Energy Program Update

Engineering & Operations Committee
September 27, 2018

Gary Bousquet
Senior Engineering Manager
Implement 2013 Board Energy Management Policy

1. Reduce power costs, maximize use of existing water infrastructure and use of renewables

Four Key Focus Areas:

- Existing Energy Facilities
- New Energy Initiatives
- Energy Procurement and Transmission
- Regulatory Engagement
518 horsepower = 0.4 MW
Energy

- Power x time
Energy – How far can it go?  MW x Time
Energy Terms

- **MW = Power**

- **MWh = Energy (and leads to $$)**
Energy Generation
Lake Hodges Energy Storage Facility

Generates energy as water flows downhill from Olivenhain Reservoir to Lake Hodges

Helps the region meet peak power demand

40 MW storage capacity | 54,000 MWh/year energy

Estimated Annual Net Revenue
$1.5 M
Energy Generation
Rancho Peñasquitos Hydroelectric Facility

Generates power as water flows through the aqueduct

4.5 MW of renewable energy capacity
21,000 MWh/year of renewable energy

Anticipated Annual Net Revenue
$900,000
Energy Generation
Solar Facilities

Kearny Mesa Headquarters
600 MWh/year

Operations Center in Escondido
250 MWh/year

Twin Oaks Valley Water Treatment Plant
1,850 MWh/year

Estimated Annual Savings
$150,000
FY18 Energy Usages and Costs

**Flow Control Stations, FRS, APP**
- $73K
- 292 MWh

**Offices**
- $341K
- 1,600 MWh

**Pump Stations**
- $620K
- 2,514 MWh

**Water Treatment Plant-100 MGD**
- $1.3M
- 6,600 MWh

**Desalination-50 MGD**
- $33M
- 234,000 MWh

**Water Treatment Plant-100 MGD**
- $1.3M
- 6,600 MWh

**Desalination-50 MGD**
- $33M
- 234,000 MWh
Key Focus Areas

- New Energy Initiatives
- Energy Procurement
- Regulatory Engagement
New Energy Initiatives: What is looking good?

- Alvarado Hydroelectric Facility
- Twin Oaks Battery System
- San Vicente Energy Storage Facility
Twin Oaks Battery System
New Energy Initiatives: What hasn’t worked out yet?

- Olivenhain Reservoir Floating Solar
- Olivenhain Dam Wind Turbines
Key Focus Areas

- New Energy Initiatives
- Energy Procurement
- Regulatory Engagement
Energy Procurement and Transmission

- 3,500 MWh/year Hoover Power allocation

- SDG&E Coordination
San Diego Gas & Electric Coordination

- Rancho Peñasquitos Power Transfer -
  - Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT)
    - Applies generated energy to offset Carlsbad Desalination Plant Energy Use
    - SDG&E Advice Letter under review by California Public Utilities Commission
    - Potential annual savings $1.5 million - $2 million

- Other SDG&E coordination
  - Hoover Power
  - Other power deals
What are we doing?

- New Energy Initiatives
- Energy Procurement
- Regulatory Engagement
2018 Legislative and Regulatory Engagement

• Commented on rulemaking that affects the cost and use of energy

• Monitored regulatory activity on 6 energy proceedings

• Supported Government Relations Program legislative efforts
  ▪ 3 energy related senate bills
  ▪ 5 energy related assembly bills
Energy Program Moving Forward

- Implement Board adopted Energy Management Policy with attention to:
  - Working towards providing lower cost energy to the Carlsbad Desalination Facility
  - Continuing progress on San Vicente Energy Storage Facility with task force
- Pursue smaller projects where feasible
Kearny Mesa Headquarters
Roof Rehabilitation

Engineering and Operations Committee
September 27, 2018

Wade Griffis
Principal Engineer
Kearny Mesa Headquarters
Roof Rehabilitation Area
New Waterproofing System

Polyvinyl Chloride (PVC) Overlay Installation
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<td>Weather Tech Roofing Inc.</td>
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Advertised Bid Range: $310,000 to $400,000
Recommendation

1. Determine that the bid protest is valid.

2. Authorize the General Manager to award a construction contract to Sylvester Roofing in the amount of $347,500 for the Kearny Mesa Headquarters Roof Rehabilitation project.
L. H. Woods, and Sons, Inc.

- Formed in 1958
- 1st project with Water Authority in 1959 as an excavation subcontractor on 2nd Aqueduct
- Lee H. Woods and son James D. Woods, Sr. formed partnership to construct San Diego 2nd Aqueduct
- Three family generations of management
Second Aqueduct Construction - 1960
2nd Aqueduct - 1972
2nd Aqueduct - 1972
2nd Aqueduct - 1972
Second Aqueduct Pipeline 4A - 1984
# Second Aqueduct Pipeline 4A - 1984

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**Totals**

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Our Region's Trusted Water Leader
San Diego County Water Authority
North County Distribution Pipeline - 1996
North County Distribution Pipeline - 1996
A long history

- Completed 41 projects
Reline Project (2000) - Removing PCCP
Small Business Innovation at work
A long history

- Completed 13 of 16 Water Authority Reline projects
  - Relined 78 percent of 45 miles of relined PCCP pipe
Emergency Repair at San Diego River - 2008

- Completed 8 emergency/urgent repairs
Emergency Repair at San Diego River - 2008
Last Reline Project Completed - 2018
Proclamation Presentation

- IN RECOGNITION OF its contribution to the construction of the Water Authority’s aqueduct system over a period of 60 years; and

- IN RECOGNITION OF its unwavering availability during urgent repair responses; and

- IN RECOGNITION OF its innovative spirit as it applies to Water Authority’s relining work resulting in savings to San Diego County ratepayers; and

- IN RECOGNITION OF its support of the Water Authority’s Small Contractor Outreach and Opportunities Program.
Pipeline 3 Relining Lake Murray to Sweetwater Reservoir Notice of Completion

Engineering and Operations Committee
September 27, 2018

Neena Kuzmich
Principal Engineer
Project Overview

- Relined 4.3 miles of Existing Pipe
- Developed 13 Access Portals
- Demolished Four Flow Control Facilities
- Obtained 23 Temporary Construction Easements
- Coordinated with State, County, City, and Member Agencies
Value Engineering Savings

- Deleted 4 portals
- Project savings: $305,000
- Eliminated SDG&E work to relocate gas line
- SDG&E reimbursement: $479,967
Contract Summary

Original Contract Amount: $28,570,000

Change Orders: ($575,341)

Final Contract Amount: $27,994,659
Staff Recommendation

- Authorize the General Manager to accept the Pipeline 3 Relining Lake Murray to Sweetwater Reservoir project as complete, record the Notice of Completion, and release funds held in retention to L.H. Woods and Sons, Inc. following expiration of the retention period.
Pipeline Condition Assessment of the First Aqueduct

Engineering & Operations Committee
September 27, 2018

Martin Coghill
Senior Water Resources Specialist
First Aqueduct

- **Pipeline 1** - completed in 1947
- **Pipeline 2** - completed in 1952
First Aqueduct

- **Pipeline 1** - completed in 1947
- **Pipeline 2** - completed in 1952
- Pipelines merge at each tunnel
First Aqueduct

- **Pipeline 1** - completed in 1947
- **Pipeline 2** - completed in 1952
- Pipelines merge at each tunnel
- **Treated** - North of Escondido
- **Untreated** - South of Escondido
First Aqueduct

- **Pipeline 1** - completed in 1947
- **Pipeline 2** - completed in 1952
- Pipelines merge at each tunnel
- **Treated** - North of Escondido
- **Untreated** - South of Escondido
First Aqueduct - Materials

- Welded Steel Pipe
  - Coal Tar Lined - 2.75 miles
First Aqueduct - Materials

- Welded Steel Pipe
  - Coal Tar Lined - 2.75 miles

- Reinforced Concrete Pipe
  - w/ Steel Cylinder - 46 miles
First Aqueduct - Materials

- Welded Steel Pipe
  - Coal Tar Lined - 2.75 miles

- Reinforced Concrete Pipe
  - w/ Steel Cylinder - 46 miles

- Reinforced Concrete Pipe
  - w/o Steel Cylinder - 12 miles
First Aqueduct - Materials

- Welded Steel Pipe
  - Coal Tar Lined - 2.75 miles

- Reinforced Concrete Pipe
  - w/ Steel Cylinder - 46 miles

- Reinforced Concrete Pipe
  - w/o Steel Cylinder - 12 miles

- Unreinforced Concrete Tunnels - 4.25 miles
First Aqueduct Condition Assessment

Why now?
First Aqueduct - Historical Challenges

- **Welded Steel Pipe**
  - Failed lining - inconsistent surface
  - Internal corrosion product - obstructive

- **Reinforced Concrete Pipe**
  - Unproven technologies
  - Limited to visual inspection only

- **Operations**
  - Inability to isolate and drain for long periods
First Aqueduct - Current Opportunities

- Welded Steel Pipe
  - Lining and corrosion to be removed - more assessment options
  - Construction portals - improved accessibility

- Reinforced Concrete Pipe
  - Technologies now tested and proven
  - Utility patents have expired - opening up competition

- Operations
  - Lower demands - support longer isolation
  - Single pipe in service - supports water quality objectives
Technologies

Acoustic Leak Detection

Laser Profilometry

Electromagnetics
First Aqueduct - Summary

Strategy:
- Utilize multiple technologies
- Implement multiple contracts
- Agile scheduling to support Operations

Objectives:
- Assess first 27 miles in 4 years
- Complete all 65 miles over ~9 years
Staff Recommendations

- Authorize the General Manager to award professional services contracts for pipeline condition assessment services to:
  
  - Diakont Advanced Technologies, Inc. for a not-to-exceed amount of $480,000 for a period of four years
  
  - Pure Technologies U.S. Inc. for a not-to-exceed amount of $1,001,000 for a period of four years, with an option to renew for an additional two years
  
  - Pipeline Inspection and Condition Analysis Corporation for a not-to-exceed amount of $2,242,000 for a period of four years, with an option to renew for an additional two years
MWD’s Local Resources Program Update

Imported Water Committee
September 26, 2018

Amy Chen, Director of MWD Program
MWD’s Local Resources Program Evolution

**LPP**
Cost sharing
Target: 30 TAFY
Variable

**LRP**
Pay-for-performance; competitive
($250/AF)
Target: 53 TAFY

**LRP**
Pay-for-performance
Target: 65 TAFY

**LRP**
Subsidy amount updated
($305 fixed; $340/$475 sliding)

**GRP**
Pay-for-performance
($250/AF)

**SDP**
Pay-for-performance
Target: 50 TAFY

**LRP**
First come, first served
Target Updated: 174 TAFY
LRP Application Checklist

- Project Overview
- Project Facilities
- Project Costs
- Benefits
- Environmental Documentation and Permitting
  - CEQA, Regulatory approvals
- User Identification
### MWD’s Local Resources Program (2017)

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<th>Program</th>
<th># projects (MWD)</th>
<th>AFY (MWD)</th>
<th># projects (SDCWA)</th>
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\(^a\) Figures reflect actual and estimated deliveries for all Metropolitan-assisted projects and payments reported for fiscal year 2016/17
MWD MA Local Resources Projects

* Figure reflects actual and estimated deliveries for all Metropolitan-assisted projects reported for fiscal year 2017
** For SD: data includes PURE, East County AWP, Fallbrook CUP, Member Agencies’ portion of Carlsbad Desal, Oceanside, and other NSDCRC
MWD’s 2015 IRP on Local Resources

- “Ensure total supply production target of 2.43 MAF in 2040 is reached”
- “Recognize risk and potentially develop additional supplies”
- Two “key approaches”
  1. Review existing programs: LRP & On-Site Retrofit
  2. Examine other approach to “maintain” local supplies
MWD’s 2015 IRP

- Local resource target to “develop and protect local water supplies”
- 2.4 MAF 2040 target includes 20 TAF of new supplies with remaining representing existing projects and those under construction
  - Concerned with local supply nonperformance
“Interim” 150,000 AFY LRP Target Recommended

- Of 2007 LRP target, have 68,000 AFY* remaining
- Accommodates existing LRP applications
- Signals to agencies that MWD’s LRP is “open for business”
- Complements other MWD activities
  - Potential Regional Recycled Water Program

### Submitted LRP Applications (projects not yet producing)

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*adjusted for projects with rescinded/reduced capacity
Next Steps

- **October 2018**
  - MWD action on “interim target”
  - Staff recommended: 150,000 AFY
  - Financial impact: up to $71M annually
    - Exceeds $45M included in 10-year rate forecast

- **2019**
  - Consider LRP “refinements”
    - E.g., program criteria, and additional resources like stormwater

- **2020 IRP**
  - “Revisit” LRP target
Agenda

- Law of the Colorado River
- Colorado River Hydrology Update
- Colorado River Issues Update - Part 3
Law of the Colorado River

- Split Basin into Upper and Lower divisions
- Authorized development of dams and infrastructure
- Established priority system among states and users within states
- Quantified allocations to Basins, states, and users
- Created operational criteria for reservoirs in surplus and shortage conditions
- Established Mexico’s apportionment and binational relationship
# Colorado River Basin Apportionments

## Upper Basin 7.5 MAF
- Colorado 3.86 MAF
- Utah 1.71 MAF
- Wyoming 1.04 MAF
- New Mexico 0.84 MAF
- Arizona 0.05 MAF

## Lower Basin 7.5 MAF
- California 4.4 MAF
- Arizona 2.8 MAF
- Nevada 0.3 MAF

Mexico 1.5 MAF

Colorado River Priority System

Lower Basin Priority System

- California has senior rights to Arizona and Nevada
- Each state also has its own priority system
- If shortage cutbacks occur, fall on lower priority users first

<table>
<thead>
<tr>
<th>California’s Priority System (Primary Users)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>3a</td>
</tr>
<tr>
<td>3a</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>Total CA</td>
</tr>
</tbody>
</table>

Notes:
- Priorities 1, 2, & 3b have uncapped use with over/under impacting MWD.
- Priorities 2 & 3b include smaller agricultural users of Yuma Project and Palo Verde mesa lands.
2007 Interim Guidelines

- Coordinate reservoir operations of Lake Powell and Lake Mead
- Define shortage triggers and associated cutbacks to users
- Did not address shortages to Mexico (Addressed in Minute 323)
- Established conserved water storage system in Lake Mead (Intentionally Created Surplus program)
- 20-Year term (2007-2026)
Lake Powell - 2007 Interim Guidelines

- Serves as ‘bank account’ to Colorado River system
- Four operational tiers:
  - Determine annual release volume
  - Balance contents with Lake Mead
- Power generation
  - Min. Power Pool 3,490 ft
Lake Mead - 2007 Interim Guidelines

100,000 AF = ~ 1 ft

Surplus Conditions

1,219.6 ft (25.9 MAF)

1,145.0 ft (15.9 MAF)

Normal/ICS Surplus Conditions

1,075.0 ft (9.6 MAF)

1,050.0 ft (Min. Power Pool)

Shortage Conditions

1,025.0 ft (6.0 MAF)

895.0 ft (0.0 MAF)

Not to scale
Shortage Reductions - 2007 Interim Guidelines

- Reductions to Arizona, Nevada, and Mexico (Minute 323) defined for 3 shortage levels based on elevation triggers.
- Cuts increase as Lake Mead declines to lower triggers.
- California does not face cuts.
Drought in the Colorado River Basin

- Prolonged drought conditions since 2000 have caused Lake Mead storage to decline to record low levels
- Likelihood of Lower Basin shortage greater and sooner than projected when 2007 Interim Guidelines were established
- Led to discussions of Drought Contingency Plan (DCP) currently under development
Hydrology and Operations

Hydrology (Lake Powell Inflows)
- 2017 - 113% of average
- 2018 - 44% of average
- 2019 - 75% of average*

2019 Reservoir Operations
- 9.0 MAF release from Lake Powell*
- No Lower Basin shortage

<table>
<thead>
<tr>
<th>Storage Type</th>
<th>Capacity Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Storage</td>
<td>48% of capacity</td>
</tr>
<tr>
<td>Powell</td>
<td>46% of capacity (3,595’)</td>
</tr>
<tr>
<td>Mead</td>
<td>38% of capacity (1,079’)</td>
</tr>
<tr>
<td>Precipitation</td>
<td>67% of average</td>
</tr>
<tr>
<td>Water Year Inflow</td>
<td>44% of average</td>
</tr>
</tbody>
</table>

Data from Sept 17

*Most probable projection
Shortage Projections

% Chance of Lower Basin Shortage
Projections as of August 2018

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>57%</td>
<td>68%</td>
<td>70%</td>
<td>65%</td>
<td></td>
</tr>
</tbody>
</table>

- Never had an official shortage to date
- Increased chance of shortage; probable in 2020
- Chance of lower level shortages also increasing
Colorado River Issues Update - Part 3

- Basin States Update
  - Drought Contingency Plan
  - Lake Mead ICS
- Salton Sea Issues
- Relationship to QSA
## Lower Basin Shortage Projections

% Chance of Lake Mead Reaching Shortage

<table>
<thead>
<tr>
<th>Shortage Condition</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projections from August 2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortage Condition</td>
<td>0</td>
<td>57</td>
<td>68</td>
<td>70</td>
<td>65</td>
</tr>
<tr>
<td>1st Level (Elevation 1,075 to 1,050 ft)</td>
<td>0</td>
<td>57</td>
<td>42</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td>2nd Level (Elevation 1,050 to 1,025 ft)</td>
<td>0</td>
<td>0</td>
<td>26</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>3rd Level (Elevation below 1,025 ft)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>14</td>
</tr>
</tbody>
</table>

| Projections from April 2018               |      |      |      |      |      |
| Shortage Condition                        | 0    | 52   | 64   | 68   | 65   |

Based on Bureau of Reclamation data
Additional Shortage Cutbacks

Proposed Lower Basin DCP & Minute 323 Water Scarcity Plan

Shortage Reduction Volume
(Thousand Acre Feet)

<table>
<thead>
<tr>
<th>Lake Mead Elevation</th>
<th>CA</th>
<th>AZ</th>
<th>NV</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,075’</td>
<td>512</td>
<td>21</td>
<td>80</td>
<td>104</td>
</tr>
<tr>
<td>1,050’</td>
<td>592</td>
<td>25</td>
<td></td>
<td>104</td>
</tr>
<tr>
<td>1,025’</td>
<td>720</td>
<td>30</td>
<td></td>
<td>275</td>
</tr>
</tbody>
</table>

2007 Interim Guidelines
Drought Contingency Plan
San Diego
Brought To You By Water...
Legislation and Public Outreach Committee
September 27, 2018

Mike Lee and Denise Vedder
Public Outreach and Conservation Department
Successful Summer Concludes

- Coastal Cleanup Day
- KUSI morning show
- Times of San Diego

Opinion: San Diego’s Summer Tourism Boom Was Brought to You by Water

Three months ago, we predicted that this would be one of the most successful summers for tourism in our county — and the season didn’t disappoint. More than 11 million people visited the county over the past three months, spending $3.5 billion and boosting our local economy.
Spotlight on Manufacturing

Regional events highlight San Diego:
- Sept. 27-28: Industrial Environmental Association
  - Water Authority presents Water Innovation & Efficiency Award
- Oct. 2: East County EDC Manufacturing Day
- Oct. 4: San Diego Regional EDC #MadeinSanDiego event
- Oct. 9: East County Economic Summit
- Oct. 10: North County EDC water issues forum
Brought to You by Water - Manufacturing
Advertising Program Extends Reach

- **Digital Streaming**
  - 15 & 30 second videos
  - Started: July

- **Social Media**
  - Facebook
  - LinkedIn
  - YouTube
  - Started: July

- **Rough & Tumble**
  - Started: July

- **TV**
  - KFMB/8
  - 30-second ads
  - Started: September 17
Next steps: Gaining Social Media Influence

- Jon Foreman, Switchfoot
  - Filming Sept. 25 and 26
  - Agency facilities
  - Water Conservation Garden
  - Cuyamaca College

- Videos highlight how water is made, saved and used
  - Infrastructure
  - Efficiency
  - Economic benefits
Sacramento Update

Legislation and Public Outreach Committee
September 27, 2018

Glenn Farrel
Government Relations Manager
August 31: Legislature adjourned its 2017-18 legislative session

Governor has through September 30 to act on all bills sent to him during final weeks of legislative session

Newly-constituted Legislature will convene on December 3
## End of 2018 Session Objectives

<table>
<thead>
<tr>
<th>OBJECTIVE</th>
<th>ACCOMPLISHED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Water Authority sponsored bill - AB 2064 (Gloria/Weber) - to Gov’s desk</td>
<td>✓</td>
</tr>
<tr>
<td>Get Water Authority sponsored bill - AB 2371 (Carrillo) - to Gov’s desk</td>
<td>✓</td>
</tr>
<tr>
<td>Get Water Authority sponsored bill - SB 1277 (Hueso) - to Gov’s desk</td>
<td>✗</td>
</tr>
<tr>
<td>Defeat water tax legislation</td>
<td>✓</td>
</tr>
<tr>
<td>Secure grant eligibility for Carlsbad desalination intake facility</td>
<td>✗</td>
</tr>
<tr>
<td>Generate attention on WaterFix cost allocation issues</td>
<td>✓</td>
</tr>
<tr>
<td>Get AB 2787 (Quirk) - advancement for pumped hydropower storage - to Gov’s desk</td>
<td>✗</td>
</tr>
<tr>
<td>Defeat SB 998 (Dodd) - water system service shut-offs</td>
<td>✗</td>
</tr>
</tbody>
</table>
Sponsored Bills: AB 2064 (Gloria)

- AB 2064 is intended to fully address cashflow issues for non-profit organizations and DACs participating in IRWM programs
- AB 2064 is jointly authored by Assemblymembers Todd Gloria and Shirley Weber
- Pending consideration on Governor’s desk
Sponsored Bills: AB 2371 (Carrillo)

- Co-sponsored with NRDC to advance several Independent Technical Panel (ITP) recommendations to improve landscape irrigation efficiency

- Key provisions
  - Landscape contractors examination
  - WUCOLS updates
  - Home inspections
  - Consumer information working group

- Pending consideration on Governor’s desk
Safe and Affordable Drinking Water Program

- SB 844 and SB 845 (Monning) were end-of-session efforts to enact the Administration’s Safe and Affordable Drinking Water Program
- SB 844 - Production agricultural taxes
- SB 845 - Drinking water “voluntary remittance” program
  - Customers may opt-out of payment on retail water bill
- Speaker Rendon identified Assemblymembers Eduardo Garcia and Heath Flora as the lead legislators for this policy matter going into 2019
Safe and Affordable Drinking Water - Next Steps

- Assembly Water, Parks, and Wildlife Committee staff will reach out to stakeholders to determine whether there is some workable proposal that could be developed for 2019
- Water community’s potential affirmative efforts to develop an alternative path forward will be discussed during Fall 2018
  - Safe and affordable drinking water trust fund - utilizes infusion of budget surplus funds
  - Opt-out alternative that addresses administrative challenges
  - Opt-in alternative
  - 2020 ballot - sugary-beverage tax proposed by CA Dental Association and CA Medical Association
    - 2-cents per fluid ounce
    - $1.7 billion annual revenue - allocated to health-related programs
      - 3% ($51 million) of annual revenue would be allocated to “Access to Healthy Food and Drink Account”
Final Disposition of Other Key Measures

- **AB 2050 (Caballero)**
  - Small system water authority act
  - Addresses structural deficiencies in service delivery by failing/non-compliant water systems
  - Governor’s desk

- **SB 998 (Dodd)**
  - Water service shut-offs
  - Prescribes new processes and standards relative to retail water service shut-off authority
  - Governor’s desk
Final Disposition of Other Key Measures

- **AB 1944 (Garcia)**
  - Sustainable groundwater management - San Luis Rey Valley groundwater basin
  - Chapter 255, Statutes of 2018

- **SB 100 (De Leon)**
  - 100 Percent Clean Energy Act of 2017
  - Accelerates RPS requirement from 50% by 2030 to 60%
  - Creates state policy to meet 100% of the state’s retail electricity supply with a mix of RPS-eligible and zero-carbon emission resources by December 31, 2045
  - Requires CPUC, Energy Commission, and Air Resources Board to incorporate policy into all relevant planning
Controller’s Report
As of June 2018
(Unaudited)

Administrative and Finance Committee
September 27, 2018

Presented by Christopher Woidzik, Controller
Report Contents

Main Staff Report: Budget Variance Analysis and Discussion

Financial Report Attachments
1. FY 2018 Results Summary
2. FY 2018 Actual and Budget Comparison
3. Water Sales Volumes (Acre-Feet)
4. Water Sales Revenues (Dollars)
5. Water Purchases and Treatment Costs (Dollars)
FY 2018 Results

✓ First year (FY 2018) of the two year budget is completed

✓ Net Water Sales revenue was 6.8% higher than budget in spite of a 7.3% decrease in acre-feet of water sold

✓ Department expenses were lower than budget by 10%

✓ CIP expenses were in excess of budget by $13 million, but this was due to the settlement related to San Vicente Dam matter, otherwise expenses matched to budget

✓ Budget planned for a withdrawal from Fund Balance of $26.6 million, but only $13.2 million was required (50% less); savings moves into FY 2019
FY 2018 Summarized Results

(Amounts in millions)

<table>
<thead>
<tr>
<th></th>
<th>FY 2018</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amended Budget</td>
<td>Actual</td>
</tr>
<tr>
<td>Water Sales</td>
<td>$635.1</td>
<td>$591.8</td>
</tr>
<tr>
<td>Water Purchases &amp; Treatment Costs</td>
<td>495.1</td>
<td>442.4</td>
</tr>
<tr>
<td>Total Net Water Sales Revenues</td>
<td>140.0</td>
<td>149.4</td>
</tr>
<tr>
<td>Other Revenues</td>
<td>110.3</td>
<td>126.3</td>
</tr>
<tr>
<td>Total Revenues</td>
<td>250.3</td>
<td>275.7</td>
</tr>
<tr>
<td>Expenses</td>
<td>218.6</td>
<td>217.6</td>
</tr>
<tr>
<td>Net Revenues before CIP</td>
<td>31.7</td>
<td>58.1</td>
</tr>
<tr>
<td>Capital Improvement Program</td>
<td>58.3</td>
<td>71.3</td>
</tr>
<tr>
<td>Net Fund Withdrawals</td>
<td>$(26.6)</td>
<td>$(13.2)</td>
</tr>
</tbody>
</table>

Note: The Budget was amended in June 2018, but was nearly identical to the Original Budget.
FY 2018 Summarized Results - Water Sales in Acre Feet

WATER SALES VOLUMES
Budget Versus Actual (in Acre-Feet) for the 12 Months Ended June 30, 2018

- Budget 431,353 AF
- Actual 399,826 AF
- 7% decrease

Acre-Feet (AF)


Our Region’s Trusted Water Leader
San Diego County Water Authority
FY 2018 Summarized Results - Water Sales Revenues

WATER SALES REVENUES
Budget Versus Actual (in Millions $)
for the 12 Months Ended June 30, 2018

- Budget $635.1
- Actual $591.8

-7%
FY 2018 Summarized Results - Water Purchases & Treatment Costs

WATER PURCHASES AND TREATMENT COSTS
Budget Versus Actual (in Millions $)
for the 12 Months Ended June 30, 2018

Budget $495.1
Actual $442.4
-11%

in Millions $

$700.0
$600.0
$500.0
$400.0
$300.0
$200.0
$100.0
$0.0

Budget
Actual

Water Authority Long-Range Demand Forecast Update

Water Planning Committee
September 27, 2018

Tim Bombardier
Principal Water Resources Specialist
Long-Range Demand Forecast Update

- Updated every 5 years
  - Coincides with state-mandated Urban Water Management Plan updates

- 25-year planning horizon
  - New planning horizon extends to 2045

- Utilizes econometric model to project sector-level demands

- Based on demographic and economic projections from the San Diego Association of Governments
Forecast Role in Integrated Planning Process

Urban Water Management Plan

Demand Forecast

Facilities Master Plan

Long-Range Financial Plan
Demand Forecast Model

- Econometric model (CWA-MAIN)
- Water Authority forecast = sum of member agency level projections

- Forecast generated by major sector
  - Single-family
  - Multi-family
  - Non-residential
  - Agriculture
Contractor Selection Process

- RFP released in July 2018
- Convened interagency review panel
  - Water Authority and City of San Diego staff
- 2 proposals received
  - both contractors interviewed
- Hazen and Sawyer selected based on:
  - strength of proposal
  - interview responses
  - prior work efforts on Water Authority projects
Selected Contractor Background

- Hazen and Sawyer founded in 1951
- National engineering firm headquartered in New York
  - Local San Diego office
- Project manager Dr. Jack Kiefer
  - Economist with over 26 years of integrated water demand and supply planning experience
Project Scope, Budget and Schedule

- **Project scope of work composed of 18 tasks**

- **Tasks aggregated into 5 major groups**
  - Data collection and database development
  - Re-estimation of sectoral models
  - Development of “Baseline” normal year demand forecast
  - Construction of alternate demand forecast scenarios
  - Stakeholder meetings and comprehensive project report

- Anticipated 22-month project schedule
Authorize General Manager to award a professional services contract to Hazen & Sawyer for a not-to-exceed contact amount of $529,603 for Long Range Demand Forecast Update project.
MWD Future Supply Actions Funding Program

Water Planning Committee
September 27, 2018

Goldy Herbon
Senior Water Resources Specialist
Program Description

Funding for technical studies or pilot projects to enable effective future resource planning and potential implementation of the following source types:

- Stormwater
- Groundwater
- Seawater Desal
- Recycled Water
Program Objectives

- Reduce barriers to future water resource production
- Advance the field of knowledge for the four source types
- Provide results that are unique, yet transferable to other areas in the region
- Represent a critical path to water resource implementation
Program Elements

- Open to MWD member agencies
- $3.5 million
- Up to $500,000 per agency
- 50/50 match - cannot include in-kind
- 2-year pilot studies and research
  - E.g. demonstration studies, system integration studies, innovative treatment processes, new technologies, ocean intakes and outfalls
San Diego Region Proposal

San Diego County Water Authority - $175,000

Olivenhain Municipal Water District & City of San Diego - $245,000

Padre Dam Municipal Water District - $80,000
Schedule

- **07/06/18**: Release of RFP
- **07/26/18**: Non-Mandatory MWD workshop
- **08/31/18**: RFP Proposals Due
- **11/06/18**: Proposal Awards
- **12/31/18**: Agreements signed by recipients
- **02/28/19**: Work Initiation
- **02/28/21**: Deadline Final Report Deadline
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
Water Resource Management Group

2018 Request for Proposals for Future Supply Actions Funding Program

KEY DATES
Request for Proposals (RFP) Issued...............................................................July 6, 2018.
Pre-proposal webinar..............................................................July 26, 2018 @ 10:00 a.m.
Proposals due by..............................................................August 31, 2018 @ 1:00 p.m.

NOTICE
A non-mandatory pre-proposal webinar will be held July 26, 2018, from 10:00 a.m. to 11:30 a.m. All Member Agencies and proposal partners are encouraged to participate.

Metropolitan Contact: Warren Teitz
E-mail Address: JSAFundingprogram@mwdh2o.com
Update on Camp Pendleton Desalination Intake Testing Program

Water Planning Committee
September 27, 2018

Jeremy Crutchfield
Principal Engineer - Water Resources
Project Background

- Unique, large coastal location at top of the Water Authority’s Aqueduct System
- Completed Feasibility and Technical Studies support project viability
- Identified in the 2013 Master Plan Update as a new supply option to meet long-term supply needs (post-2030)
  - Adaptive Management approach
  - Future project development decisions will consider water supply conditions and uncertainties
2013 Geologic / Hydrologic Investigations

- Conducted Geophysical Survey using seismic reflection
- Drilled exploratory boreholes
- Constructed test well

Key Findings:
- Large sub-seafloor ancient river channel
- Potential favorable geology to support large subsurface intake system
2013 Marine Environment Investigations

- Physical Oceanography
  - Ocean Currents
  - Wave Pressure

- Water Quality Monitoring
  - Temperature
  - Salinity

- Marine Biology Monitoring

Key Findings:
- Typical marine environment – nothing unusual
- No fatal flaws to siting open ocean intake and discharge
<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Determine status of water supply conditions and water demand</td>
</tr>
<tr>
<td>2020</td>
<td>Consider initiating Permitting for first phase 50 MGD Camp Pendleton Desal</td>
</tr>
<tr>
<td>2025</td>
<td>Potable reuse construction underway/completed? Financing on Rosarito Desal closed?</td>
</tr>
<tr>
<td>2025</td>
<td>Status of Imported Supplies (CA Water Fix / CR)</td>
</tr>
<tr>
<td>2030</td>
<td>Consider Potential Implementation*</td>
</tr>
<tr>
<td>2035</td>
<td>*Assumes no litigation delays</td>
</tr>
</tbody>
</table>

*Assumes no litigation delays

**Adaptive Management Approach**
Intake Testing Program

Objective:
Determine the differences in feed water quality and pre-treatment requirements for a screened open ocean intake as compared to a subsurface intake
Regulatory Approvals and Permitting
Permitting Challenges

- Project delayed two years due to withheld regulatory approvals and permits associated with CEQA and the Ocean Plan Amendment

<table>
<thead>
<tr>
<th>Jul 2016</th>
<th>Jun 2017</th>
<th>Jun 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submitted State Lands Land Lease Permit Application</td>
<td>State Lands Staff requests a MND be developed</td>
<td>State Lands Staff requests full EIR at a cost of $626k</td>
</tr>
<tr>
<td>Aug 2016</td>
<td>Mar 2018</td>
<td></td>
</tr>
<tr>
<td>Filed CEQA Statutory Exemption</td>
<td>Submitted 214-page Draft ND to State Lands</td>
<td></td>
</tr>
</tbody>
</table>
Project Budget

- Approved Lifetime Budget - $8.7 million
- Spent to Date - $5.4 million
  - Feasibility and Advanced Studies $4.2 million
  - Intake Testing Program $1.2 million
- Remaining Budget - $3.3 million
- Awarded Grant Funds - $1.4 million
Current Status

- Cessation of Intake Testing Program
  - Decreased need for alternative supply development
  - Permit delays and costs

- Explore opportunities to reassign state and federal grant funds awarded to the project

- No other activities related to a potential Camp Pendleton project are currently planned