Long-Range Demand Forecast and 2020 Urban Water Management Plan Update

Water Planning and Environmental Committee
January 23, 2020

Kelley Gage, Director of Water Resources
Agenda

1. 2020 UWMP & Coordinated Planning Process Overview - Kelley Gage
2. San Diego Association of Governments - David Tedrow
3. Long-Range Water Demand Forecast - Tim Bombardier
4. Demand Forecast Model Update - Lisa Krentz
5. 2020 UWMP Overview - Alexi Schnell
6. Timeline of Next Steps - Kelley Gage
2020 Urban Water Management Plan (UWMP)

- UWMP update required by law every five years
  - Next plan due - July 1, 2021

- Identifies the projected water resources mix for the San Diego Region

- Purpose and importance continues to grow since first required 35 years ago

- Required to be eligible to receive funding or drought assistance from the state
Legislative Changes for 2020 UWMP

- Senate Bill 606 & Assembly Bill 1668
  - Signed by Governor in 2018
  - Provides for long-term improvements in water conservation and drought planning
  - Implementation details still under development
  - Stakeholder workgroups formed August 2019
  - 2020 UWMP will require Water Shortage Contingency Plan
Regional Planning Partnership

- 1988 Proposition C tasked the San Diego Association of Governments (SANDAG) with developing regional growth management strategy

- The regional strategy includes a water element to coordinate planning for water

- SANDAG and the Water Authority entered into a Memorandum of Agreement in 1992
Land-Use and Water Planning Coordination

- Water Authority to use SANDAG’s regional growth forecast for water demand forecasting and supply planning purposes

- Provide supply availability information for inclusion in SANDAG’s regional strategy
Integrated Planning Process

- Cities/County General Plans
- SANDAG’s Regional Growth Forecast
- Projected Water Demands
- Urban Water Management Plan
  - SANDAG Regional Plan
  - Water Assessment (SB 610)
  - Written Verification (SB 221)
  - Cities/County Plans & Policies
San Diego Association of Governments (SANDAG)
SANDAG Regional Forecast

San Diego County Water Authority
January 23, 2020

David Tedrow
Manager
Economic and Demographic Analysis
Forum for regional decision-making:

- Builds consensus
- Makes strategic plans
- Obtains and allocates resources
- Plans, engineers, builds public transportation
Regional Plan

- Provides a single vision for the San Diego region
- Contains an implementation program to make the vision a reality
- Updated every four years
- Built-in collaboration:
  - The 18 cities
  - County of San Diego
  - Regional, state, and federal partners
Regional Forecast

- Foundation for the regional plan
- Population and employment estimates
- Current year to 2050
- From region down to block

Uses
- Determine the transportation network required
- Ensures planning development based on future needs
Forecast Build – Input Data

- **Total Population for the Region**
  - California Department of Finance
  - For each year through 2050
  - By age, sex, race/ethnicity

- **Housing Capacity**
  - Local jurisdictions and unincorporated county
  - Housing units
  - Land usage
  - General plans
Land Use and Capacity Information

- **Office (low-rise)**: 0 Dwelling Units
- **Single Family Multiple Units**: 17 Dwelling Units
- **Residential Under Construction**: 0 Dwelling Units
Forecast Build - Development

- Calculate and Create Households
- Determine Number of Housing Units
- Allocate to areas within the region
- Determine number and location of jobs by industry
- Allocate all down to block level
Changes in this version

- Housing structure definition
  - Single Family Attached
  - Single Family Detached
- Parcel level resolution
- Employment Classification
  - Public/private to industry
Changes in this version (continued)

- Begins to address housing crisis
- Consistent with Regional Housing Needs Assessment (RHNA) findings
- Consistent with what is needed not necessarily what will happen
San Diego - Population by Year
Two versions of forecast (2015, 18)

Preliminary data, not final forecast
San Diego Region
Housing Units by Year

Forecast Version 2018

Preliminary data, not final forecast
## Next Steps

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar-2020</td>
<td>SANDAG Board Presentation</td>
</tr>
<tr>
<td>Spring 2020</td>
<td>External presentations / messaging</td>
</tr>
<tr>
<td>October 2020</td>
<td>Transportation network finalized</td>
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</tbody>
</table>
Long-Range Water Demand Forecast
Coordinated Long-Range Planning

Urban Water Management Plan

Demand Forecast

Facilities Master Plan

Long-Range Financial Plan
Key Baseline Forecast Update Activities

- Survey tool development and data collection
- Modeling plan preparation
- Model update, testing and calibration
- Demand forecast scenarios development
  - Baseline
  - Multiple dry years
  - Climate change
- Report generation
Long-Range Water Demand Forecast Update

San Diego County Water Authority
January 23, 2020

Lisa Krentz
Associate
Background

- Hazen and Sawyer Environmental Engineers and Scientist founded in 1951
- National engineering firm headquartered in New York
- Project team possess over 2 decades of integrated water demand and supply planning experience
Baseline Demand Forecast Development

- Water Authority baseline forecast = sum of member agency baseline projections

- Forecast generated by major sector
  - Single-family
  - Multi-family
  - Non-residential
  - Agriculture
Modeling and Forecasting Challenges

- Recent statewide emergency water use restrictions significantly impacted water demands
- Water use restrictions delayed recovery process from the Great Recession and earlier drought period
- Changes in SANDAG’s forecasting methodology
  - Some variables estimated differently
  - Others no longer produced
Baseline Forecast Development Process

1. **Member Agency Water Use Survey**
2. **Historic SANDAG Demographics**
3. **Historic Price and Weather Data**

These inputs are processed to create a **Water Use Modeling Database**

Next, the **Development of Predictive Models** is conducted

The predictive models are then **Tested and Calibrated**

The calibrated models produce a **SANDAG Regional Forecast**

This forecast is used to create the **Preliminary Baseline Water Demand Forecast**
"Rate of Use times Driver" Methodology

Water Use = Driver Count * Rate of Use per Driver

<table>
<thead>
<tr>
<th>Sector</th>
<th>Driver Count</th>
<th>Rate of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family (SF)</td>
<td>SF Households</td>
<td>Gallons per HH/Day</td>
</tr>
<tr>
<td>Multi-family (MF)</td>
<td>MF Households</td>
<td>Gallons per HH/Day</td>
</tr>
<tr>
<td>Nonresidential (NR)</td>
<td>NR Employment</td>
<td>Gallons per Employee/Day</td>
</tr>
</tbody>
</table>
Econometric Modeling Approach

- Incorporates price elasticity as a forecast variable
- Impact of water rates, land use, economics, and demographics on demand
- Model allows for development of alternative demand scenarios based on:
  - Dry/wet years
  - Climate change
Where are we now?

- Data collection/database development completed
  - Member agency water use data and rates through 2018
  - Drought/water use restriction response measures
  - Historical weather data
  - SANDAG demographic and socioeconomic data
- Modeling Plan completed
- Weather index evaluated
Task Status

Finalize, Test and Calibrate Sectoral Models
- Ongoing

Normal-Year Baseline Projections
- Preparation of forecast inputs currently underway.

Weather and Climate Change Scenarios
- Scenario development to follow normal-year baseline projections.

Final Model Testing, Refinements and Reporting
- Pending completion of Draft Baseline and Scenario Projections.
2020 Urban Water Management Plan
Preparation of the Water Authority’s 2020 UWMP

- Preliminary work commenced October 2018
  - Member agency workgroup formed
  - Long-Range Demand Forecast update started
  - Water Authority staff engaged in DWR workgroup process to implement new legislative requirements

- 2020 UWMP development effort expanding
UWMP’s Six Main Elements

- Demand Forecast
  - Econometric Model utilizing SANDAG Regional Growth Forecast

- Water-Use Efficiency
  - Include passive and active savings

- Water Supplies
  - Water Authority and member agency supplies

- Water Resource Mix
  - Resource mix to meet demands in normal and dry water years

- Scenario Planning
  - Process to manage supply uncertainties associated with resource mix

- Shortage Planning
  - Contingency analysis to address shortages due to drought, catastrophe or other event
Projected Demands with Water Use Efficiency

(Illustrative Purposes Only)
Supply projects categorized into three groups

<table>
<thead>
<tr>
<th>Project Category</th>
<th>General Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verifiable</td>
<td>Adequate documentation on implementation: CEQA certification, permits satisfied, contracts executed</td>
</tr>
<tr>
<td>Additional Planned</td>
<td>Actively being pursued and planning effort currently being funded</td>
</tr>
<tr>
<td>Conceptual</td>
<td>Project in conceptual, pre-feasibility phase</td>
</tr>
</tbody>
</table>
Developing the Regional Water Resources Mix

(Illustrative Purposes Only)

Projected Demands w/ Water Use Efficiency

- **MWD**
- **Water Authority CDP**
- **Water Authority QSA Supplies**
- **Member Agency Supplies**
Major Steps in Scenario Planning Process

Projected Resources Mix
- Develop in coordination with member agencies

Uncertainty Scenarios
- Based on critical uncertainties
- Risk assessment of resources mix
- Identify “supply gap”

Potential Strategies
- Qualitative and quantitative
- Manage uncertainties
- Fill potential “supply gap”

Key Tracking Metrics
- Metrics to track implementation of resource mix and potential need for strategies
- Avoid over investment
Professional Services Contract with Woodard & Curran, Inc. for Urban Water Management Plan Support Services

Water Planning and Environmental Committee
January 23, 2020

Alexi Schnell
Water Resources Specialist
Urban Water Management Plan (UWMP) Background

- Long-term water supply planning document
  - Required by Water Code every five years
  - Scope and importance has grown since first required 35 years ago
  - Senate Bill 606 and Assembly Bill 1668 expanded 2020 UWMP requirements

- Due to California Department of Water Resources (DWR) by July 1, 2021
Scope of Work

- Provide professional and technical support services for preparation of the 2020 UWMP, including:
  - Technical review to ensure compliance with the Water Code and DWR’s 2020 UWMP Guidelines
  - Technical editing of draft versions of the UWMP
  - Preparation of responses to public comments
  - Preparation of supporting materials, including tables and figures

- Contract term through June 30, 2021
Contractor Selection Process

- Request for proposals (RFP) issued in October 2019
  - Advertised and emailed to 173 firms

- Pre-proposal meeting in November 2019
  - Attended by six firms

- Two firms submitted written proposals
  - Scored by three-member panel
  - Recommended both firms receive in-person interviews

- Interviews held in December 2019
Results of Selection Process

- Recommend Woodard & Curran, Inc.
  - Ranked first based on written proposals and interviews
  - Extensive experience preparing UWMPs
    - Prepared UWMPs for seven Water Authority member agencies
    - Knowledge of San Diego region water issues
    - Experience preparing San Diego Integrated Regional Water Management Plan
  - Small Contractor Outreach and Opportunities Program (SCOOP) participation
    - Project team includes CityWorks People + Places, Inc.
Authorize execution of a professional services contract with Woodard & Curran, Inc. to provide 2020 Urban Water Management Plan support services in an amount not-to-exceed $250,000.
Update on the State’s Water Resiliency Portfolio

Water Planning and Environmental Committee
January 23, 2020

Elizabeth Lovsted, PE
Water Resources Manager
Background

- April 29, 2019, Executive Order N-10-19 requires state agencies to develop a water resiliency portfolio
- Statewide effort to collect stakeholder input
  - Public listening sessions
  - 100+ comment letters
- Draft released on January 3, 2020
San Diego Water Infrastructure Tour

- July 18, 2019, state agency leaders tour water infrastructure in San Diego County
  - Natural Resources Secretary Wade Crowfoot
  - Deputy Natural Resources Secretary Thomas Gibson
  - State Department of Food and Agriculture Secretary Karen Ross
  - State Water Resources Board Chair E. Joaquin Esquivel
Reliability vs. Resiliency

- **Reliability**: the ability to perform consistently and well over time
- **Resiliency**: the capacity to recover from a difficult or unforeseen event
- The Water Resiliency Portfolio evaluates resiliency in:
  - Supply reliability
  - Water quality
  - Environmental conditions
  - Flood risks
  - Ecosystem viability
  - Affordability
  - Agricultural sustainability
Overview

- Builds on state and local initiatives already underway
  - Clean, safe drinking water
  - Voluntary agreements
  - Single tunnel conveyance
  - Sustainable Groundwater Management Act
  - Water use efficiency legislation
- Regional networks, state support
  - No “one size fits all”
  - Regional approach
- Implementation will depend upon availability of resources
## Portfolio Elements

<table>
<thead>
<tr>
<th>Maintain and Diversify Water Supplies</th>
<th>Protect and Enhance Natural Systems</th>
<th>Build Connections</th>
<th>Be Prepared</th>
<th>Executing this Portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce reliance on any one source, enable flexibility</td>
<td>Integration of environmental protection and enhancement into water management</td>
<td>Promoting connectivity throughout the water community</td>
<td>Water management is risk management, we must adapt</td>
<td>Actions will require leadership, oversight, funding and cooperation</td>
</tr>
<tr>
<td>Recommendations on safe and affordable drinking water, water use efficiency, groundwater, recycled water, stormwater, desalination, surface storage, pollution reduction</td>
<td>Recommendations on protecting fish and wildlife, aquatic habitats, wetlands, multi-benefit projects, wildlife refuges, watersheds, agricultural, Salton Sea, Delta</td>
<td>Recommendations on inter-regional conveyance, integrated strategies, water transfers, water data, science, innovation and technology</td>
<td>Recommendations on flood patterns, drought, weather and climate change</td>
<td>Recommendations on state agency coordination, non-state partner coordination, federal funding and cooperation, integrate actions, tracking and reporting</td>
</tr>
<tr>
<td>8 goals, 36 actions</td>
<td>10 goals, 37 actions</td>
<td>6 goals, 27 actions</td>
<td>3 goals, 17 actions</td>
<td>5 goals, 16 actions</td>
</tr>
</tbody>
</table>
Key Recommended Actions

▪ 18.3: Requirement to include information about reducing reliance on water from Delta-based management plans
▪ 19.4: Water Commission to assess state role in financing regional conveyance projects
▪ 20.1: Build on Integrated Regional Water Management Program and other regional efforts
▪ 29.1: Establish regular dialogue with local and regional water leaders
Moving Forward

- Comments Due February 7, 2020
  - Develop Water Authority comment letter on draft Water Resiliency Portfolio
  - Coordinate with stakeholder associations submitting comments
Construction Contract for the Mission Trails Flow Regulatory Structure II and Flow Control Facility Project

Engineering & Operations Committee
January 23, 2020

Brent Fountain
Principal Engineer
Community Outreach

- Mission Trails Regional Park Citizens Advisory Committee
- Mission Trails Regional Park Task Force
- Tierrasanta Community Council
## Bid Summary

Bid Range: $26.5 to $32.5 Million

<table>
<thead>
<tr>
<th>NO.</th>
<th>GENERAL CONTRACTOR</th>
<th>BID AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OHL USA, Inc.</td>
<td>$28,382,746</td>
</tr>
<tr>
<td>2</td>
<td>Pacific Hydrotech Corporation</td>
<td>$28,437,200</td>
</tr>
<tr>
<td>3</td>
<td>Steve P. Rados, Inc.</td>
<td>$31,421,520</td>
</tr>
<tr>
<td>4</td>
<td>Flatiron West, Inc.</td>
<td>$32,984,120</td>
</tr>
<tr>
<td>5</td>
<td>Kiewit Infrastructure West, Inc.</td>
<td>$33,894,035</td>
</tr>
<tr>
<td>6</td>
<td>J.F. Shea Construction, Inc.</td>
<td>$35,392,510</td>
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</tbody>
</table>
Project Schedule

2020
- Aqueduct Isolation Shutdown
- Complete FRS & Flow Control Facility

2021
- Aqueduct Activation Shutdown

2022
- Complete Construction
## Project Budget Increase

<table>
<thead>
<tr>
<th>ITEM</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopted FY20/21 Project Budget</td>
<td>$42.5M</td>
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<tr>
<td>Increases</td>
<td></td>
</tr>
<tr>
<td>Construction Work</td>
<td>$2.2M</td>
</tr>
<tr>
<td>Construction Management</td>
<td>$2.3M</td>
</tr>
<tr>
<td>Construction Contingencies</td>
<td>$1.3M</td>
</tr>
<tr>
<td>Proposed Project Budget</td>
<td>$48.3M</td>
</tr>
</tbody>
</table>
Recommendation

- Transfer $5,863,053 within the Capital Improvement Program Lifetime Budget from Pipeline 6 to the Mission Trails Flow Regulatory Structure (FRS) II/Lake Murray Control Valve project for an overall net zero impact to the Capital Improvement Program.

- Authorize the General Manager to award a construction contract to OHL USA, Inc. DBA Group OHL North America in the amount of $28,382,746 for the Mission Trails Flow Regulatory Structure II and Flow Control Facility project.
Contract for Pipelines Seismic Vulnerability Assessment and Repair Time Estimates

Engineering & Operations Committee
January 23, 2020

Jeff Shoaf
Principal Engineer
Our Pipelines/Earthquake Fault Zones
Need for Re-Assessment

- 1993 Seismic Study
  - ✓ M7.5 on Elsinore Fault: 119 breaks
  - ✓ M7.0 on Rose Canyon: 51 breaks

- Expected Outages
  - ✓ 75% repaired in two months
  - ✓ 100% repaired in six months

- Emergency Storage Project in operation
Need for Re-Assessment

- Significant changes since 1993:
  - Regional seismicity
  - Seismic hazards
    - Fault Rupture
    - Landslides
    - Liquefaction
  - Aqueduct improvements

- Evaluate and recommend mitigation alternatives
Consultant Evaluation and Selection

- Request for Proposal advertised on October 15, 2019

- Three proposals received by:
  - InfraTerra, Inc.
  - G&E Engineering Systems, Inc.
  - Kleinfelder, Inc.

- Consultants were evaluated on:
  - Experience with seismic vulnerability assessment
  - Understanding of the scope of work
  - Approach and resources for the work
  - Past Performance
InfraTerra, Inc.

- InfraTerra, Inc. team includes:
  - GeoSyntec Consultants (San Diego)
  - Dr. Thomas Rockwell (San Diego State University)
  - Dr. Thomas O’Rouke (Cornell University)

- Past Performance includes similar work with:
  - Elsinore Valley Municipal Water District
  - Sonoma County Water District
  - Contra Costa County Water District
  - Portland Water Bureau
  - Seattle Public Utilities

- Certified Small Business Enterprise
Staff Recommendation

- Authorize the General Manager to award a professional services contract to InfraTerra, Inc. for $724,939 to perform pipelines seismic vulnerability assessment and repair time estimates.
Pension Funding Update and OPEB Funding Policy Adoption

Administrative and Finance Committee
January 23, 2020

Lisa Marie Harris, Director of Finance/Treasurer
David Gore, Senior Management Analyst
Pension Plan Funding Policy Recap

- On October 25, 2018 the Board approved a Pension Plan Funding Policy that:
  - Set a Funded Target Ratio of 75%-85% (Presently at 76%)
  - Twenty year period to achieve
  - Contribute $1-2 million annually as supplemental payments
  - Contribute directly to CalPERS
  - $1 million in Additional Discretionary Payments budgeted in both 2020 and 2021.
CalPERS Funded Ratio History & ADPs

Target Funded Range

Note: $1M equates to ~.4% increase in funded ratio.
OPEB Funded Ratio

Target Funded Range

2015 2016 2017 2018 Projected 2019

$1.5 M

Target Funded Range

Our Region’s Trusted Water Leader
San Diego County Water Authority
Establish the Funding Level - Set funded Target Range of 90% to 110%

- Range will accommodate market return swings

Funding Vehicle - Continue to utilize the CERBT OPEB Trust

Funding Source - Budget the OPEB Actuarially Determined Contribution (ADC)

- If the OPEB Trust is below 110% funded, make the budgeted payment to the OPEB fund.
- If the Trust is funded in excess of 110%, make a supplemental payment to CalPERS from the budgeted ADC as recommended by the Audit Committee
- Maximum annual draw approximately $175 thousand*

* $175 thousand = $425 thousand in interest savings in pension plan
Staff Recommendations

- Set OPEB funded target ratio range at 90% to 110%
- Continue to utilize the CERBT OPEB Trust
- Draw down account to 110% funded, using excess funds as CalPERS ADP’s
- Budget the Actuarially Determined Contribution to maintain 110% Funded Ratio
Introduction

- Why is this issue important to Board Members?
  - Legal background
  - Certifications and filings
  - Member Agency bond transactions
  - Post-issuance securities compliance
Applicable Antifraud Rules - Section 17(a) and Rule 10b-5

- Section 17(a): Employment of Manipulative and Deceptive Practices:

  “It shall be unlawful for any person in the offer or sale of any securities…, directly or indirectly—

  (1) To employ any device, scheme, or artifice to defraud, or
  (2) To obtain money or property by means of any untrue statement of a material fact or any omission to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading; or
  (3) To engage in any transaction, practice, or course of business which operates or would operate as a fraud or deceit upon the purchaser.”
Rule 10b-5: Employment of Manipulative and Deceptive Practices:

“It shall be unlawful for any person, directly or indirectly…,
(a) To employ any device, scheme, or artifice to defraud,
(b) To make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading, or
(c) To engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security.”
Consequences for Violation of Antifraud Rules

- Violation of the requirements of Section 17(a) or Rule 10b-5 could result in serious consequences, including criminal penalties.

- Consequences are not limited to the issuer (Board members and Member Agency personnel may be liable)
Materiality

A statement or omission is material if there is a substantial likelihood that a reasonable (not “any”) investor would (not “could”) consider it important (not “interesting”) in making the decision to purchase or sell the securities.
In 2012, the SEC highlighted failures in the due diligence process for tax-exempt securities.

Municipalities Continuing Disclosure Cooperation (“MCDC”) initiative.

In 2016, the SEC issued 71 cease-and-desist orders in response to voluntary self-reporting under the MCDC initiative.
SEC Municipal Enforcement

- The SEC often imposes civil penalties against municipal officials
  - Montebello Unified School District: $10,000 penalty against superintendent of school district
  - City of Allen Park, MI: $10,000 penalty against former mayor
  - Macon-Bibb County, GA: $10,000 penalty against county manager
  - Ramapo, NY: $327,000 penalty against town supervisor
Penalties may apply where:
- The Board authorizes a disclosure it knows to be false or does not raise material issues or areas of concern within its knowledge that could affect the security for the Bonds
- There is negligence but no intent to deceive
Initial or Primary Market Disclosure

- Initial disclosure during tax-exempt debt transactions
  - Due diligence
  - Public Statements by the Member Agencies
  - Investor and Ratings Presentations
Initial or Primary Market Disclosure

- Official Statement
  - Purpose of the Official Statement
  - Contents of the Official Statement
  - Preparation of the Official Statement and Internal Controls
  - Board Approval Process

- Questions to consider when approving an Official Statement
Continuing Disclosure

- Annual Continuing Disclosure Reports
- Event Disclosure
  - 2017 Amendment
- Investor Inquiries
- Fair Disclosure
Event Disclosure

Events that Always Require Notification under Rule 15c2-12

- Principal and interest payment delinquencies;
- Unscheduled draws on debt service reserves reflecting financial difficulties;
- Unscheduled draws on credit enhancements reflecting financial difficulties;
- Substitution of credit or liquidity providers, or their failure to perform;
- Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determination of taxability or of a Notice of Proposed Issue (IRS Form 5701 TEB);
- Tender offers;
- Defeasances;
- Rating changes;
- Bankruptcy, insolvency, receivership or similar event of a Member Agency; or
- Default, event of acceleration, termination event, modification of terms or other similar events under a “financial obligation”, if such event reflects financial difficulties.
Event Disclosure

Events that Require Notification under Rule 15c2-12 if Material

- Non-payment related defaults;
- Unless described in the other column, other material notices or determinations by the Internal Revenue Service with respect to the tax status of the Securities or other material events affecting the tax status of the Securities;
- Modifications to rights of the owners of the Securities;
- Bond calls;
- Release, substitution or sale of property securing repayment of the Securities;
- The consummation of a merger, consolidation, or acquisition involving the Member Agency or the sale of all or substantially all of the assets of the Member Agency, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms;
- Appointment of a successor or additional trustee or the change of name of a trustee; or
- Incurrence of a “financial obligation” or agreement to covenants, events of default, remedies, priority rights or other similar terms of a financial obligation, any of which affect security holders.
Obligated Persons and Issuers Should Establish and Follow Disclosure Process

1. Establish a disclosure team
2. Each year review the requirements in each Continuing Disclosure Undertaking (CDU)
3. Gather the required information
4. Coordinate, review and approve
5. Consider whether to include information beyond what is specified in the CDU
6. Consider voluntary filings in appropriate circumstances
7. Finalize the information for filing with EMMA
- Questions/discussion/comments
For additional information, contact:

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Senior Partner
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Los Angeles, California 90067
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MWD’s Demand Management Cost Methodology Update

Imported Water Committee
January 23, 2020

Liz Mendelson-Goossens
Senior Water Resources Specialist
Refresh: Phase 1, May-Aug. 2019

- Peter Mayer, Water Demand Management
- July 2019:
  - Mayer proposes cost avoidance approach
  - ~70% demand costs allocated to transportation services
- August 2019: Mayer’s written report presented
Refesh: Phase 2, began Sept. 2019

- Rick Giardina, Raftelis Financial Consultants, Inc.
- Does not verify/review Mayer’s cost allocation approach
- Presents 3 main rate design alternatives

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Based on Mayer’s Rec.</th>
<th>Cost Recovery Component</th>
<th>Approx. % of DM Costs Assigned</th>
<th>Variable or Fixed</th>
<th>Approx. % of DM Costs Assigned to Transportation</th>
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<tbody>
<tr>
<td>#1</td>
<td>✓</td>
<td>Tier 1 Supply</td>
<td>25%</td>
<td>Variable</td>
<td>75%</td>
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<td>System Access Rate</td>
<td>75%</td>
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<td>#2</td>
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<td>Tier 1 Supply</td>
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<td>Variable</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>System Access Rate</td>
<td>50%</td>
<td>Variable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>System Power Rate</td>
<td>13%</td>
<td>Variable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Readiness-to-Serve Charge</td>
<td>10%</td>
<td>Fixed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacity Charge</td>
<td>2%</td>
<td>Fixed</td>
<td></td>
</tr>
<tr>
<td>#3a</td>
<td>✓</td>
<td>New Charge/Rate</td>
<td>100%</td>
<td>Fixed</td>
<td>70-75%</td>
</tr>
<tr>
<td>#3b</td>
<td>✗</td>
<td>New Charge/Rate</td>
<td>100%</td>
<td>Fixed</td>
<td>TBD</td>
</tr>
</tbody>
</table>
Phase 2: Continued through Dec. 2019

- **Nov. 2019**
  - Giardina presents alternatives again
  - Board feedback:
    - Process concerns: leaning towards fixed charges
    - Timing: wait for 2020 IRP findings
    - Request: maintain “status quo” for 2021 and 2022 rates and charges

- **Dec. 2019**
  - Staff recommendation:
    - Not “incorporate” any DM cost recovery mechanism in 2021 and 2022 rates and charges
    - Use Water Stewardship Fund balance to fund 2021 and 2022 demand management costs
    - Approved unanimously by Board
  - Staff presented more concrete alternatives
## Demand Management Cost Recovery Alternatives

<table>
<thead>
<tr>
<th>Cost Recovery Component</th>
<th>Approx % of DM Costs</th>
<th>Billing Determinant</th>
<th>Charge / Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt 1 - Existing COS Methodology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1 Supply</td>
<td>25%</td>
<td>Sales</td>
<td>$/AF</td>
</tr>
<tr>
<td>System Access Rate</td>
<td>75%</td>
<td>All Transactions</td>
<td>$/AF</td>
</tr>
<tr>
<td>Alt 2 - Modified COS Methodology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1 Supply</td>
<td>25%</td>
<td>Sales</td>
<td>$/AF</td>
</tr>
<tr>
<td>System Access Rate</td>
<td>50%</td>
<td>All Transactions</td>
<td>$/AF</td>
</tr>
<tr>
<td>System Power Rate</td>
<td>13%</td>
<td>All Transactions</td>
<td>$/AF</td>
</tr>
<tr>
<td>Readiness-to-Serve Charge</td>
<td>10%</td>
<td>Existing RTS</td>
<td>$/M</td>
</tr>
<tr>
<td>Capacity Charge</td>
<td>2%</td>
<td>Existing CC</td>
<td>$/cfs</td>
</tr>
<tr>
<td>Alt 3A - Functionalized Fixed Charge</td>
<td>100%</td>
<td>10-yr Avg Sales</td>
<td>Fixed $</td>
</tr>
<tr>
<td>Supply Portion</td>
<td></td>
<td>10-yr Avg Transactions</td>
<td></td>
</tr>
<tr>
<td>Transportation Portion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alt 3B - Non-Functionalized Fixed Charge based on Population</td>
<td>100%</td>
<td>Population</td>
<td>Fixed $</td>
</tr>
<tr>
<td>Alt 3B - Non-Functionalized Fixed Charge based on Assessed Valuation</td>
<td>100%</td>
<td>Assessed Valuation</td>
<td>Fixed $</td>
</tr>
</tbody>
</table>

Using a hypothetical Revenue Requirement share; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.
Next Steps

- **Feb. 2020:**
  - 2021 and 2022 budget and rate setting process begins
  - Layout 2020 IRP update process
- **Mar. 2020:**
  - Layout rate refinement process
- **Apr. 2020:** Adopt 2021 and 2022, budget, rates, and charges
Water Transfer
Implementation Update

Imported Water Committee
January 23, 2020

Kara Mathews
Principal Water Resources Specialist
Water Transfer with Imperial Irrigation District

- Largest agricultural to urban water transfer in the U.S.
- Fund agricultural efficiency projects and receive water conserved
- Successfully implemented since 2003 as part of QSA
- Provides about 1/3 of 2020 annual supply
## Annual Schedule

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Transfer Volume</th>
<th>“Early Transfer” Volume</th>
<th>Total Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>130,000 AF</td>
<td></td>
<td>130,000 AF</td>
</tr>
<tr>
<td>2019</td>
<td>160,000 AF</td>
<td></td>
<td>160,000 AF</td>
</tr>
<tr>
<td>2020</td>
<td>190,000 AF</td>
<td>2,500 AF</td>
<td>192,500 AF</td>
</tr>
<tr>
<td>2021</td>
<td>200,000 AF</td>
<td>5,000 AF</td>
<td>205,000 AF</td>
</tr>
<tr>
<td>2022</td>
<td>200,000 AF</td>
<td>2,500 AF</td>
<td>202,500 AF</td>
</tr>
<tr>
<td>2023-2047</td>
<td>200,000 AF</td>
<td></td>
<td>200,000 AF</td>
</tr>
</tbody>
</table>

![Graph showing annual schedule with transfer volumes and total volumes. The graph highlights the years 2003, 2020, and 2047 along with a note indicating 1.3 Million AF.]
IID’s Efficiency-Based Conservation

On-Farm Conservation
IID pays growers $285/AF to implement projects on their farms

System Efficiency Projects
Capital improvement projects in IID’s distribution system
Supply Rates

2019 Rates

$668
IID Transfer
Supply Rate

$475
Melded QSA
Supply Rate

QSA Melded Cost

$928
$453
2019

$993
$511
2020

- Melded QSA Supply Rate
- MWD Exchange Rate
# Additional Funding For Water Transfer

<table>
<thead>
<tr>
<th>Socioeconomics</th>
<th>System Efficiency Projects</th>
<th>Environmental Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30M provided through 2017</td>
<td>Provided $50M to IID in 2010</td>
<td>$84M of $94M for QSA JPA</td>
</tr>
<tr>
<td>Fully dispersed</td>
<td>IID spent $37M to date</td>
<td>Funding credit for LCR MSCP</td>
</tr>
</tbody>
</table>

![Image of Socioeconomics](image1.png)

![Image of System Efficiency Projects](image2.png)

![Image of Environmental Mitigation](image3.png)

Our Region’s Trusted Water Leader
San Diego County Water Authority
Environmental Mitigation Programs

In Valley Mitigation

On River Mitigation
Lower CO River Multi-Species Conservation Program

- On River environmental program for water and power operations throughout Lower Basin
- Establishes Habitat Conservation Areas along the river corridor for covered species
- Water Authority participates for change in point of diversion of QSA supplies

Implemented by BOR

Cotton Rat is a covered species

Beal Lake Conservation Area

Funding Breakdown

Federal

CA

AZ

NV

Our Region’s Trusted Water Leader
San Diego County Water Authority
QSA Joint Powers Authority (JPA)

- In Valley environmental coverage for QSA transfers
- Water Authority performs administrative and financial duties

$141M spent on required mitigation

Salton Sea Mitigation Water
Air Quality Dust Control Projects
Looking Forward

200,000 ACRE-FEET IN 2021

CONTINUE ENVIRONMENTAL MITIGATION PROGRAMS

CONTINUE EFFORTS FOR FLEXIBILITY IN IMPLEMENTATION

Our Region’s Trusted Water Leader
San Diego County Water Authority
Federal Legislative Priorities - 2020

Legislation and Public Outreach Committee
January 23, 2020

Glenn Farrel, Director of Government Relations
Proposed Federal Legislative Priorities - 2020

- Carpi & Clay actively represents the Water Authority and its interests in Washington, D.C.
- Federal advocacy based on Board policy direction within the Legislative Policy Guidelines
  - The purpose of federal legislative priorities is to outline the implementation program to advance the Board’s policy objectives
- Feedback from Board members and member agencies will be incorporated into final document
- Staff will present the proposed FINAL Federal Legislative Priorities for the Board’s consideration on February 27
### Federal Legislative Priorities

1. Protect the Water Authority’s **Colorado River** water supplies, advance opportunities for new water storage, and continue to regularly apprise members of the San Diego congressional delegation of developments regarding the Water Authority’s interests in the Colorado River, QSA implementation, Salton Sea restoration, and Lake Mead storage.

2. Continue **building relationships** for the Water Authority with key officials in the Administration, particularly within the U.S. Department of the Interior, Bureau of Reclamation, and the U.S. Environmental Protection Agency, as well as with members of the California congressional delegation and key appropriations and authorizing committees. Additionally, reach out to other key members of Congress from other states that may have similar interests to help strengthen coalition efforts.

3. Engage with the Administration to pursue **federal funding** appropriations for important regional water projects, recycled water, potable reuse, and desalination.

4. Closely monitor and engage, when appropriate, on issues relative to **federal infrastructure policy**, including promotion of financing and funding options that benefit the Water Authority and its member agencies.

5. Continue to inform the regional congressional delegation regarding the Water Authority’s **energy needs and contributions**, including progress on the Water Authority’s and City of San Diego’s San Vicente Energy Storage Project, and explore options for federal funding support or regulatory relief to reduce energy costs and improve energy efficiency for the Water Authority.

6. Communicate the interests of the Water Authority and its member agencies in promoting **potable reuse** as a major regional water supply initiative.
### Actions to Implement Board’s Policy Direction

- Actions identified to advocate the Water Authority’s interests in Washington
  - Close coordination with San Diego congressional delegation - regular program of education/information
  - Work with industry associations to build strong advocacy coalitions
  - Engage with congressional delegation and relevant legislators/staff to pursue Water Authority project-specific financial assistance
Actions to Implement Board’s Policy Direction

- More actions identified to advocate the Water Authority’s interests in Washington
  - Monitor legislative and regulatory actions to ensure prompt and timely receipt of information
- Identify opportunities for Water Authority’s direct advocacy - Board and management - with congressional delegation locally and in Washington
Next Steps on Federal Legislative Priorities

- Staff is requesting suggestions for updates, revisions, and modifications from Board members and member agencies

- Please return to Glenn Farrel by January 31

- Staff will present the proposed FINAL Federal Legislative Priorities for the Board’s consideration on February 27
Sacramento Update

Legislation and Public Outreach Committee
January 23, 2020

Glenn Farrel, Director of Government Relations
Legislature

- On January 6, the Legislature returned to begin the second year of its two-year 2019-2020 legislative session
- All bills introduced in 2019 that have not passed through their House of origin, must do so by January 31
- Bill introduction deadline for newly-introduced legislation for 2020 is February 21
Sponsored Legislation - SB 597 (Hueso)

- SB 597 is co-sponsored by the Water Authority and the City of San Diego
- SB 597 would create a path for procurement of energy storage services for the proposed San Vicente Energy Storage Facility
- SB 597 was moved to the inactive file last week and will not proceed during 2020
  - Consideration is being given to introduction of new legislation for the 2020 session by the February 21 deadline
Governor’s Proposed State Budget

- On January 10, Governor Newsom released his proposed State Budget for the 2020-21 fiscal year
- Total expenditures: $222 B (up more than 3% from current fiscal year)
  - Total General Fund expenditures: $153 B (up 2.2% from current fiscal year)
- Key priorities outlined in proposed State Budget
  - Building reserves and reducing liabilities
  - Addressing the affordability crisis
    - Housing and health care
  - Confronting the homelessness crisis
  - Emergency response and effective government
  - Promoting opportunity for all - K-12 education
  - Expanding access to higher education
Governor’s Proposed State Budget

- Proposed “Climate Budget”
  - Intended to take a focused approach toward government investment in meeting the state’s priority climate goals of reducing climate risk while achieving carbon neutrality
- Climate budget proposes to invest $12.5 B over next five years
  - $1.7 B in proposed spending in next fiscal year

<table>
<thead>
<tr>
<th>FUNDING SOURCE</th>
<th>5-YEAR TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Resilience Bond</td>
<td>$4.75 B</td>
</tr>
<tr>
<td>Cap/Trade Expenditure Plan</td>
<td>$4.83 B</td>
</tr>
<tr>
<td>Climate Catalyst Fund</td>
<td>$1 B</td>
</tr>
<tr>
<td>General Fund - One-Time Investments</td>
<td>$169 M</td>
</tr>
<tr>
<td>General Fund - Ongoing</td>
<td>$315 M</td>
</tr>
<tr>
<td>Existing Bond and Special Funds</td>
<td>$1.42 B</td>
</tr>
</tbody>
</table>
Governor’s Proposed State Budget

- Newsom Administration is also advancing a $4.75 B climate resilience bond for the November 2020 ballot
  - Structured around addressing climate risks
  - More than 60% of proposed bond funding dedicated to programs that align with priorities in the Governor’s Water Resilience Portfolio
## Governor’s Proposed Climate Resilience Bond

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>PROGRAM</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking Water, Flood, Drought</td>
<td>Regional and Inter-Regional Water Resilience</td>
<td>$1 B</td>
</tr>
<tr>
<td>Drinking Water, Flood, Drought</td>
<td>Sustainable Groundwater Management</td>
<td>$395 M</td>
</tr>
<tr>
<td>Drinking Water, Flood, Drought</td>
<td>Safe Drinking Water</td>
<td>$360 M</td>
</tr>
<tr>
<td>Drinking Water, Flood, Drought</td>
<td>Flood</td>
<td>$610 M</td>
</tr>
<tr>
<td>Drinking Water, Flood, Drought</td>
<td>Salton Sea</td>
<td>$220 M</td>
</tr>
<tr>
<td>Drinking Water, Flood, Drought</td>
<td>Environmental Farming Incentive Program</td>
<td>$200 M</td>
</tr>
<tr>
<td>Drinking Water, Flood, Drought</td>
<td>Enhanced Stream Flows and Fish Passage</td>
<td>$140 M</td>
</tr>
<tr>
<td>Drinking Water, Flood, Drought</td>
<td><strong>Subtotal</strong></td>
<td><strong>$2.925 B</strong></td>
</tr>
<tr>
<td>Wildfire</td>
<td>Hardening of Critical Community Infrastructure</td>
<td>$500 M</td>
</tr>
<tr>
<td>Wildfire</td>
<td>Forest Health</td>
<td>$250 M</td>
</tr>
<tr>
<td>Wildfire</td>
<td><strong>Subtotal</strong></td>
<td><strong>$750 M</strong></td>
</tr>
<tr>
<td>Sea Level Rise</td>
<td>Coastal Wetland Restoration</td>
<td>$320 M</td>
</tr>
<tr>
<td>Sea Level Rise</td>
<td>Nature-Based Solutions to Build Resilience</td>
<td>$130 M</td>
</tr>
<tr>
<td>Sea Level Rise</td>
<td>Demonstration Projects to Protect Critical Infrastructure</td>
<td>$50 M</td>
</tr>
<tr>
<td>Sea Level Rise</td>
<td><strong>Subtotal</strong></td>
<td><strong>$500 M</strong></td>
</tr>
<tr>
<td>Extreme Heat</td>
<td>Urban Greening and Forestry</td>
<td>$200 M</td>
</tr>
<tr>
<td>Extreme Heat</td>
<td>Cool Surface Materials</td>
<td>$125 M</td>
</tr>
<tr>
<td>Extreme Heat</td>
<td><strong>Subtotal</strong></td>
<td><strong>$325 M</strong></td>
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<tr>
<td>Community Resilience</td>
<td>Community Resilience Planning</td>
<td>$25 M</td>
</tr>
<tr>
<td>Community Resilience</td>
<td>Community Resiliency Centers</td>
<td>$225 M</td>
</tr>
<tr>
<td>Community Resilience</td>
<td><strong>Subtotal</strong></td>
<td><strong>$250 M</strong></td>
</tr>
</tbody>
</table>
Governor’s Proposed State Budget

- Additional resources funding highlights
  - $138 M proposed for supporting the Governor’s Water Resilience Portfolio
  - $66 M in one-time funding for urban flood, fish, wildlife, and habitat protection

- Notation within the Infrastructure Budget that the Administration is advancing a **single-tunnel conveyance** project with environmental review now under way

- Notation within the Infrastructure Budget that the Administration is working with a broad range of water agencies and environmental/conservation groups to develop **Voluntary Agreements** relative to Delta flows and environmental conditions
Governor’s Proposed State Budget

- Next steps on proposed State Budget
  - Budget subcommittee hearings in Assembly and Senate throughout the Spring
  - Governor issues “May Revise” of proposed State Budget during first week of May
    - Updated revenue projections
    - Spending initiatives to address emerging priorities
  - Legislature must pass State Budget by midnight on June 15
    - New fiscal year begins on July 1
- Staff is continuing to closely analyze the proposed State Budget, including the scope of funding components within the Climate Resilience Bond package
**Anticipated State Legislative Issues in 2020**

- Remaining issues related to safe and affordable drinking water
  - Small water system consolidation authority - CMUA/Eastern MWD
  - Low-income water rate assistance program
  - New information emerging from completion of SWRCB “needs assessment”

- Wildfire liability and prevention issues
  - Public Safety Power Shutoffs

- “Fixes” to water use efficiency statutes
  - New issues
  - Addressing implementation issues

- Resources bond
Anticipated State Legislative Issues in 2020

- Energy-related issues
  - Pumped hydropower storage
  - PG&E bankruptcy
  - SDG&E proposal to discontinue energy procurement
  - Creation of centralized procurement entity

- Drinking water quality
  - Contaminants of emerging concern