demand from the Rosarito Plant

- **2010**: 0 AC-FT/YR (0 MGD)
- **2017**: 20,200 AC-FT/YR (18 MGD)*
- **2025**: 27,100 AC-FT/YR (24 MGD)*
- **2050**: 52,600 AC-FT/YR (47 MGD)*

*These numbers assume that some growth and demand includes densification and new construction and some level of conservation. If this growth does not happen, the Rosarito demand will be lower.
Pipeline From Rosarito to U.S. Border

Rosarito to El Florido ~ 17 Miles
El Florido to U.S. Border ~ 8 Miles
Total ~ 25 Miles
Otay Mesa Conveyance and Disinfection Facility
Water Quality Assurance and Regulatory Approval

Schematic:
## COSTS OF FACILITIES

### North of the Border

<table>
<thead>
<tr>
<th>Treatment Scenario</th>
<th>Capital Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Disinfection treatment only in U.S., with a waiver of specific filtration req’s through CDPH</strong></td>
<td>± $800,000</td>
</tr>
<tr>
<td><strong>B. Full filtration and disinfection in U.S</strong></td>
<td>± $17,000,000</td>
</tr>
<tr>
<td><strong>Conveyance</strong></td>
<td>± $20,000,000</td>
</tr>
<tr>
<td>18,000 LF of a 54-inch pipeline</td>
<td></td>
</tr>
<tr>
<td><strong>Pump Station</strong></td>
<td>± $9,000,000</td>
</tr>
</tbody>
</table>