Proposed Revisions to the Water Shortage and Drought Response Plan
<table>
<thead>
<tr>
<th>Item</th>
<th>Discussion Topic</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction/Purpose of Update</td>
<td>Bob Yamada</td>
</tr>
<tr>
<td>2</td>
<td>Background Information</td>
<td>Jeff Stephenson</td>
</tr>
<tr>
<td>3</td>
<td>Review of Proposed Plan Sections</td>
<td>Dana Friehauf, Jason Foster</td>
</tr>
<tr>
<td>4</td>
<td>Schedule</td>
<td>Dana Friehauf</td>
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</table>
Why are we here today?

- Seeking Board input on proposed update of the Water Authority’s Water Shortage and Drought Response Plan
  - Also engaged with member agencies on the proposed update

- No decision to be made today

- Staff plans to provide the Board with a completed draft over the next couple months
Water Shortage and Drought Response Plan (WSDRP)

- Serves as region’s guiding shortage management document
  - Originally developed in 2006 and named the “Drought Management Plan”

- Provides Water Authority and member agencies with:
  - Series of potential actions to take when faced with shortage of Water Authority supplies
  - Actions to help region minimize impacts of shortages
  - Equitable allocation of supplies
WSDRP Successes

- Activated twice since 2006
- Allowed smooth transition into and out of allocations during recent drought conditions
Why update the WSDRP?

- Incorporate lessons learned from recent shortage periods
- Simplify drought response levels and actions
- Practice proactive planning
- Important to update now to be prepared for potential future supply shortages
Proposed Changes to WSDRP

- Revamp into the Water Shortage Contingency Plan (WSCP)
  - Add annual M&I reliability analysis
  - Create regional water shortage response stages consistent with local response levels
  - Update communication plan

- Model Drought Response Ordinance will be updated upon completion of State’s rulemaking on permanent water waste prohibitions

- Allocation methodology revised in 2012 and will not be updated
Member Agency Input

- Workshop on March 27, 2017
- Significant discussion on proposed regional M&I shortage response levels and actions
  - Revisions made based on comments received
- Continue coordination at member agency managers’ meetings
- Provide draft plan for their review and input
Background Information
Water Shortage Planning and Implementation (Board Actions)

- **2006 DMP**
- **2007 Activated DMP (deactivated in 2011)**
- **2008 Model Drought Response Ordinance**
- **2008 Procedures to Administer Allocation Methodology**
- **2012 Modifications to Allocation Methodology and re-named WSDRP**
- **2014 Activated WSDRP (deactivated in 2016)**
- **2015 UWMP Shortage Contingency Analysis**
- **2016 Guidelines for Managing Carryover Supplies**

**DMP:** Drought Management Plan  
**WSDRP:** Water Shortage and Drought Response Plan
Member Agency Participation Key to Preparation of 2006 DMP

- Member Agency Technical Advisory Committee
  - Support was critical to development of plan

- 10 meetings (March 2005 – February 2006)

- Reflects many hours of thoughtful deliberation
2006 Drought Management Plan

- Served as regional guide
- Provided an orderly, progressive approach

Main elements of DMP
- Allocation Methodology
- Drought Response Matrix
- Communication Strategy
# Drought Response Matrix

<table>
<thead>
<tr>
<th>POTENTIAL WATER AUTHORITY DROUGHT ACTIONS</th>
<th>STAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Voluntary Supply Management</td>
</tr>
<tr>
<td>Ongoing BMP Implementation</td>
<td>X</td>
</tr>
<tr>
<td>Communication Strategy</td>
<td>X</td>
</tr>
<tr>
<td>Monitoring supply conditions and storage levels</td>
<td>X</td>
</tr>
<tr>
<td>Call for voluntary conservation</td>
<td>X</td>
</tr>
<tr>
<td>Put in and take from SDCWA Carryover Storage</td>
<td>X</td>
</tr>
<tr>
<td>Secure transfer option contracts</td>
<td>X</td>
</tr>
<tr>
<td>Buy phase 1 spot transfers (cost at or below Tier 2 rate)</td>
<td>X</td>
</tr>
<tr>
<td>Call transfer options</td>
<td>X</td>
</tr>
<tr>
<td>Buy phase 2 spot transfers (cost at or below Tier 2 rate)</td>
<td>X</td>
</tr>
<tr>
<td>Implement allocation methodology</td>
<td>X</td>
</tr>
<tr>
<td>Utilize ESP Supplies</td>
<td>X</td>
</tr>
</tbody>
</table>
2008 Procedures for Administration of Allocation Methodology

- Process to establish member agency supply allocation
- Procedure to modify allocations
- Require monthly reporting to monitor deliveries
- Final reconciliation at end of allocation period
- Discusses monetary penalties for agencies exceeding allocation
2008 Model Drought Response Ordinance

- Provide regional consistency
  - Shortage levels and core water-use restrictions
  - Clear messaging to public
- Core water-use restrictions
  - Prohibit wasteful water practices
  - Progressive severity of restrictions
- At more severe levels
  - Customer allocations
  - Restrictions on new meters

Shortage Response Levels

- **Drought Watch**
  - (10% voluntary conservation)
- **Drought Alert**
  - (Up to 20% mandatory conservation)
- **Drought Critical**
  - (Up to 40% mandatory conservation)
- **Drought Emergency**
  - (More than 40% mandatory conservation)
## Correlation between DMP Stages and Model Ordinance Levels

<table>
<thead>
<tr>
<th>DMP Stage</th>
<th>Drought Response Model Ordinance Level</th>
<th>Use Restrictions</th>
<th>Conservation Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1- Drought Watch</td>
<td>Voluntary</td>
<td>Up to 10%</td>
</tr>
<tr>
<td>2</td>
<td>1- Drought Watch</td>
<td>Voluntary</td>
<td>Up to 10%</td>
</tr>
<tr>
<td></td>
<td>2- Drought Alert</td>
<td>Mandatory</td>
<td>Up to 20%</td>
</tr>
<tr>
<td>3</td>
<td>2- Drought Alert</td>
<td>Mandatory</td>
<td>Up to 20%</td>
</tr>
<tr>
<td>4</td>
<td>3- Drought Critical</td>
<td>Mandatory</td>
<td>Up to 40%</td>
</tr>
<tr>
<td></td>
<td>4- Drought Emergency</td>
<td>Mandatory</td>
<td>Above 40%</td>
</tr>
</tbody>
</table>
2012 Modifications to WSDRP Allocation Methodology

- Conducted review based on lessons learned and changed conditions
  - Coordinated review with member agencies
  - Consensus that methodology worked as envisioned
  - Wholesale changes not needed – maintain basic principles

- Addressed seven areas, including
  - Clarify that base years are prior to activation of WSDRP
  - Establish CSP allocation method to ensure deliveries only to M&I customers
2015 UWMP Shortage Contingency Analysis Section

- Catastrophic Water Shortage
  - Integrated Contingency Plan
  - Emergency Storage Project

- Water Shortage and Drought Response Planning
  - WSDRP
  - Model Drought Response Ordinance
  - Timeline of drought response actions
  - Dry-Year Supplies and Carryover Storage
2016 Carryover Storage Guidelines

- Provides guidance on managing Water Authority carryover storage supplies during normal and shortage periods
  - Evaluate annually (by May) during normal periods
  - Evaluate whenever the Water Authority experiences a shortage in its supplies
    - Withdraw supplies evenly over 5 year period
  - Evaluate after shortage period to determine how much water, if any, should be put into storage to replenish reserves
- Carryover storage not available to TSAWR customers
Final framework released April 7, 2017

Two areas that impact local drought response planning and implementation:
- Permanent water use prohibitions
- Strengthen water shortage contingency planning

Implementation will be through legislation and regulatory rulemaking
Long-Term Framework
Proposed Implementation

- Permanent water use prohibitions
  - Established through SWRCB rulemaking process
  - Process expected to be completed by end of 2017

- Strengthen water shortage contingency planning
  - New requirements established through legislation
  - Compliance not required until 2020
Linkage between Proposed Revisions to WSDRP and Long-Term Framework

- Proceed with proposed revisions in 2017
  - Modify plan to be consistent with Framework structure
  - Adequate time during non-shortage period
  - Rename: Water Shortage Contingency Plan (WSCP)

- Update WSCP in 2020
  - Review as part of 2020 UWMP update
  - Reflect final statutory requirements

- Update Model Drought Response Ordinance following SWRCB rulemaking process on water use prohibitions
Proposed Water Shortage Contingency Plan

- 2006 Drought Management Plan
- 2008 Procedures to Administer Allocation Methodology
- 2008 Model Drought Response Ordinance
- 2012 Modifications to Allocation Methodology
- 2015 UWMP Shortage Contingency Analysis
- 2016 Guidelines for Managing Carryover Supplies
- 2017 Water Shortage Contingency Plan
- 2017 Long-Term Framework for Water Use Efficiency
Review of Proposed Plan Sections
## Proposed WSCP Outline

<table>
<thead>
<tr>
<th>Section</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, purpose, and need for the plan</td>
</tr>
<tr>
<td>2</td>
<td>Plan preparation and re-evaluation</td>
</tr>
<tr>
<td>3</td>
<td>Historic drought plans and shortage response actions</td>
</tr>
<tr>
<td>4</td>
<td>Annual municipal and industrial (M&amp;I) reliability analysis</td>
</tr>
<tr>
<td>5</td>
<td>Drought response actions and levels</td>
</tr>
<tr>
<td>6</td>
<td>Supply augmentation</td>
</tr>
</tbody>
</table>
### Proposed WSCP Outline (cont.)

<table>
<thead>
<tr>
<th>Section</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Demand reduction measures</td>
</tr>
<tr>
<td>8</td>
<td>Member agency supply allocation methodology</td>
</tr>
<tr>
<td>9</td>
<td>Catastrophic water shortages</td>
</tr>
<tr>
<td>10</td>
<td>Communication plan</td>
</tr>
<tr>
<td>11</td>
<td>Implementation</td>
</tr>
</tbody>
</table>
Section 1 – Introduction

- Discusses purpose of WSCP
- Includes information on:
  - Water Authority’s water supply reliability efforts
  - Defining drought
  - Coordination with member agencies
  - Organization of WSCP
Section 2 – Plan Preparation & Re-Evaluation

- Provides background on preparation of WSDRP and WSCP

- Describes procedure to evaluate plan implementation and potential need for future revisions
  - Evaluate at least every five years in coordination with the UWMP update
  - Consider feedback from member agencies
  - Present updates to Board for approval
Section 3 – Historic Drought Periods and Shortage Response Actions

- Reviews historic drought periods and Water Authority actions
- Provides timeline of significant drought and shortage-related events
- Discusses lessons learned

Lake Oroville

[Images of Lake Oroville in January 2016 and January 2017]
Section 4 – Annual M&I Reliability Analysis Overview

- Section describes annual reliability analysis to be conducted by staff
  - Provides Board annual evaluation of supply and demand conditions
  - Evaluates storage reserves, consistent with CSP Guidelines
  - Determines potential Water Authority supply shortage

- If shortage, section describes calculation to determine regional shortage level
  - Utilized to determine appropriate **regional** response actions
Describes process to evaluate Water Authority supplies, including carryover supplies

- During non-shortage periods, determine appropriate carryover storage reserves
- If currently experiencing shortage, identify carryover storage draw or other supply augmentation action (dry-year transfers) to manage shortfall
  - Supply augmentation plus core supplies will be amount allocated to member agencies for M&I purposes
Section 4 – Transitional Special Agricultural Water Rate (TSAWR)

- Describes TSAWR customers as being a separate class of service.
- Cost benefit is tied to “TSAWR” customers receiving only MWD supply.
- Allocation based on MWD’s cutback level.
- No access to QSA, Lewis CDP, or carryover storage supplies.
- TSAWR customers cutback during an emergency at twice the level of M&I customers.
  - Up to a 90 percent cutback.
Describes assumptions used to conduct evaluation
Conservative analysis assuming five consecutive dry years
Water Authority demand based on current water use patterns and UWMP dry-year scenario
  Consider member agency local supplies
Water Authority core supplies based on:
  QSA ramp-up schedule
  Lewis Carlsbad Desalination Plant supply
  MWD supply allocation based on Preferential Right and conservative estimate of MWD total annual supplies
Section 4 – Annual M&I Reliability Analysis
Evaluation of Water Authority Supplies

Evaluate core supplies and demands
____________________
Is there a shortage?

Yes

First year of 5-year analysis
____________________
Identify storage utilization per CSP Guidelines

No

Later years of 5-year analysis
____________________
Monitor and take actions as necessary

Evaluate storage levels per CSP Guidelines
Next step if shortages identified in reliability analysis
  ◦ Even with utilization of carryover supplies

Describes process to calculate regional M&I shortage level (% regional customer demand reduction)

Based on the following:
  ▸ Projected water demands
  ▸ Water Authority core supplies and supply augmentation
  ▸ Member agencies’ local supply projections

Utilized to determine appropriate regional response level and actions
Section 5 – Regional Shortage Levels and Response Actions

- Provides overview of shortage response levels and actions, including discussion on:
  - Triggers
  - Percent reduction at each level
  - Mandatory and voluntary reductions

- Includes discussion on annual monitoring and reporting procedures
## Section 5 – Proposed Regional Shortage Response Levels and Actions

<table>
<thead>
<tr>
<th>Potential Water Authority Shortage Response Action</th>
<th>Potential Regional Water Shortage Response Level</th>
<th>Ongoing Water Use Efficiency</th>
<th>Communication Plan</th>
<th>Supply Augmentation</th>
<th>Call for Extraordinary Demand Reduction Measures</th>
<th>Member Agency M&amp;I Supply Allocation</th>
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<tbody>
<tr>
<td></td>
<td>Level 1 Watch Up to 10% (Voluntary)</td>
<td><img src="%E2%9C%93" alt="Check" /></td>
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<td>Level 2 Alert Up to 20% (Mandatory)</td>
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<td>Level 3 Severe Up to 30% (Mandatory)</td>
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<tr>
<td></td>
<td>Level 4 Critical Above 30% (Mandatory)</td>
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<td></td>
<td>Catastrophic Emergency • Activate Integrated Contingency Plan and Emergency Operations Plan • Allocate Emergency Storage Program supplies based on Emergency Water Delivery Plan</td>
<td><img src="%E2%9C%93" alt="Check" /></td>
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</table>
## Section 5 – Potential Response Level Trigger

<table>
<thead>
<tr>
<th>Potential Regional Water Shortage Response Level</th>
<th>Potential Scenarios (As Documented in Reliability Analysis)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voluntary</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Level 1 – Watch</strong></td>
<td>- Likelihood of potential core supply shortage in the near-term, or&lt;br&gt;- Shortage in core supplies, mitigated through carryover storage reserves</td>
</tr>
<tr>
<td>Up to 10% Reduction</td>
<td></td>
</tr>
<tr>
<td><strong>Mandatory</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Level 2 – Alert</strong></td>
<td>- Water Authority core supplies are not adequate to meet demands&lt;br&gt;- Supply augmentation (i.e., utilize carryover storage reserves and/or dry-year transfers) does not fully mitigate core supply shortage</td>
</tr>
<tr>
<td>Up to 20% regional M&amp;I customer demand reduction required</td>
<td></td>
</tr>
<tr>
<td><strong>Level 3 – Severe</strong></td>
<td>- Regional shortage level has been identified</td>
</tr>
<tr>
<td>Up to 30% regional M&amp;I customer demand reduction required</td>
<td></td>
</tr>
<tr>
<td><strong>Level 4 – Critical</strong></td>
<td>- Occurs when a disaster, such as an earthquake, results in insufficient available water to meet the region’s needs or eliminates access to imported water supplies</td>
</tr>
<tr>
<td>Above a 30% regional M&amp;I customer demand reduction required</td>
<td></td>
</tr>
<tr>
<td><strong>Catastrophic Emergency</strong></td>
<td></td>
</tr>
</tbody>
</table>
Section 6 – Supply Augmentation

- Identifies potential actions to temporarily augment supply
- Describes components of Carryover Storage Program, including:
  - San Vicente Dam Raise Carryover Storage Project
  - Out-of-Region Groundwater Program
  - Board-adopted guidelines for managing carryover storage supplies
- Describes Water Authority’s Dry-Year Transfer Program
Section 7 – Demand Reduction Measures

- Identifies a list of potential retail-level water use restrictions
  - Focus on conserving water outdoors
  - Extraordinary demand reduction measures

- Discusses potential measures that water suppliers and municipalities can take to conserve water
Section 8 – Member Agency Supply Allocation Methodology

- Includes description of current allocation methodology
- Methodology revised in 2012 through stakeholder process
- No update planned as part of current process
- Includes 2008 Board resolution on administration of supply allocation
Section 9 – Catastrophic Water Shortage

- Provides overview of actions related to catastrophic events, such as earthquakes
- Discusses:
  - Management of catastrophic water shortages
  - Role of:
    - Integrated Contingency Plan
    - Emergency Storage Program
    - Emergency Water Delivery Plans
Includes description of ESP

Protects region against catastrophic events

Assures M&I customers minimum 75% level of service
  - 2-month event – complete outage of imported supplies
  - 6-month event – partial outage of imported State/Colorado River supplies

TSAWR customers cutback at twice the rate of M&I customers
Section 10 – Communication Plan

Describes elements of communication plan, including:
- Coordination
- Key audiences
- Flexibility and adaptability
- Communication objectives
- Normal period communications
- Strategies and tactics for each shortage level
Section 10 – Communication Plan (cont.)

- Updated to reflect lessons of past drought response outreach efforts
- Continue emphasis on coordination with member agencies
- Focus on flexibility, adaptability
  - Every scenario is different
  - Needs can vary widely
Achieve compliance with needed actions

Minimize confusion, maintain credibility

Make users feel appreciated and treated fairly

Prepare for escalating/de-escalating activities

Demonstrate effectiveness of saving + reliability investments
Section 10 – Communication Plan Stages

- Five levels (Normal and shortage levels 1–4)
- Escalating range of activities and scope at each level
  - Updated to reflect current tools (social media, Nextdoor, apps, etc.)
- Recommendations rather than prescriptive measures
  - Gives Board, management freedom for tailored approaches
- Customized plans created when need arises
Section 11 – Implementation

- Summarizes role of Board during shortage event
  - Activation and deactivation of plan, modifications to plan
  - Consideration of potential shortage actions, including:
    - Drawing from carryover storage
    - Securing and calling spot transfer options
    - Approving member agency supply allocations
    - Utilizing emergency storage project supplies

- Receive monthly water supply conditions report
Section 11 - Implementation (cont.)

- Discusses role of the Member Agency Advisory Team (MAAT) during a shortage event
  - Comprised of member agency managers or representatives
  - May provide recommendations on:
    - Regional shortage response actions
    - Member agency supply allocations and requests for modification to approved allocation
    - Modifying WSCP if not working as expected
## 2017 Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 13</td>
<td>Board workshop on WSCP background and sections</td>
</tr>
<tr>
<td>April 18</td>
<td>Member Agency Managers’ Meeting – Update on development of WSCP</td>
</tr>
<tr>
<td>Week of May 1</td>
<td>Distribute draft WSCP to member agency managers for review/comment</td>
</tr>
<tr>
<td>May 16</td>
<td>Member Agency Managers’ Meeting – Discussion on WSCP</td>
</tr>
<tr>
<td>Week of June 5</td>
<td>Distribute final draft WSCP to board members</td>
</tr>
<tr>
<td>June 22</td>
<td>Consider for adoption at board meeting</td>
</tr>
</tbody>
</table>