Energy Task Force Update

Engineering & Operations Committee
March 23, 2017
Request for Letters of Interest Process

January 4, 2017
Advertised RFLOI

February 15, 2017
Received 19 Letter Responses

January 5, 2017
Issued Joint Press Release

March 2017
Meeting with Interested Parties

- Electric utilities
- Power offtakers
- Investors
- Developers
- Renewable energy companies
Meetings with Interested Parties

- Water Authority, City, and Task Force Members
- Dialogue with interested parties to determine potential role
- Categorization by potential business model

Potential Business Model Type

- Lease
- Partnership
- Self
Next Steps

March - RFLOI Process
- Finish Meetings with interested parties

April 4 Energy Task Force Meeting
- Discuss the results of the remaining meetings

April 27 - E&O Committee Meeting
- Discuss results of the meeting and potential next steps

May 25 - E&O Committee Meeting
- Recommend potential next steps for Board consideration
ACWA-CESA
Energy Storage Summit

March 30, 2017

- Pumped storage discussion and cases
- California Energy Commission Bulk Energy Storage Report
- AB33 – Quirk Keynote luncheon
- Centralized energy storage discussion and cases
- Flywheel case study
- Distributed energy storage and cases
- Solar paired with storage discussion
Energy Program Update
Engineering and Operations Committee
March 23, 2017

Kelly Rodgers
Energy Program Manager
Energy Management

- Water - Energy Nexus
- 2013 - Board adopted Energy Management Policy
- 2015 - Board approved addition of Energy Program
Existing Energy Facilities

- **4.5 Megawatt Rancho Peñasquitos Hydroelectric Facility**
- **40 MW Olivenhain-Hodges Pumped Storage Facility**
- **Combined 1.5 Megawatts Solar (3 Facilities)**
New Energy Initiatives

- 6 MW Floating Solar at Olivenhain
- 1+ MW Batteries
- 2.7 MW Inline Hydro Sites
- Up to 500 MW at San Vicente
- Other Generation/Storage
- 1 MW Wind Turbine System
Energy Procurement and Transmission

1.6 MW Hoover Power allocation

CAISO coordination
- Transmission grid

SDG&E coordination
- Distribution facilities
Regulatory Engagement

Energy Issues

Participate at
- State Level
- Federal Level

Engage with
- Member agencies
- Professional organizations
Summary

Continue
- Work in four areas
- Collaboration with other industry professionals

Discuss New Initiatives with Energy Task Force

Energy Management Policy Revisions

Provide future Energy Program updates
San Diego 12 Flow Control & Alvarado Hydroelectric Facilities Rehabilitation Project

Engineering & Operations Committee Meeting
March 23, 2017
Project Delivery

- San Diego 12 Flow Control Facility interim operation
- Long term flow control and hydroelectric facilities rehabilitation
Hydroelectric Rehabilitation

- Preliminary Analysis
  - Minimum Annual Revenue - $550k
  - Payback 9 to 13 years
- Design
  - Power Market Analysis
  - Equipment Alternatives
Flow Control Rehabilitation

- Planning
  - Capacity
  - Operations
- Design
  - Site Optimization
Professional Services Contract

- Infrastructure Engineering Corporation
- Design Services
  - Civil, Mechanical, Geotechnical, Structural, & Electrical Engineering
  - Power Market Analysis
  - Bidding Phase Support
  - Equipment Pre-Procurement and Construction Phase Support
Staff Recommendation

Authorize the General Manager to award a professional services contract for a not-to-exceed amount of $1,895,536 to Infrastructure Engineering Corporation to provide design services for the San Diego 12 Flow Control and Alvarado Hydroelectric Facilities Rehabilitation project for a duration of three years.
2017 Survey of Water Use Efficiency Programs

Water Planning Committee
March 23, 2017
Previous Actions

- 2010: Last surveyed member agencies
- 2012: Last update to WUE Principles
New Regulations

- Emergency regulations
- Governor’s long-term conservation framework
- Other:
  - Model Water Efficient Landscape Ordinance
  - Appliance standards
Process

- Seek member agency feedback on programs
- Analyze findings
- Support Board review and update to Water Use Efficiency Policy Principles
Timeline

Late Spring

State’s Release of Long-Term Framework

Late Summer

Feedback from Member Agencies

By Dec 2017

Update WUE Policy Principles
Update on Water Supply Conditions

Water Planning Committee
March 23, 2017

Tim Bombardier
Principal Water Resources Specialist
Northern Sierra Precipitation
8-Station Index

203% of Normal
(March 22, 2017)

Accumulated Precipitation (in)

Source: Department of Water Resources 2
Northern Sierra Snowpack

140% of Normal (March 22, 2017)

Source: Department of Water Resources
Lake Oroville Storage Volume
Major Reservoir State Water Project System

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<th>Month</th>
<th>Capacity</th>
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<tr>
<td>1-Oct</td>
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<td>1-Dec</td>
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<td>1-Sep</td>
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- 79% of Capacity
- 106% of Average (March 21, 2017)

Source: Department of Water Resources
San Luis Reservoir Storage Volume
Major Reservoir State Water Project System

San Luis Reservoir

Source: Department of Water Resources

CY 2017 current SWP Allocation: 60%

99% of Capacity
112% of Average (March 21, 2017)

Historical Average

WY 2016

WY 2017

Source: Department of Water Resources
Damage to intake structure due to heavy use

Extensive erosion around concrete intake structure
  - scoured “wings” of a 175-foot-wide concrete apron

Repairs to take about a month
Precipitation 122% of normal as of March 22, 2017

Snow water equivalent 123% of normal as of March 22, 2017
## Local Conditions

### Water Year 2017 Precipitation

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<tr>
<th>Station</th>
<th>Actual</th>
<th>% Normal</th>
<th>Actual</th>
<th>% Normal</th>
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<tr>
<td>Lindbergh Field</td>
<td>0.01 in.</td>
<td>&lt;1%</td>
<td>11.63 in.</td>
<td>134%</td>
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<tr>
<td>Ramona Airport</td>
<td>0.07 in.</td>
<td>3%</td>
<td>21.56 in.</td>
<td>165%</td>
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Total reservoir storage as of March 20th over 445,000 AF or 60 percent of storage capacity.
WaterSmart Landscape Efficiency Program Completion Report

Water Planning Committee
March 23, 2017
WSLEP Partners and Collaborators
Objectives

- Cost-effective water savings
- Public-private partnerships
- Technology upgrades
- Managing irrigation to a water budget / training
- High customer satisfaction
Common Irrigation Problems

- Disrepair & Leaks
- Excess Pressure
- Poor Irrigation Management
- Design Flaws
WSLEP Incentives

1. Site enrollment ........................................... $100 per site
2. Calculation of water savings potential .... $500 per site
3. Hardware procurement .................. up to $5,000 per site
4. Hardware installation .................... up to $5,000 per site
5. Irrigation management ..................... $1,200 per site
6. Performance fee (20% reduction) ....... $1,700 per site
7. Customer satisfaction survey ............. $100 per site

TOTAL up to $13,600 per site
Irrigation Management Requirements
Landscape Water Budget (AB 1881) – MWELO 2010 Version

MAWA = (ET₀) x (.62) x ((ETAF 0.7) x (Landscape Area)+(0.3)x(SLA))
ETWU = (ET₀) x (.62) x PF x HA/IE)

Maximum Applied Water Allowance
Gallons per year depends on ...

Estimated Total Water Usage in gallons
Should be less than MAWA
Target: 4-acre average per site

Irrigated Area Per Meter - Sample Map

SUNRIDGE

TOTAL IRRIGATED TURF: 95,180 SQ FT (2.18 ACRES)
TOTAL IRRIGATED SHRUB: 144,380 FT (3.31 ACRES)

3-YEAR HISTORICAL AVERAGE 7,681 H.C.F.
MAWA (ETo=.7, ETo=45.73) 6,355 H.C.F.
WATER SAVINGS POTENTIAL 1,306 H.C.F.
An elite performance-based landscape industry certification established in 2007

Used CLCA database to create landscape water budgets and track irrigation
WSLEP Implementation

9 Participating Contractors

- Benchmark Landscapes, Inc.  Rob Nutter
- Coastal Pacific Landscape Management  Tim Saunders
- Earthwise Industries  James Cothrine
- Heritage Landscape Services, Inc.  Ryan Hoover
- Landscapes USA  Mike Salceanu
- Nissho of California  Sean Lyon
- Treebeard Landscape  Tim Hillman
- Tierra Verde Resources, Inc.  James McDonald
- Western Gardens Landscaping, Inc.  Greg Vasilieff
WSLEP Implementation
20 Participating Sites

- Apartments (1)
- HOAs (12)
- HOA Owned Parks (2)
- Industrial Complex (1)
- Municipal Parks (4)
Reduction in Water Consumption by WSLEP Site (%)
Industry Recognition
Happy Participants!
2017 Public Opinion Poll Content

Legislation and Public Outreach Committee
March 23, 2017

Presented by Craig Balben,
Public Affairs Representative
Purpose

- Understand and track water-related views and knowledge
- Help focus outreach campaigns & test messages
- Track progress toward Business Plan objectives
Overview

2017 Survey:

- 1,000 adult residents
  - Split between phone & online
- Approx. 60 items
- Representative samples across county
- English & Spanish

Specific Water-Reducing Actions

- Shorter showers: 38%
- Reduce/skip outdoor watering: 32%
- Turn off taps promptly: 15%
- Full dishwasher/clothing loads: 13%
- Low water plants: 9%
- Reduce car washing: 8%
- Adjusted irrigation system/on timer: 8%
- Irrigate in off hours only: 8%
- Low flow toilets/less flushing: 8%
- Collect/reuse water: 4%
- Other: 12%
- Nothing: 9%
- (Unsure): 10%

*Multiple mentions accepted, therefore total may exceed 100%.
<table>
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<th>Action</th>
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<tr>
<td>Discuss topics, timeline with JPIC</td>
<td>Complete Mar. 6</td>
</tr>
<tr>
<td>Discuss topics, timeline with member agency managers</td>
<td>Complete Mar. 14</td>
</tr>
<tr>
<td>Discuss topics, timeline with PRCC</td>
<td>Complete Mar. 16</td>
</tr>
<tr>
<td>Discuss topics, timeline with LPO chair &amp; vice-chairs</td>
<td>Complete Mar. 21</td>
</tr>
<tr>
<td>Present topics, timeline to Board</td>
<td>Mar. 23</td>
</tr>
<tr>
<td>Go to field</td>
<td>Mid-April</td>
</tr>
<tr>
<td>Present poll results to board</td>
<td>May 25</td>
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Consistent Topics

- Current events, issues
- Diversification strategy
- Water use & water-use efficiency
- Value of water
- Water Authority projects & programs
Recommended Topics

- Value of water
  - Value of water & services provided by public water agencies
  - Rate affordability, rate increase tolerance for local supply development, infrastructure
- Paying for local vs. non-local projects
- Link between supply reliability & economic health
Recommended Topics

- Water supply issues
  - Current supply reliability and conditions
  - Willingness to continue conserving in 2017
- Water-use regulations
  - Long-term statewide
  - Statewide vs. local control
  - Acceptance of water budget
- Interest in classes
Recommended Topics

- Other current issues
  - Awareness and acceptance of potable reuse
  - Perception of water-use efficiency as a community ethic
  - Willingness to pay to visit Water Conservation Garden
Sacramento Update

Legislation and Public Outreach Committee
March 23, 2017
Legislature

- February 17: Deadline for bill introduction
  - 2,600 bills introduced

- Policy committee and budget subcommittee hearings now under way

- Spring recess begins April 6
Water Authority Sponsored Bills

- **AB 1323 (Weber)**
  - Stakeholder workgroup process through DWR to develop long-term water use efficiency standards
    - Referred to Assembly Water, Parks, and Wildlife Committee

- **SB 701 (Hueso)**
  - State general obligation bond measure to address state settlement obligations, including Salton Sea restoration
    - Hearing in Senate Natural Resources and Water Committee – March 28
    - Also referred to Senate Governance and Finance Committee
Elevated attention on Salton Sea restoration activities in 2017

- Legislative tour of Salton Sea and geothermal opportunities on March 16
- Administration’s release of 10-year, $383 million Salton Sea restoration plan
- Numerous bills introduced:
  - SB 615 (Hueso)
  - SB 701 (Hueso)
  - AB 798 (Garcia)
  - AB 1562 (Garcia)
At the LHC’s February 23 business meeting – Commissioner Scott Barnett suggested special districts should:

- Have a sunset date for their existence
- Be required to hold an election every 10 years to reauthorize existence

Prior to February 23 – LHC scheduled to take up final report on special districts in Spring 2017

- Now the report has been tabled
- Subsequent hearing on special districts will occur in Fall 2017
AB 805 – SANDAG Reform

- AB 805 – Assemblymember Lorena Gonzalez Fletcher
  - Would modify representation on SANDAG
  - Would create new financial controls and accountability measures, including employment of an independent auditor
  - Would authorize local transit operators to approach voters with a sales tax increase proposal to fund transit operations
  - Would add the following components to the SANDAG regional comprehensive plan:
    - Water supply
    - Air quality
    - Energy
    - Solid waste
    - Economy
  - Would retain existing statutory language requiring any water supply component to “be consistent with the urban water management plan and other adopted regional water facilities and supply plans of the San Diego County Water Authority.”
Long-Term Water Use Efficiency

Legislation and Public Outreach Committee
March 23, 2017

Presentation by:
Glenn Farrel, Government Relations Manager
Dana Friehauf, Water Resources Manager
Focus on two areas for urban water agencies:
  ◦ New water use targets
  ◦ Water shortage contingency planning

Comments submitted Dec 2017

Waiting for release of final Framework

Implementation will be through legislation and regulatory rulemaking
Legislative Activity

- 13 bills related to long-term water use efficiency introduced in the Legislature
  - 7 spot bills
  - Bills represent a wide range of policy perspectives

- Legislative timing
  - Policy committees beginning now
  - Uncertainty whether Governor’s framework will be addressed through existing legislation or through budget trailer bill
Exemption for recycled water use (potable and non-potable)
  ◦ Recycling is an efficient use of water (AB869(Rubio))

Provide alternative target setting methodologies

CII sector performance measures cannot negatively impact economy
  ◦ Form workgroup of experts to develop performance measures
Revisions to target calculation beyond 2025 must be through stakeholder process with legislative approval.

Potential lowering of standards or targets must take into account:

- Incentive for developing drought resilient supplies
- Unintended consequences, such as reduced wastewater flows
Long–term Water Use Efficiency Legislation
Letter to Governor – Key Points

- Support strengthening water use efficiency
  - Efficiency combined with new supply development is critical to sustainable water management and increasing regional self-reliance (*Governor 2016 Water Action Plan*)

- State must work collaboratively with stakeholders to update use targets (*Governor 2016 Water Action Plan*)
Time is needed to create consensus-based recommendations that can be advanced legislatively
  ◦ Bills introduced represent different stakeholder approaches to establishing new targets
  ◦ Too much is at stake to rush the process
  ◦ Significant ramifications to water agencies and customers they serve

AB 1323 would provide mechanism for thoughtful, deliberate, and meaningful process
Long-Term Water Use Efficiency Legislation

ACWA Working Group

- Develop legislative language for consideration by ACWA State Legislative Committee

- Two focus areas from Executive Order draft Framework
  1. Water Shortage Contingency Planning
     - Amend Urban Water Management Planning Act
     - Language approved by ACWA Legislative Committee
  2. New Water Use Efficiency Targets
     - Amend SBX7–7 (Water Conservation Act of 2009)
     - Finalized proposed language for consideration by ACWA Legislative Committee on March 24

- Language consistent with proposed legislative priorities
Water Authority Bill Sponsorship History

Legislation and Public Outreach Committee
March 23, 2017
Since 1991, Water Authority has had 37 sponsored bills signed into law

- Wide range of subject matter
- Statewide application to Water Authority–only application
- San Diego legislators
- Legislators from other regions
14 sponsored bills have addressed water conservation and water use efficiency

- Water Authority has been a statewide leader
- Most of the landmark water conservation measures have been sponsored by the Water Authority
  - Ultra low-flush toilets
  - Efficient plumbing fixtures
  - Efficient water-using appliances
  - Outdoor irrigation efficiency
  - Water meters
Water Supply Development

- 9 sponsored bills have addressed new water supply development
  - Quantification Settlement Agreement and water transfers
  - Desalination
  - Potable Reuse
Other Sponsored Legislation

- 14 sponsored measures addressing a variety of topics
  - Amendments to the County Water Authority Act to address operations, management, and fiscal practices of the Water Authority
  - Energy
  - Voting
  - Contracts
Questions?
A Long History of Innovation

Dedication to Innovation

INFRASTRUCTURE & OPERATIONS

The San Diego County Water Authority shapes the future with cutting-edge tools and programs to operate and maintain 310 miles of large-diameter pipelines and other facilities.

Inspections:
The Water Authority was among the first agencies in the U.S. to integrate three-dimensional laser scanning technology to assess steel water pipelines. It also deploys Remote Visual Inspection Technology to inspect hard-to-access pipeline types.

Environmental Stewardship:
Joining with wildlife agencies, the Water Authority manages a groundbreaking, long-term restoration strategy that allows the agency to build and maintain vital water infrastructure while supporting endangered species.

Dedication to Innovation

ENERGY

The San Diego County Water Authority shapes the future with creative initiatives to improve water-use efficiency through classes, incentives, online tools and other resources.

Citizens Water Academy:
The Citizens Water Academy is an engaging forum to educate and engage audiences about water issues through lectures, activities and field trips.

Sustainable Landscapes:
The San Diego Sustainable Landscapes Program promotes the adoption of environmentally-friendly landscapes.

On-Demand Videos:
An original series of online videos guides homeowners through the process of transforming conventional yards into water-efficient landscapes.

Classes:
WaterSmart Landscapes Workshop Program classes help promote their effectiveness in helping homeowners cut outdoor water use.
Innovation Program Drivers

- Innovation catalyst
- Focus on meeting future challenges
- Increased emphasis on business and process efficiency
- Core innovation to transformative innovation
Focus Areas of Innovation

- Culture
- Capability
- Creativity
- Collaboration
Culture – Objectives

• A work environment of curiosity, resiliency and support

• Active participation of all employees in innovation efforts

• Increased communication to support innovation

• Learn from innovation success and failures

SDCWA Vision Statement
Capability – Objectives

- Consistent planning across departments
- Department organization and staffing support objectives
- Staff training and development supports innovation and continuous improvement
- Focus on internal and external customer needs
Creativity – Objectives

- Commitment of top management to innovation
- Established process for problem or opportunity definition
- Piloting and prototyping
- Scaling and implementation
Collaboration – Objectives

• Collaborate within and across customer and stakeholder communities

• Seek shared resources and mission alignment

• Identify trends, best practices and communicate widely

• Further collaborative efforts and knowledge of others
Innovation Process

**Tools**
- Idea Submittal
  - Description of idea:
    - [Template]
- Research
  - Initial feasibility study and preliminary evaluation
- Pilot *
  - Pilot study, metrics and pilot team formation
- Portfolio
  - Project timing, resources and scaling identified
- Execution
  - Department champion oversees execution

**Process**
- **Concept**
  - Identification of problem or opportunity
- **Research**
  - Initial feasibility study and preliminary evaluation
- **Pilot **
  - Pilot study, metrics and pilot team formation
- **Portfolio**
  - Project timing, resources and scaling identified
- **Execution**
  - Department champion oversees execution

**Roles & Responsibility**
- **Employee**
  - Submits Needs Brief
- **Department**
  - Approve
  - Prioritize
  - Pilot or Seek $’s
- **Innovation Council**
  - Prioritize
  - Approve $ request

**Business Model Scorecard**

* May include assistance from accelerator/tech hub to complete

Access to Catalyst Fund Presentation by Champion to GM’s for Catalyst Fund approval

GM’s Office
- Approve
- Fund via Catalyst Fund

**Guardrails**

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<tbody>
<tr>
<td>Project Title</td>
<td>Description</td>
<td>Benefits</td>
<td>Business Model Scorecard</td>
<td>Metrics</td>
<td>Timeline</td>
<td>Planning</td>
<td>Management</td>
<td>Stakeholders</td>
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Innovation Process

**Idea Submittal**

- Employee submits needs brief
- Department approves and prioritizes
- Innovation council approves and seeks funds
- GM’s office approves and funds via Catalyst Fund

**Presentation by Champion to GM’s for Catalyst Fund approval**

**Access to Catalyst Fund**
Innovation Type

• **Core** – Innovation around core business or service already provided

• **Adjacent** – Of moderate risk, lead to substantial changes in core or services provided

• **Transformative** – Requires substantial resources outside normal course of business or service

62 Innovation Ideas Submitted

- Core: 47
- Adjacent: 12
- Transformative: 3
Innovation by Stage

- **Implemented** – Complete
- **Concept** – Suggestion Provided
- **Execution** – In Process
- **Research** – Further Study Required
- **Pilot** – Pilot Study Underway
- **Discontinued** – Will Not Pursue
# Innovation Program Highlights

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<th>Culture</th>
<th>Capability</th>
<th>Creativity</th>
<th>Collaboration</th>
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<tr>
<td>Green Team</td>
<td>Tools (Big Idea, Guardrails, Business Model Scorecard)</td>
<td>Water Pigeon AMI</td>
<td>Canadian Roadshow</td>
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<td>Lifestyle Team</td>
<td>Employee Growth &amp; Development Program (Training Portal)</td>
<td>Primo Wind – Micro Turbines</td>
<td>UK Roundtable</td>
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<td>Maureen Minute</td>
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<td>TOVWTP Residual Disposal Cost Reduction</td>
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<td>USBR Prize Challenge</td>
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Olivenhain Dam Micro-Wind Turbines
Optical Advanced Metering Infrastructure

- 90– Day pilot study with Valley Center, Oceanside, Del Mar, Escondido
- Initial proof of concept
- Lower equipment cost
- Faster installation
- 10 – 15% cost reduction for member agencies
California WaterFix Update & FEIR/EIS Review

Imported Water Committee
March 23, 2017

Amy Chen, Director of MWD Program
Final Environmental Impact Report/Supplemental Environmental Impact Statement

- December 22, 2016: Final EIR/EIS for California WaterFix released

- Water Authority staff analyzed environmental impacts and mitigation related to:
  - Engineering
  - Supply
  - Associated costs
Limited Response to Comments

- FEIR/EIS responded only to comments on environmental issues
  - Addressed comments on cost estimate methodology

- Could not provide detailed responses to comments on:
  - Project cost
  - Cost allocation
  - Need for water supply or reduced demand for Delta water
  - Conceptual Engineering Report
    - Property acquisitions
    - Project schedule
    - Project risks
Unaddressed Issues – Project Cost

- Current cost estimate is presented in $2014
- Delays in permitting, construction or from litigation will increase cost
- Difficult to opine on accuracy of current cost estimate due to uncertainty, complexity and magnitude

2014
- $14.9 billion (in 2014$)

2018
- Construction begins?
- Litigation?
- Permitting?

2028
- Earliest possible construction completion, assuming no litigation or other delays
Unaddressed Issues – Cost Allocation

- 45/55 Split between CVP and SWP?
- Will ag participate?
- SWP allocation among contractors?
- MWD – Allocation to Member Agencies
  - Volumetric?
  - Ad valorem taxes?
  - Current rates or legal rates?
Unaddressed Issues – Uncertainty

- Lack of permitting and operational certainty
  - 50-year permit process eliminated
- Lack adequate information to conduct due diligence on financing plan or risk
  - Concerns have reasonably been raised by MWD’s willingness to pay 100% of the purchase price and assumption of 100% of the risk of Delta islands
  - Buy now, find partners later presents undue risk for Southern CA
- MWD’s planned cost allocation based on current, illegal rates
Unaddressed Issues – Benefit

- Water Authority is taking less Delta water and plans on taking even lesser Delta supplies over time.

2015 Urban Water Management Plans
- MWD assumes SWP supply produces at a lower level without WaterFix under “Existing Supply Programs”
  - Water Authority plans to manage its MWD demand under “Existing Supply Programs”
Unanswered Questions

- How much will the project cost?
- What portion of the costs will San Diego be expected to pay?
- How much water will San Diego County receive?
- What other agencies will commit to pay for the project?
- How will San Diego County ratepayers be protected from paying an unfair share?
Next Steps

March/April
- ESA permits
- MWD member agencies already voting

Mid-2017
- Cost and financing plans to be presented by DWR
- ROD/NOD
- MWD board vote in??

Late 2017/Early 2018
- CWA Permits?

2018 and Beyond
- Construction?
Comparison of MWD and Member Agencies’ 2015 UWMPs

Imported Water Committee
March 23, 2017

Gordon Hess, Gordon Hess & Associates
Amy Chen, Director of MWD Program
Background

- Water Authority retained Gordon Hess and Associates to compare MWD and member agencies’ 2010 UWMPs
- Based on that report and MWD proposed spending, we have had increasing concern over impacts of reduced demand for MWD water
- Retained Hess to compare the 2015 UWMPs
Report Methodology

- Not an assessment of compliance with UWMP Act or DWR UWMP Guidelines
- Mainly used data contained in UWMPs
  - Most member agency UWMPs include total water supply and use, local supply, and MWD demand
    - When not stated, assumed MA would use available local supplies and calculated MWD demand as the difference
  - MWD’s “Sales Model 25” data used to determine individual MA demand used in MWD’s UWMP for average year
    - Accuracy within 0.12% – 0.21% of MWD’s total average year demand
Projected Demand for MWD Water Continues to Decline (Average-Year)

Data Source: MWD
MWD’s Estimated Surplus Supplies with Current Programs

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<th>2025</th>
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<tr>
<td>Single Dry-Year</td>
<td>579,000</td>
<td>620,000</td>
<td>667,000</td>
<td>745,000</td>
<td>740,000</td>
</tr>
<tr>
<td>Multiple Dry-Years</td>
<td>102,000</td>
<td>36,000</td>
<td>19,000</td>
<td>26,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

Data Source: MWD
MWD’s Estimated Surplus Supplies with Current Programs & Programs Under Development

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average-Year</td>
<td>1,651,000</td>
<td>1,732,000</td>
<td>2,085,000</td>
<td>2,208,000</td>
<td>2,245,000</td>
</tr>
<tr>
<td>Single Dry-Year</td>
<td>642,000</td>
<td>720,000</td>
<td>983,000</td>
<td>1,103,000</td>
<td>1,138,000</td>
</tr>
<tr>
<td>Multiple Dry-Years</td>
<td>145,000</td>
<td>116,000</td>
<td>223,000</td>
<td>271,000</td>
<td>288,000</td>
</tr>
</tbody>
</table>

Data Source: MWD
MWD’s Forecasted Demand for MWD Water Compared to Member Agencies’ Projection (Average Year)

Data Source: MWD and its 26 Member Agencies
MWD’s Forecasted Demand for MWD Water Compared to Member Agencies’ Projection (Single Dry-Year)

Data Source: MWD and its 26 Member Agencies
MWD’s Forecasted Demand for MWD Water Compared to Member Agencies’ Projection (Multiple-Dry-Year)

Data Source: MWD and its 26 Member Agencies

Acre-Feet

Year

2020 2025 2030 2035 2040

Total, Member Agencies' 2015 UWMPs
2015 MWD UWMP

Data Source: MWD and its 26 Member Agencies
Comparison of Average Year Demand on MWD in Year 2030

<table>
<thead>
<tr>
<th></th>
<th>Agency UWMP</th>
<th>MWD SM-25</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calleguas MWD</td>
<td>97,286</td>
<td>124,974</td>
<td>(27,688)</td>
</tr>
<tr>
<td>Eastern MWD</td>
<td>158,197</td>
<td>174,885</td>
<td>(16,688)</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>65,430</td>
<td>227,500</td>
<td>(162,070)</td>
</tr>
<tr>
<td>MWDOC</td>
<td>212,509</td>
<td>227,828</td>
<td>(15,319)</td>
</tr>
<tr>
<td>SDCWA</td>
<td>207,413</td>
<td>225,466</td>
<td>(18,053)</td>
</tr>
<tr>
<td>West Basin MWD</td>
<td>77,673</td>
<td>104,421</td>
<td>(26,748)</td>
</tr>
<tr>
<td>Western MWD</td>
<td>136,196</td>
<td>140,538</td>
<td>(4,342)</td>
</tr>
</tbody>
</table>

Data Source: MWD
### MA UWMP Projects and Programs not Included in MWD UWMP Projections

<table>
<thead>
<tr>
<th>Member Agency</th>
<th>Project or Program</th>
<th>Reduced Demand for MWD Water (Acre-feet per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beverly Hills</td>
<td>Water Enterprise Plan</td>
<td>1,700</td>
</tr>
<tr>
<td>Calleguas MWD</td>
<td>Conservation and Local Supply Development</td>
<td>Up to 9,142</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>LADWP’s Sustainability City Plan Conservation</td>
<td>Up to 108,000</td>
</tr>
<tr>
<td></td>
<td>Water Recycling</td>
<td>56,949 in 2040</td>
</tr>
<tr>
<td></td>
<td>Storm Water Capture</td>
<td>Up to 17,000</td>
</tr>
<tr>
<td>Santa Monica</td>
<td>Sustainable Water Master Plan</td>
<td>Estimated 5,000</td>
</tr>
<tr>
<td>Torrance</td>
<td>Goldsworthy Desalter Expansion</td>
<td>3,300</td>
</tr>
<tr>
<td>Upper San Gabriel Valley MWD</td>
<td>Reduced Demand for Replenishment Water</td>
<td>10,000</td>
</tr>
<tr>
<td>West Basin MWD</td>
<td>Seawater Desalination</td>
<td>21,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>Up to 232,091</td>
</tr>
</tbody>
</table>

**Data Source:** MWD Member Agencies
### Additional Potential MA UWMP Projects and Programs that Could Further Reduce Demand for MWD Water

<table>
<thead>
<tr>
<th>Member Agency</th>
<th>Project or Program</th>
<th>Reduced MWD Demand Acre-feet per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compton</td>
<td>Lease of Water Rights from Others</td>
<td>1,778</td>
</tr>
<tr>
<td>Eastern MWD</td>
<td>Enhanced Recharge and Recovery Program</td>
<td>45,000 (dry year)</td>
</tr>
<tr>
<td></td>
<td>Expected Future Water Supply Projects</td>
<td>24,500 to 27,500</td>
</tr>
<tr>
<td>Foothill MWD</td>
<td>Portion of PWP’s Recycled Water Program</td>
<td>Portion of 6,000</td>
</tr>
<tr>
<td>Glendale</td>
<td>Recycled Water</td>
<td>3,431</td>
</tr>
<tr>
<td>Long Beach</td>
<td>Lower SCAG Populations</td>
<td>Unknown</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>Water Transfers</td>
<td>40,000</td>
</tr>
<tr>
<td>MWDOC</td>
<td>Huntington Beach Seawater Desalination</td>
<td>56,000</td>
</tr>
<tr>
<td></td>
<td>Doheny Seawater Desalination</td>
<td>16,000</td>
</tr>
<tr>
<td></td>
<td>Prodo Basin</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td>Expanded Recycling</td>
<td>43,520</td>
</tr>
<tr>
<td></td>
<td>Groundwater, San Mateo and San Juan Basins</td>
<td>9,000</td>
</tr>
<tr>
<td></td>
<td>Cadiz Project (Santa Margarita WD)</td>
<td>Up to 15,000</td>
</tr>
<tr>
<td>SDCWA</td>
<td>Groundwater</td>
<td>3,600</td>
</tr>
<tr>
<td></td>
<td>Recycled Water</td>
<td>10,926</td>
</tr>
<tr>
<td></td>
<td>Potable Reuse</td>
<td>106,099</td>
</tr>
<tr>
<td></td>
<td>Desalination</td>
<td>16,800</td>
</tr>
<tr>
<td>San Marino</td>
<td>San Marino Groundwater Recovery</td>
<td>2,500</td>
</tr>
<tr>
<td>Three Valleys MWD</td>
<td>Additional Wells</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>Recycled Water</td>
<td>8,000 to 10,000</td>
</tr>
<tr>
<td>Upper San Gabriel Valley MWD</td>
<td>Direct Reuse from LA Sanitation District</td>
<td>Unknown</td>
</tr>
<tr>
<td>Western MWD</td>
<td>Riverside North Aquifer Storage and Recovery</td>
<td>2,000</td>
</tr>
<tr>
<td></td>
<td>Dry Year Conjunctive Use Programs</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>Expand Chino Desalter</td>
<td>4,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>Up to 428,656</strong></td>
</tr>
</tbody>
</table>

*Data Source: MWD Member Agencies*
Key Findings & Conclusions

- MWD’s forecasts for member agencies’ demand for MWD water are substantially higher than member agencies’ forecasts of demand for MWD water in average years
  - Similar phenomenon in single–dry and multiple–dry years
- Trends are likely to continue
  - New conservation mandates are not accounted for
  - New SCAG and SANDAG population projections are lower than used in 2015 UMWPs
- MWD’s 2015 UWMP demonstrates that its current supply capability is sufficient to meet forecasted demand for MWD water
Impact of Reduced Sales to Rates
MWD’s Flawed Assumptions and Unnecessary Spending Will Impact Rates

MWD Implements LACSD Recycled Water Program

* MWD often describes its rates in terms of “averages,” but does not impose “average” rates. Rate impacts depend on a number of variables including customer usage patterns and how usage patterns are or are not accounted for in MWD’s rates and charges. “Average” rates as shown here are calculated based on total revenues including taxes and are used solely to demonstrate a range of impacts resulting from MWD’s flawed planning assumptions and unnecessary spending.
Use of Water Authority’s Semitropic Water Bank Recharge Capacity

Imported Water Committee
March 23, 2017

Amy Chen, Director of MWD Program
History of Water Authority’s Out of Region Groundwater Programs

Semitropic Water Storage District
OWB: 30,000 AF
SWRU: 15,000 AF
AVWB: 25,000 AF
### Out-of-Region Groundwater Programs

<table>
<thead>
<tr>
<th></th>
<th>Storage Capacity (AF)</th>
<th>Annual Put (AF)</th>
<th>Annual Take (AF)</th>
<th>Water Currently Stored in Bank (AF)</th>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Semitropic (Original Water Bank)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30,000</td>
<td>2,715</td>
<td>4,200</td>
<td>16,117</td>
<td>Entitlement Exchange Guarantee of 3% of Semitropic’s SWP Allocation</td>
</tr>
<tr>
<td><strong>Semitropic-Rosamond WBA (Stored Water Recovery Unit)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15,000</td>
<td>1,666</td>
<td>5,000</td>
<td>None</td>
<td>--</td>
</tr>
<tr>
<td><strong>Semitropic-Rosamond WBA (Antelope Valley Water Bank)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25,000</td>
<td>5,000</td>
<td>5,000</td>
<td>None</td>
<td>--</td>
</tr>
</tbody>
</table>
2017 Assessment/Opportunities

- Storage in Central Valley not anticipated
  - Water Authority and its member agencies have sufficient storage capacity in region
- Other entities with supplies are interested in utilizing Water Authority’s 2017 storage capacity rights
  - Recharge capacity only and/or
  - Storage
Homer, LLC

- Banking partner in Semitropic Bank
- In need for recharge capacity only
- Offer
  - Nonrefundable Deposit: $109,525 ($25/af of recharge capacity)
  - Use fee: $50/af actual recharge capacity used
- Potential total payment: $328,575
Under Semitropic–Rosamond Agreement we have right to assign shares, with consent.

Under Vidler assigned rights we have ability to assign rights with consent or subcontract benefits.

Proposed agreement with Homer is to assign or subcontract shares and/or rights (as applicable) for 2017, with Water Bank consent.
Recommendation

- Authorize the General Manager to enter into a recharge capacity use agreement with Homer, LLC to allow use of Water Authority’s recharge capacity in Semitropic Water Storage District’s Stored Water Recovery Unit and Original Water Bank in calendar year 2017 via assignment of shares and/or subcontracting as applicable, subject to Water Bank consent; and
- Associated CEQA findings