

MEETING OF THE BOARD OF DIRECTORS OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Jointly with the
PLANNING & OPERATIONS COMMITTEE

January 6, 2020, 8:30 a.m.

Conference Room 101

P&O Committee:

Director Yoo Schneider, Chair
Director Tamaribuchi
Director Dick

Staff: R. Hunter, K. Seckel, J. Berg,
H. De La Torre, K. Davanaugh,
D. Harrison

Ex Officio Member: Director Tamaribuchi

MWDOC Committee meetings are noticed and held as joint meetings of the Committee and the entire Board of Directors and all members of the Board of Directors may attend and participate in the discussion. Each Committee has designated Committee members, and other members of the Board are designated alternate committee members. If less than a quorum of the full Board is in attendance, the Board meeting will be adjourned for lack of a quorum and the meeting will proceed as a meeting of the Committee with those Committee members and alternate members in attendance acting as the Committee.

PUBLIC COMMENTS - Public comments on agenda items and items under the jurisdiction of the Committee should be made at this time.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED - Determine there is a need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda. (Requires a unanimous vote of the Committee)

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO MEETING -- Pursuant to Government Code section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection in the lobby of the District's business office located at 18700 Ward Street, Fountain Valley, California 92708, during regular business hours. When practical, these public records will also be made available on the District's Internet Web site, accessible at <http://www.mwdoc.com>.

PRESENTATIONS

1. FY 2019-20 DEPARTMENT ACTIVITIES PRESENTATIONS
 - a. Water Use Efficiency Department
 - b. Metropolitan Issues and Water Policy
 - c. Reliability Planning & Engineering
 - d. WEROC

INFORMATION ITEMS (The following items are for informational purposes only – background information is included in the packet. Discussion is not necessary unless a Director requests.)

2. CDM SMITH ANALYSIS OF THE COSTS AND BENEFITS OF NEW 800,000 AF RESERVOIR COMPARED TO A 400,000 AF SURFACE RESERVOIR IN SOUTHERN CALIFORNIA

3. STATUS REPORTS
 - a. Ongoing MWDOC Reliability and Engineering/Planning Projects
 - b. WEROC
 - c. Water Use Efficiency Projects
4. REVIEW OF ISSUES RELATED TO CONSTRUCTION PROGRAMS, WATER USE EFFICIENCY, FACILITY AND EQUIPMENT MAINTENANCE, WATER STORAGE, WATER QUALITY, CONJUNCTIVE USE PROGRAMS, EDUCATION, DISTRICT FACILITIES, and MEMBER-AGENCY RELATIONS

ADJOURNMENT

NOTE: At the discretion of the Committee, all items appearing on this agenda, whether or not expressly listed for action, may be deliberated, and may be subject to action by the Committee. On those items designated for Board action, the Committee reviews the items and makes a recommendation for final action to the full Board of Directors; final action will be taken by the Board of Directors. Agendas for Committee and Board meetings may be obtained from the District Secretary. Members of the public are advised that the Board consideration process includes consideration of each agenda item by one or more Committees indicated on the Board Action Sheet. Attendance at Committee meetings and the Board meeting considering an item consequently is advised.

Accommodations for the Disabled. Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by telephoning Maribeth Goldsby, District Secretary, at (714) 963-3058, or writing to Municipal Water District of Orange County at P.O. Box 20895, Fountain Valley, CA 92728. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.



DISCUSSION ITEM
January 6, 2020

TO: Planning & Operations Committee
(Directors Yoo Schneider, Dick, Tamaribuchi)

FROM: Robert Hunter, General Manager

SUBJECT: FY 2019-20 Department Activities Presentations

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee review and discuss department activities for FY 2019-20 for the Water Use Efficiency Department, METROPOLITAN Activities, the Planning & Engineering Department and for WEROC.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

As an initial step in the budgeting process for Fiscal Year 2020-21, the various MWDOC departments will make presentations to the Board Committees on activities they have been involved in historically and during this fiscal year. The departments presenting at the Planning & Operations Committee include:

- a. Water Use Efficiency Department
- b. Metropolitan Issues and Water Policy
- c. Reliability Planning & Engineering
- d. WEROC

The remaining departments (Public Affairs, Government Affairs, Administration and Finance) will make their presentations at the January 8th Administration & Finance Committee meeting. These presentations will then be followed by additional discussions focusing on proposed future activities at the January 16th Executive Committee.

| | | | |
|---|------------------|------------|-----------|
| Budgeted (Y/N): | Budgeted amount: | Core __ | Choice __ |
| Action item amount: | | Line item: | |
| Fiscal Impact (explain if unbudgeted): | | | |

Water Use Efficiency Today

Water Use Efficiency & Water Loss Control Staff

- Seven FTEs
- Four Interns
- Current Staffing Plan Calls for No Increase

355,186
Acre Feet Saved
(\$176/AF saved)

Water Use Efficiency Expenditures

| Latest Five Year Totals | |
|---|---------------------|
| Water Use Efficiency— Core | \$1,946,720 |
| WUE Budget, Staffing, and Programs— Choice* | \$4,377,501 |
| Rebates Paid to Orange County Rate Payers | \$52,051,051 |
| Grant Acquisition Funds for Programs | \$4,030,751 |
| Total: | \$62,406,023 |



*Over the last 5 years, MWD OC Agencies have realized a 13 to 1 benefit

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Water Use Efficiency Today

Water Use Efficiency



Steve Hedges
WUE
Supervisor



Beth Fahl
Senior WUE
Analyst



Rachel Waite
WUE Analyst II



WUE Analyst II

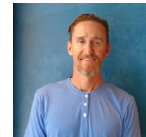


Joe Berg
Director of WUE

Water Loss Control



Rachel Davis
WLC
Supervisor



Jason Thorsell
Leak Detection
Technician

WUE Interns



Sam
Fetter



Aubrey
Carr



Daniela
Velazquez

WLC Intern



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Water Use Efficiency Today (cont.)

Programs for Residential, CII & Public Agency

Rebate Opportunities

| | Residential (SF + MF) | Commercial, Industrial, Institutional (CII) | Public Agency |
|--|---|--|---|
| Indoor | <ul style="list-style-type: none"> High Efficiency Toilets, Clothes Washers | <ul style="list-style-type: none"> Water Savings Incentive Program, High Efficiency Toilets Cooling Towers Waterless Urinals Ice Machines | <ul style="list-style-type: none"> Water Loss Control Technical Assistance and Shared Services |
| Outdoor | <ul style="list-style-type: none"> Smart Timers Turf Removal Spray to Drip Landscape Design Rain Barrels Rotary Nozzles | <ul style="list-style-type: none"> Smart Timers Turf Removal Spray to Drip Large Rotary Nozzles Recycled Retrofit | <ul style="list-style-type: none"> Smart Timer Turf Removal Spray to Drip Recycled Retrofit |
| Education and Public Outreach | | | |
| Qualified Water Efficient Landscaper (QWEL), H2O for HOAs, Community Events, California Friendly Landscape Training (CFLT), Turf Removal Training, OCWaterSmartGardens.com | | | |



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Water Use Efficiency Today (cont.)

Service to Our Member Agencies

- Member Agency Staff Support
- Program Implementation and Funding Acquisition
- Regional, State, and Federal Representation

Metropolitan Leadership

- Project Advisory Committees (PAC)
- MWDOC Rep. at Water Use Efficiency Meetings
- Steer the Future of Water Use Efficiency in S. Calif.

Drought Preparedness

- Water Shortage Contingency Plans
- Outreach

Memberships in Organizations

- California Water Efficiency Partnership, CalWEP
- Alliance for Water Efficiency, AWE
- American Water Works Association, AWWA
- Association of California Water Agencies, ACWA
- Calif. Landscape Contractors Association, CLCA
- Association of California Cities - Orange County, ACC-OC



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Water Loss Control Tech. Assistance & Shared Services

WSO Technical Assistance (Initiated in 2015)

- Water Balance Compilation
- ~~Water Balance Validation~~
- Component Analysis of Real and Apparent Losses
- ~~Pressure Surveys~~
- ~~Leak Detection~~
- Source/Production Meter Accuracy Testing
- Billing Data Chain Assessment
- Internal Water Loss Committee Plan
- Information Order Assistance

MWDOC Shared Services (Initiated FY 2019-20)

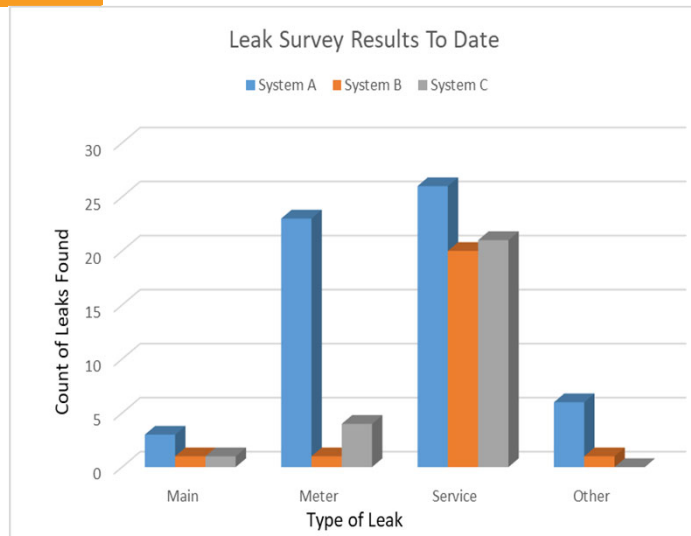
- Water Balance Validation:
 - 30 validations/agencies
- Customer Meter Accuracy Testing
 - 8 agencies
- Distribution System Pressure Surveys
 - 5 surveys
- Distribution System Leak Detection
 - 594 miles
- Distribution System Flushing
 - 2 agencies



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System-Wide Leak Survey: Results to Date

- 184 Miles Surveyed
 - Tustin
 - TCWD
 - La Habra
- 107 Leaks Found
- 209 AF Annual Leakage Volume
- \$232,700/Year Savings*
- Complete Economic Analysis is Pending



*Assuming Metropolitan Water District CY2019 import rate of \$1,113
Including Capacity Charge and Readiness to Serve Charges

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Key Takeaways

- Water Use Efficiency and Water Loss Control measures are now mandated by the State
- Our approach makes the best use of staff expertise for the region
- Our regional approach maximizes access to outside funding
- Our efforts help to inform regulatory standards setting
- We rely on a progressive and measureable program development framework to warrant new programs
- WUE is the least cost water supply alternative
- Memberships in organizations allows MWD OC staff to remain on the leading edge



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Discussion



Department Presentation: Metropolitan Issues and Water Policy







Harvey De La Torre, Associate General Manager
Municipal Water District of Orange County

Planning & Operations Committee

January 6, 2020

Department Overview: Metropolitan Issues and Water Policy

-  Inform MWD OC Board and Member Agencies about MET and key water issues
-  Promote interests of the MWD OC Board and Member Agencies' planning efforts at MET, Regional, and Statewide
-  Assist and plan water reliability projects and programs in collaboration with MET and our Member Agencies
-  Work together and communicate with Orange County water agencies to focus on solutions and priorities for improving Orange County's future water supply



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Department Staffing



Harvey De La Torre
Associate General
Manager



Melissa Baum-Haley
Principal Water
Resources Analyst



Kevin Hostert
Water Resources
Analyst



Chris Lingad
Water Resources
Analyst



- 🔥 Four full time employees
- 🌱 Fully staffed since 2017
- 🔥 Provides inter-departmental support and collaboration

BUDGET INFORMATION:

- 🔥 Core Funded
- 🔥 Cost Center 23
- 🔥 FY 19/20 Budget \$804,601

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Department Core Functions



Metropolitan Issues

Member Agency
Support & Advocacy

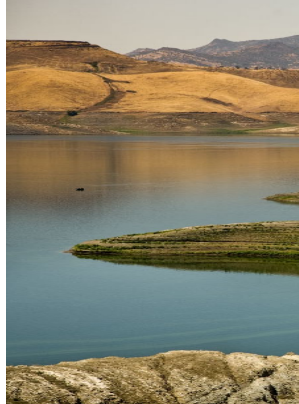
Rates & Charges



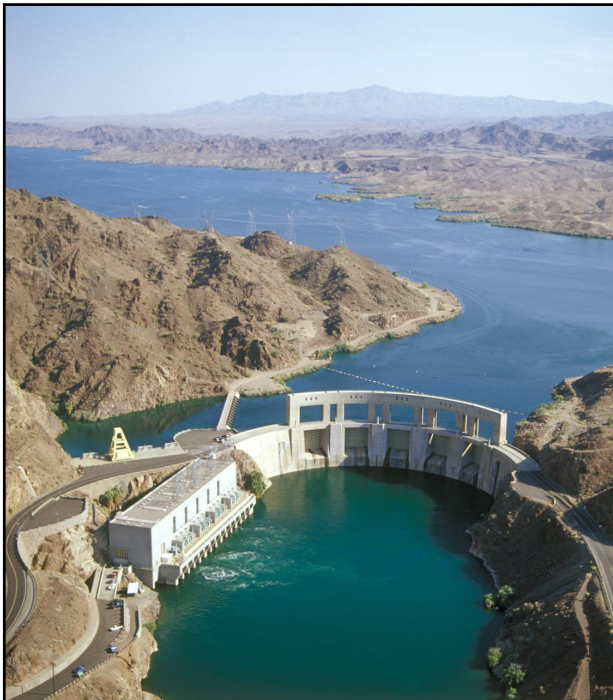
Department Core Functions:

Metropolitan Issues

- District's liaison for MET information
- Support the MWD-OC-MET Delegation in promoting Orange County objectives
- Work with MET staff on the development and management of programs and policies
- Work in collaboration with other MET Member Agencies, in particular the 3 MET Orange County Cities
- Monitor Bay-Delta & Colorado River Activities
- Monitor SDCWA v. MET Rate Litigation Issues and Activities



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Department Core Functions:

Reliability Planning

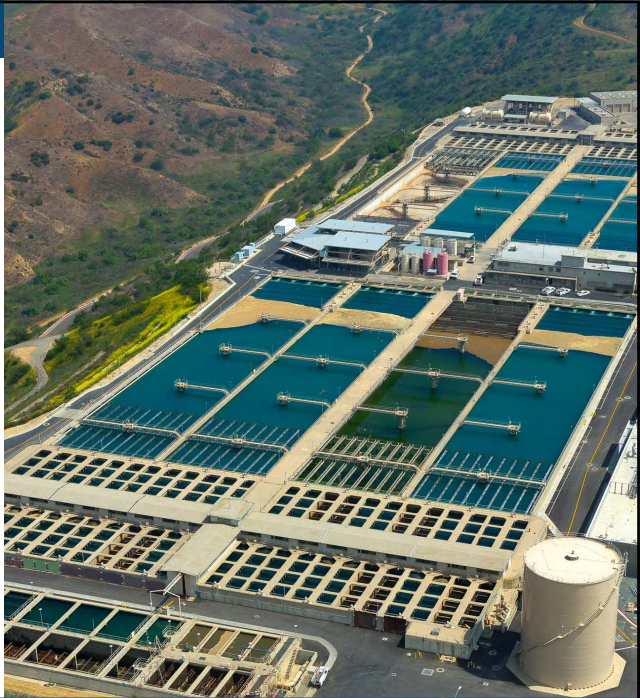
- 💧 Planning and Forecasting
 - 🌱 County-level Supply and Demand projections
- 💧 Water Reliability Program Development and Coordination
 - 🌱 Urban Water Management Plan (UWMP)
 - 🌱 Water Shortage Contingency "Stress Tests"
- 💧 Staff Support with Center Demographic Research (CDR) and Mapping
- 💧 Assist in the analysis of water supply project and programs for OC
 - 🔥 OC Reliability Studies
 - 🔥 Strand Ranch & New Reservoir Benefit/Cost Analysis

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Department Core Functions:

Member Agency Support & Advocacy

- 💧 Local Resources Program (LRP)
Applications, Certification, and Reconciliation
- 💧 Shutdown Coordination & Advocacy at MET
- 💧 Metering Issues Assistance
- 💧 Water Quality Notification and Coordination
- 💧 Engineering and Operations Support
 - 🔥 OC Hydraulic model
- 💧 Support the Coordination of OCWD's Coastal Pumping and Transfer Program (CPTP)
- 💧 WEROC Support
 - 🔥 District Liaison at the County and for MET
 - 🔥 Staff support with member agency operations



Department Core Functions:

Water Supply Program Management

- 💧 Monitoring and Coordinating Supply deliveries
 - 🔥 Replenishment deliveries
- 💧 Submit Cyclic In-Lieu & CUP Certifications
- 💧 MET & MWDOC's Water Supply Allocation Plan
- 💧 Water Use Data Management
 - 🔥 Annual MWDOC Water Supply Report
- 💧 Assist and Support the Development of Local Supply Projects in OC



Department Core Functions:

Rates & Charges

- 💧 Assessment and Calculation of MWD OC's Annual Rates and Charges
 - 🔥 Readiness to Serve (RTS)
 - 🔥 Capacity Charge
 - 🔥 Groundwater Service Charge
 - 🔥 Retail Meter Service Charge
- 💧 Update the Annual Rate Resolution
- 💧 MET Program Rates & Charges
 - 🔥 MET Cyclic In-Lieu Rate
 - 🔥 MET LRP Incentive Rate
- 💧 Assess and Calculate MWD OC's Allocation Surcharge (During Drought Allocation)
- 💧 Monthly Meter Reads and Billing

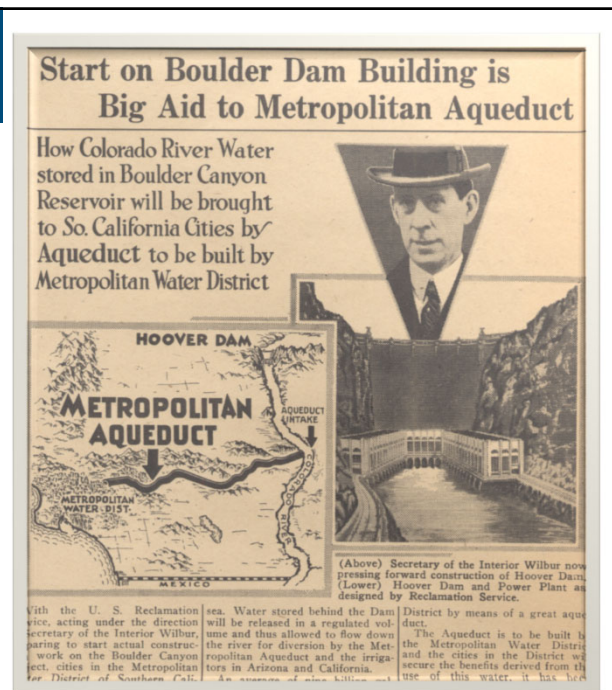
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Accomplishments in 2019

- 💧 Signed a Cyclic In-Lieu Agreement with MET to expand the Pre-delivery of imported water in the OC Basin during high wet years
- 💧 Promoted the increase of MET's Emergency Storage amount from 650 TAF to 750 TAF
- 💧 Encouraged MET to revised its Administrative Code to allow the delivery of Local Water into the MET system during emergency conditions



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Accomplishments in 2019 (cont'd)

- 💧 Supported MET in signing onto the Colorado River Drought Contingency Plan (DCP)
- 💧 Assisted the MET Directors in encouraging establishing new Demand Management Programs with defined objectives and criteria

Department Staff Accomplishments:

- 💧 Chis Lingad received his Master Degree in Environmental Engineering
- 💧 Harvey De La Torre placed on the DWR advisory group for the UWMP development



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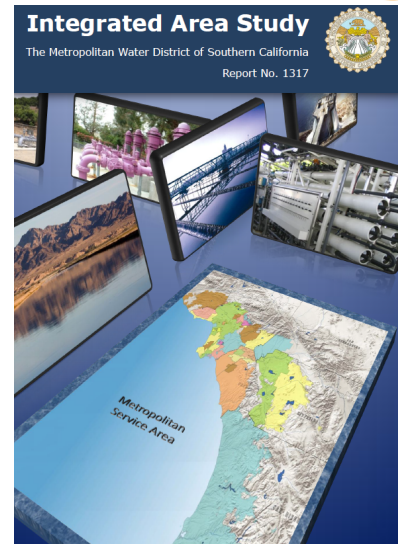
Questions



Why our department does what we do?



- Focus on member agencies to represent them and navigate the various processes and staff at MET to get answers
- Provide Centralized Regional Coordination in OC
 - Work with Anaheim, Fullerton & Santa Ana
 - Centralized OC MET Shutdown Coordination
 - Centralized Support to OC Agencies on Regional issues
- Reliability Planning at local level



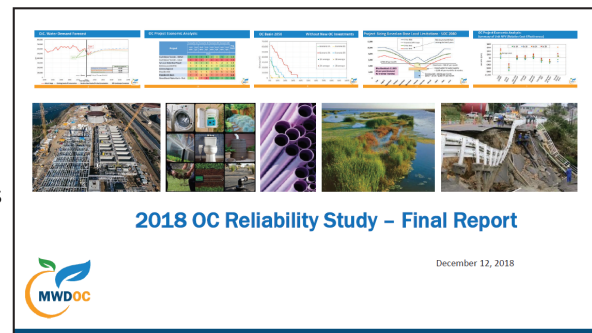
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Department Review: (What We Do)



Work with OC water agencies on improving OC's future water supply reliability

- Reliability Planning and Resource Development
 - Doheny and San Juan Watershed Project coordination – local project integration
 - South OC Emergency Interconnect Capabilities Analysis
 - Conveyance of water in MET pipelines during emergencies
 - Climate change impacts on forecasting
 - Demand modeling
 - Poseidon supplies
 - Strand Ranch supplies
 - Analysis for New Reservoir in Southern California



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Department Review: (What We Do)



Support to Member Agencies

- ✎ Metering issues at service connections
 - ✎ OC-70 (meter testing being planned at Utah State Water Lab)
 - ✎ OC-89
 - ✎ Cost Estimates for CM-10 & CM-12 Meter Replacement
 - ✎ OC-3 Electrical Improvements
- ✎ Water Quality Issues

| | |
|------------|--------------------|
| ✎ Coliform | OC-44, CM-10 |
| ✎ Nitrite | OC-9, OC-35, OC-53 |
| ✎ TDS | South OC |
| ✎ THM | South OC |
- ✎ OC-70 issues with MET
- ✎ Organization of Service Connection Files
- ✎ Center for Demographic Research
- ✎ CalDesal



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Department Review: (What We Do)



MET Shutdown Coordination

- ✎ Diemer Jan 21-27, 2020 (planning started in July)
- ✎ AMP Jan 21-27, 2020
- ✎ OC-88/A Sept 4, 2019 Electrical Work
- ✎ Lake Mathews Jan 7-12, 2019 Rescheduled
- ✎ Lower Feeder Mar 3-9, 2020
- ✎ West OC Feeder Feb 9-16, 2020
- ✎ 2nd Lower Feeder
- PCCP Repair Mar 11-Sept 11, 2019/ Oct 9-16, 2019
- ✎ EOCF#1 Mar 3-9, 2020
- ✎ EOCF#2 Jan 21-27, 2020
- ✎ OC Feeder/OC-44 Feb 18-Sept 7, 2019 (Phase 2)
- Nov 12-19, 2019 Bulkhead Removal (Phase 2)
- Tentative Scheduling for Phase 3 Shutdown

**The most
shutdown
planning in
MWD OC
History!**



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Department Review: (What We Do)



Integration of Local Projects from a Water Quality and Operations Perspective

- Examining the development and use of a hydraulic model for improved understanding of water supply integration and operational issues

WEROC Support

- AGM filled in during Kelly Hubbard replacement
- Admin Building Seismic Retrofit Design for EOC
- Electrical System Upgrade for Building Remodel & Back up Generator for EOC
- South EOC improvements
- Emergency Planning
- Assist with staffing the EOC during activations

Back-up & Assistance to Other Departments

- Computer Room Air Conditioner Replacement
- Design Support for Building Remodel
- Review of potential office relocation

SEISMIC RESILIENCE WATER SUPPLY TASK FORCE
MARCH 30, 2016 AQUEDUCT WORKSHOP AND
FIVE-YEAR ACTION PLAN



The Metropolitan Water District of Southern California
700 N. Alameda Street, Los Angeles, California 90012

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Department Review: (What We Do)



AQMD – Buried Utilities Coalition & asbestos issue

LAFCO Assistance for San Juan Capistrano consolidation with SMWD

South Orange County IRWMP

- Participate as one of the regional foundational members
- Support MWD OC's appointment to the Executive Committee
- Participate on the Management Committee
- Participated in Prop 1 Grant Project Scoring Ad hoc Committee
- Liaison with County Staff

North-Central Orange County IRWMP

- Participate as one of the regional foundational members
- Participated in Prop 1 Grant Project Scoring Ad hoc Committee
- Liaison with County Staff



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Department Review: (What We Do)

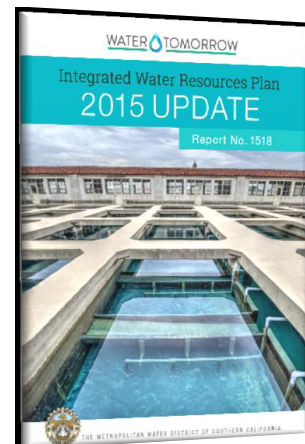


- ▶ **Trustee Activities for AMP, Baker, EOCF#2 & South County Pipeline**
 - ▶ AMP Sales Agreement Enforcement
 - ▶ Participate on SAC Commission and other activities with respect to the Baker Pipeline and Baker Treatment Plant
 - ▶ Advocating and working towards approval for Pump-in and conveyance of local water in the EOCF#2
 - ▶ Working with MET, SMWD and others regarding the disposition of the South County Pipeline
- ▶ **San Juan Basin Authority**
- ▶ **Work on Small Non-Compliant Water Systems in California**
 - ▶ Assistance to Governmental Affairs

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Department Overlap with MET Activities:

- ▶ Review policies and write-ups as requested
- ▶ Sharing of staff support members
- ▶ Cross-training
- ▶ MET Water Quality issues
- ▶ Service connection/metering issues
- ▶ IRP issues
- ▶ Seismic impacts on facilities
- ▶ Planning
- ▶ Bay-Delta
- ▶ Demand Forecasting



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Questions



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*WEROC Activation: Laguna Beach Sewage Spill,
November 27, 2019*



WEROC

Services, Goals, and Strategic Planning

Karl Seckel, Assistant General Manager

Daniel Harrison, WEROC Specialist

Planning and Operations Committee; January 6th, 2020

WEROC Beginnings and Progression



WEROC Indemnification Agreement – Created in 1983 (originally VEPO¹)

Release of
liability
agreement
Mutual
assistance

Duties as Assigned

Event
coordination
Radio
coordination
Steering
Committee

WEROC Coordinator (1 FTE)

**Focus -
Mostly
Internal
WEROC EOC
Readiness**
Emergency
Operation
Centers
Coordination
Meetings
Standardized
Maps (2002)

Wastewater Agencies &
Funding Partners – FY2005/06
(1 FTE+)

Added
Wastewater
Agencies to the
agreement
Identified funding
partners to
support the
program

Member Agency
Support – 2005 to
NOW (2.5 FTE)

**Focus on
Supporting
Member Agency
Preparedness**
NIMS
Implementation

VEPO¹ = Volunteer Emergency Preparedness Organization

2

Overall Commitment

- MWDOC Staff Training and Response Obligation
- Day-to-Day Member Agency Support
- Real Disaster Response Coordination



WEROC Staffing & Responsibilities



WEROC Director of Emergency Management

Staff and Member Agency Training
EOC Exercises – WEROC, Member Agency & OA
Advocacy
Regional & National Planning and Coordination
Grants



WEROC Specialist – Daniel Harrison

Emergency Plans
Radio Systems
EOC Maps
EOC Support Tools

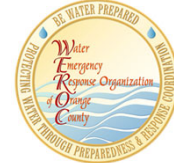


WEROC Senior Admin Assistant – Janine Schunk

Contact Management
Plans/Records Updating and Maintenance
AlertOC
SafetyCenter
EOC Maintenance

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WEROC Today



- **Support Orange County Water and Wastewater Utilities state of readiness for emergency response.**
- **Through coordination and support during and immediately following an emergency, assist the water and wastewater utilities in restoration of systems.**
- **Represent the utility interests as a liaison to outside coordinating partners during all phases of emergency management.**

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WEROC Signatories – 36 Total

CITIES

1. Anaheim
2. Brea
3. Buena Park
4. Fountain Valley
5. Fullerton
6. Garden Grove
7. Huntington Beach
8. La Habra
9. La Palma
10. Laguna Beach
11. Newport Beach
12. Orange
13. San Clemente
14. San Juan Capistrano
15. Santa Ana
16. Seal Beach
17. Westminster

SPECIAL DISTRICTS

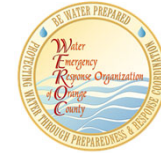
1. Costa Mesa Sanitary District
2. East Orange County Water District
3. El Toro Water District
4. Emerald Bay Service District
5. Irvine Ranch Water District
6. Laguna Beach County Water District
7. Mesa Water District
8. Midway City Sanitary District
9. Moulton Niguel Water District
10. Municipal Water District of OC
11. Orange County Sanitation District
12. Orange County Water District
13. Santa Margarita Water District
14. Serrano Water District
15. South Coast Water District
16. South OC Wastewater Authority
17. Trabuco Canyon Water District
18. Yorba Linda Water District

PRIVATE

Golden State Water Company

POTENTIAL FUTURE SIGNATORIES

- Cities of;
 1. Cypress
 2. Stanton
 3. Tustin
 4. Villa Park
- Special Districts;
 1. Rossmoor-Los Alamitos Area Sewer District
 2. Sunset Beach Sanitary District



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WEROC Budget and Funding Partners

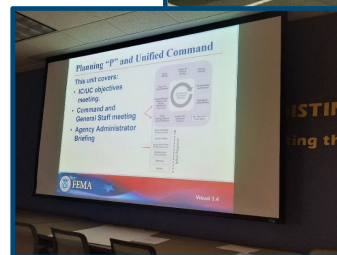
➤ FY 2019-2020 Budget

- Staffing and Programs: \$458,000
- Capital Improvements: \$195,000⁽¹⁾
- TOTAL: \$653,000

➤ Grant Funding Received (2005-2019): \$1.1 M

➤ Funding Agencies

- City of Anaheim
- City of Fullerton
- City of Santa Ana
- Municipal Water District of Orange County
- Orange County Sanitation District
- Orange County Water District
- South Orange County Wastewater Authority



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Benefit of WEROC Services

Preparedness

- Training, Planning and Exercises
- Day to Day Member Agency Support
- WEROC EOC Preparedness
- MWDOC Staff Commitment to Training

WEROC Emergency Response Coordination

- MWDOC Staff Commitment to Respond
- Information Collection/Intelligence Sharing
- Inter-Agency Cooperation
- Resource Needs

Recovery Support

- FEMA Public Assistance Process
- Post Event Secondary Impacts Planning



The Canyon 2 Fire broke out October 9, 2019; it burned up to the North EOC structure.

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WEROC EOC Facility Improvements (South

EOC and MWDOC)

- 800 MHz Radio – completed
- Satellite Phone System - completed
- Seismic Safety for EOC's
- Improving Functionality

Updating Emergency Plans

- WEROC Emergency Operations Plan
- OC Water and Wastewater Multi-Agency Hazard Mitigation Plan

Regional Planning

- Edison & SDG&E Public Safety Power Shutoff (PSPS) Program
- New Dam Inundation Mapping and Emergency Action Plan Requirements
- Member Agency Emergency Planning Requirements Matrix)

Training & Exercises

- Four Exercises between October and January!
- Secured ICS-300 & ICS-400 at no cost

Lessons Learned/Corrective Actions –

Implementation

- Emergency Water Quality Sample Kit (EWQSK)

**Keeping our Agencies at the
Forefront of Preparedness
for Resiliency**

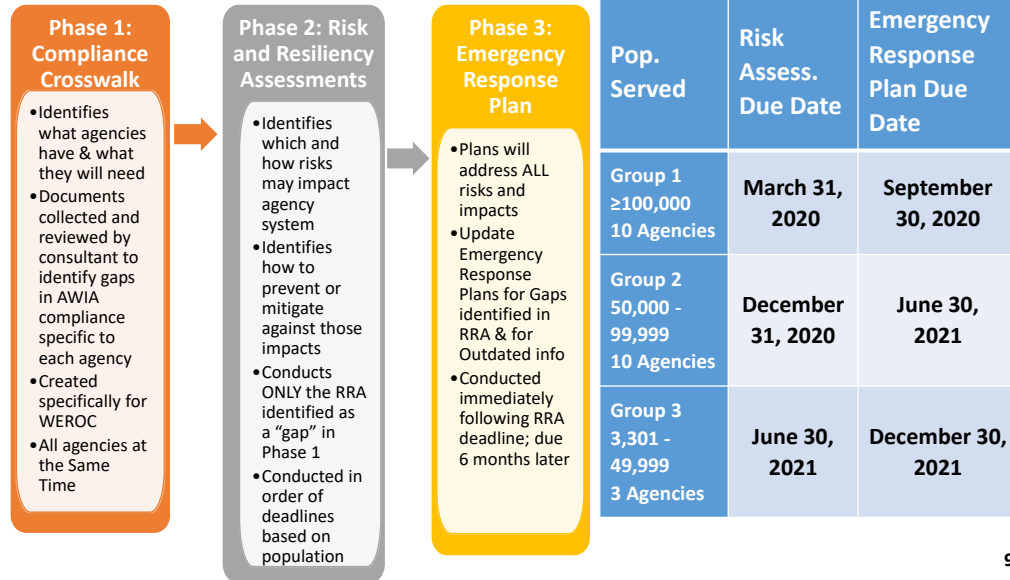


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America's Water Infrastructure Act of 2018 (AWIA)



3-Phase Project spanning 2.5 years



America's Water Infrastructure Act of 2018 (AWIA)



Project Consultant: Herndon Solutions Group (HSG)

- \$2.9 million contract with HSG
- Agency participation:
 - Phase I - 25 agencies
 - Phase II and III - 23 agencies
- Follows industry consensus standards for compliance
- Program to Assist Risk & Resilience Examination (PARRE) tool utilizes J100 AWWA standards and generates results that directly inform the agency of ways to understand their risks
- Agency will be able to access data for update in 5 years before next renewal compliance deadline

America's Water Infrastructure Act of 2018(AWIA)



Phase II:

Risk and Resilience Assessment (RRA)

- 3 workshops with each agency with key staff included
- Discussions include: asset characterization, threat characterization and how they related to each asset, consequence analysis, vulnerability analysis and what actions have been done already to reduce this vulnerability, threat analysis, overall risk/resilience assessment, and how to manage these risks
- Ultimate Goal: to gain an understanding of overall resilience of each agency
- Focus on natural hazards and malevolent threats to potable water systems

Phase III:

Emergency Response Plan (ERP)

- Amount of work dependent on agency's current document and if it need a full update or just add SOPs
- Minimum: all ERP updates will include "AWIA Requirements" chapter to explain how RRA, ERP and other relevant documents meet all regulatory requirements

11

- **Emergency Plan Development**
 - Templates, development, and review
 - Standard plans
 - Specialty plans – Dam Emergency Action Plans
- **Emergency Disaster Finance tools**
 - Forms
 - Standard Contract Language
- **Disaster Training and Exercises**
 - Design and Facilitation**
 - Targeted to individual agencies
 - Support with development
- **Cyber and Information Security support**
 - Operations, SCADA, Billing, Customer Support, IT)
- **Grant Writing Support**
 - UASI
 - Hazard Mitigation

Member Agency Support Opportunities



12

***Thank you for your time.
Please let us know if you have any questions.***

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INFORMATIONAL ITEM

January 6, 2020

TO: Planning & Operations Committee
(Directors Yoo Schneider, Dick, Tamaribuchi)

FROM: Robert Hunter, General Manager

Staff Contact: Karl Seckel

SUBJECT: CDM Smith Analysis of the Costs and Benefits of New 800,000 AF Reservoir Compared to a 400,000 AF Surface Reservoir in Southern California

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receive and file this report.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

A request made at the December 2, 2019 P&O Committee to update the December 2 analysis of the cost-effectiveness of a new 400,000 AF surface storage reservoir in Southern California to consider a reservoir size of 800,000 AF. Comments were provided at the December 2 meeting regarding the conceptual cost estimate used in the analysis so staff provided a range of costs from low to high for the updated analysis and included a comparison to MET water rates projected for 20140 and 2050 from the 2018 OC Water Reliability Study. Only Scenario 3 from the December 2 analysis was used, this being the most optimistic modeling scenario in which the need for new MET water supply was coupled with available surplus water most of the time. Under this optimistic scenario, the average marginal supply benefit would be:

- For the 400,000 AF Reservoir, the annual yield is 25,800 AF per year at a cost of \$4,300 to \$7,800 per AF in 2050, compared to a MET rate of \$2,400 per AF in 2050

| | | | |
|--|----------------------|--------|-----------|
| Budgeted (Y/N): N/A | Budgeted amount: N/A | Core ✓ | Choice __ |
| Action item amount: N/A | Line item: N/A | | |
| Fiscal Impact (explain if unbudgeted): | | | |

- For the 800,000 AF Reservoir, the annual yield is 29,800 AF per year at a cost of \$6,900 to \$12,400 per AF in 2050, compared to a MET rate of \$2,400 per AF in 2050

DETAILED REPORT

Attached is the updated analysis by CDM Smith to respond to questions raised at the December 2 P&O Committee:

1. Would a new 800,000 AF surface reservoir in Southern California be cost-effective? The December presentation analyzed a 400,000 AF reservoir and a 200,000 AF reservoir.
2. The costs appeared to be too high for a new reservoir – what would the cost-effectiveness look like if the conceptual cost for a new reservoir was lowered? The December presentation used an escalated cost of Diamond Valley reservoir, pro-rated by size, and then it was doubled to account for increased cost of permitting today compared to the 1990's. The updated analysis uses both a low and a high cost for a new surface reservoir with the low cost being simply an escalated cost of Diamond Valley on a pro-rated size basis and the high being the escalated cost and then doubled.
3. What were the costs included in the Diamond Valley Reservoir?

Table 1 below summarizes the updated analyses:

Table 1. Summary of Regional Reservoir Utilization and Unit Cost

| Parameter | New Regional 800,000 AF Reservoir | New Regional 400,000 AF Reservoir |
|---|-----------------------------------|-----------------------------------|
| Average Withdrawal (Supply) in 2040 | 13,100 AFY ⁽⁷⁾ | 13,400 AFY ⁽⁷⁾ |
| Average Withdrawal (Supply) in 2050 | 29,800 AFY | 25,800 AFY |
| Maximum Withdrawal (Supply) in 2040 | 440,000 AFY | 250,000 AFY |
| Maximum Withdrawal (Supply) in 2050 | 650,000 AFY | 400,000 AFY |
| Total Annual Reservoir Cost (\$ Million) ¹ | | |
| Low Range Estimate ² | \$205 | \$110 |
| High Range Estimate ³ | \$370 | \$201 |
| Unit Cost in 2040 (\$/AF) ⁴ | | |
| Low Range Estimate | \$15,600 | \$8,200 |
| High Range Estimate | \$28,200 | \$15,000 |
| Unit Cost in 2050 (\$/AF) ⁵ | | |
| Low Range Estimate | \$6,900 | \$4,300 |
| High Range Estimate | \$12,400 | \$7,800 |
| MET Untreated Water Rate (\$/AF) | | |
| 2019 Actual Rate | \$731 | \$731 |
| 2040 Projected Rate ⁶ | \$1,720 | \$1,720 |
| 2050 Projected Rate ⁶ | \$2,400 | \$2,400 |

1) Represents capital cost annualized using 3.6% financing for 30 years plus annual O&M cost, in current-year dollars with no escalation or discounting.

- 2) Low range unit cost is based on actual MET DVL costs escalated to 2018 dollars.
- 3) High range unit cost is assumed to be significantly greater than MET DVL costs, accounting for higher permitting and siting costs.
- 4) Represents total annual reservoir cost (\$M) divided by average withdrawal (AFY) in 2040.
- 5) Represents total annual reservoir cost (\$M) divided by average withdrawal (AFY) in 2050.
- 6) Projected MET water rates based on 2018 OC Water Reliability Study, which assumed future costs for MET's LRP program, water transfers and MET's share of implementation of the Delta Conveyance project.
- 7) The average yields are essentially the same, except for minor nuances in the modeling decisions of when and where to put and take storage

Only Scenario 3 from the December 2 analysis was used, this being the most optimistic modeling scenario in which the need for new MET water supply was coupled with available surplus water most of the time. Under this optimistic scenario, the average marginal supply benefit would be:

- For the 400,000 AF Reservoir, the annual yield is 25,800 AF per year at a cost of \$4,300 to \$7,800 per AF in 2050, compared to a MET rate of \$2,400 per AF in 2050
- For the 800,000 AF Reservoir, the annual yield is 29,800 AF per year at a cost of \$6,900 to \$12,400 per AF in 2050, compared to a MET rate of \$2,400 per AF in 2050

Comments by Staff

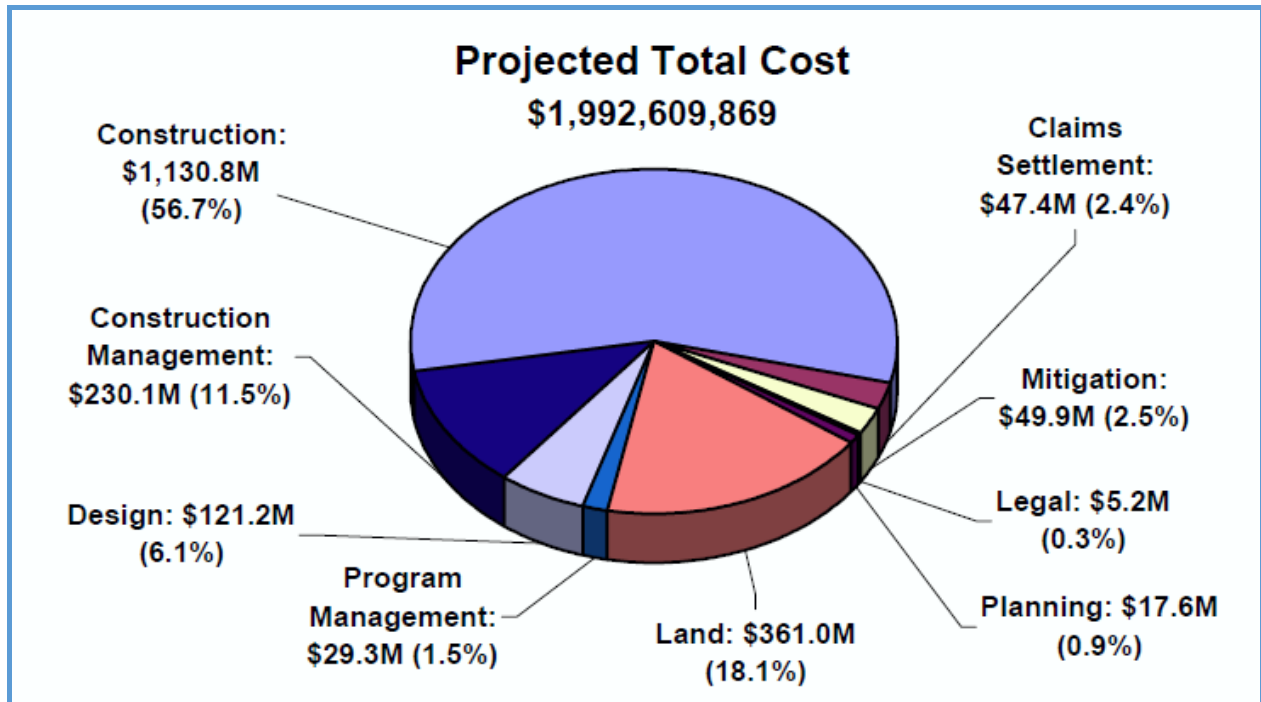
As pointed out in the CDM-Smith analysis, the cost-effectiveness of a new reservoir storage in Southern California is based on three things:

- (1) the capital and O&M cost of the new reservoir
- (2) the need for new water supply, which is a function of future water demand and existing/planned water supplies; and
- (3) the availability of surplus imported water for storage purposes

If the need for new water supply is low (because future water demands can be mostly met by existing/planned water supplies), but plentiful amounts of surplus imported water are available to store, then the new reservoir would remain mostly full and not be utilized often enough for it to be cost-effective. Alternatively, if the need for new water supply is high (because water demands cannot always be met by existing/planned water supplies, but there is not enough surplus imported water to store, then the reservoir would not have enough water for use in dry years to be cost-effective.

Staff had an opportunity to discuss the analysis with MET's General Manager Jeff Kightlinger. Mr. Kightlinger's position is that MET currently has sufficient storage capacity, but is seeking more supplies to deal with an uncertain future. Mr. Kightlinger emphasized that storage in Northern California may be necessary, but he did not envision MET building additional surface storage in Southern California.

One other item raised at the December meeting, was the cost components of Diamond Valley Reservoir project. Staff has been using \$2.0 billion as the cost around the year 2000. The actual MET Board report on the final project costs, had the following breakdown:





Memorandum

To: Karl Seckel, MWDOC

From: Dan Rodrigo, CDM Smith

Date: December 30, 2019

Subject: Additional Evaluation of New MET Surface Reservoir

Purpose

CDM Smith prepared a technical memorandum to MWDOC on November 25, 2019 documenting the results of evaluating a new regional 400,000 acre-foot (AF) surface reservoir in terms of MET supply and cost-effectiveness. The findings indicated that the cost-effectiveness of new reservoir storage is based on three things: (1) the capital and O&M cost of the new reservoir; (2) the need for new water supply, which is a function of future water demand and existing/planned water supplies; and (3) the availability of surplus imported water for storage. If the need for new water supply is low (because future water demands can be mostly met by existing/planned water supplies), but plentiful amounts of surplus imported water is available to store, then the new reservoir would remain mostly full and not be utilized often enough for it to be cost-effective. Alternatively, if the need for new water supply is high (because water demands cannot always be met by existing/planned water supplies, but there is not enough surplus imported water to store, then the reservoir would not have enough water for use in dry years to be cost-effective.

Based on multiple scenarios of climate change impacts (from low to high) and assumptions regarding MET's planned and proposed regional water supplies, the evaluation of a new regional 400,000 AF reservoir indicated it was not cost-effective. Even under the best hydrologic and future water supply scenario, which assumed significant climate change impacts (which has a high need for new water supply) and implementation of Delta Conveyance (which provides for greater surplus of State Water Project water during normal and wet years for storage) the unit cost was significantly greater than MET's untreated water rate. On December 2, 2019, MWDOC staff presented to the MWDOC Board of Directors' Planning and Operations Committee the findings from CDM Smith's work as well as other insights regarding storage in California and MET's service area. One of the Director comments received at this Committee meeting was that an 800,000 AF should have been evaluated. As such, MWDOC instructed CDM Smith to evaluate a new regional 800,000 AF reservoir.

Storage Evaluation Assumptions

The following assumptions were made for the evaluation of a new regional 800,000 AF reservoir:

1. Significant climate change impacts (the best assumption for needing new water supply)
2. Delta Conveyance implemented by 2035 (the best assumption for available surplus imported water to store during wet and normal years)
3. All storage volume is dedicated for use during dry years and droughts, with annual put and take capacity of 800,000 AFY, similar to MET's Diamond Valley Lake (DVL)

4. Total capital cost ranging from low range of \$3 billion (assuming MET's actual cost for DVL plus escalation to 2018 dollars) to a high range of \$6 billion (assuming much higher costs to account for more difficult permitting and higher location siting costs)
5. Total O&M costs of \$40 million per year
6. Financing of capital cost at 3.6% (similar to MET's financing of DVL) for 30 years
7. The priority of filling and using water stored in the new reservoir would be after all existing MET storage (reservoir and groundwater)

Storage Evaluation Results

Figure 1A presents the probability of ending-period storage for the new regional 800,000 AF reservoir, while Figure 1B shows the probability of ending-period storage for the previously evaluated new regional 400,000 AF reservoir.

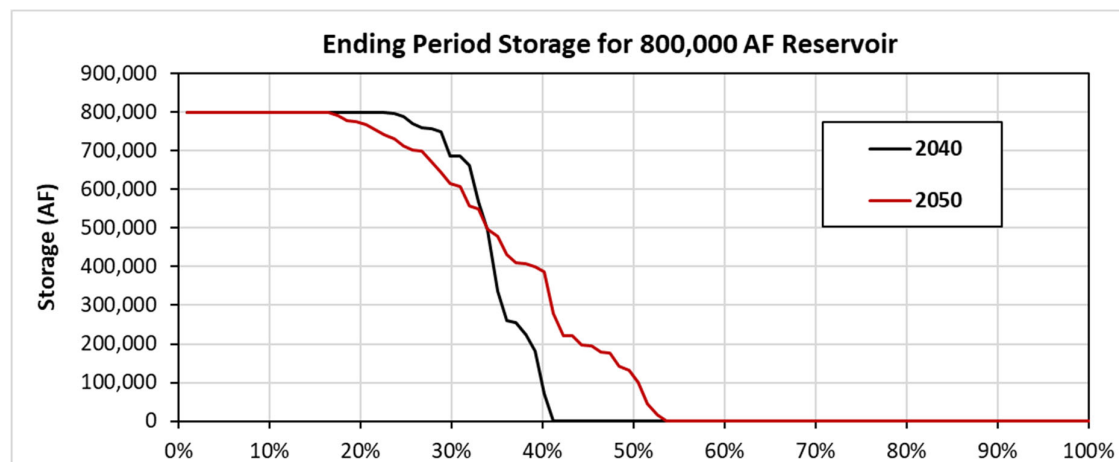


Figure 1A. Ending Period Storage for New Regional 800,000 AF Reservoir

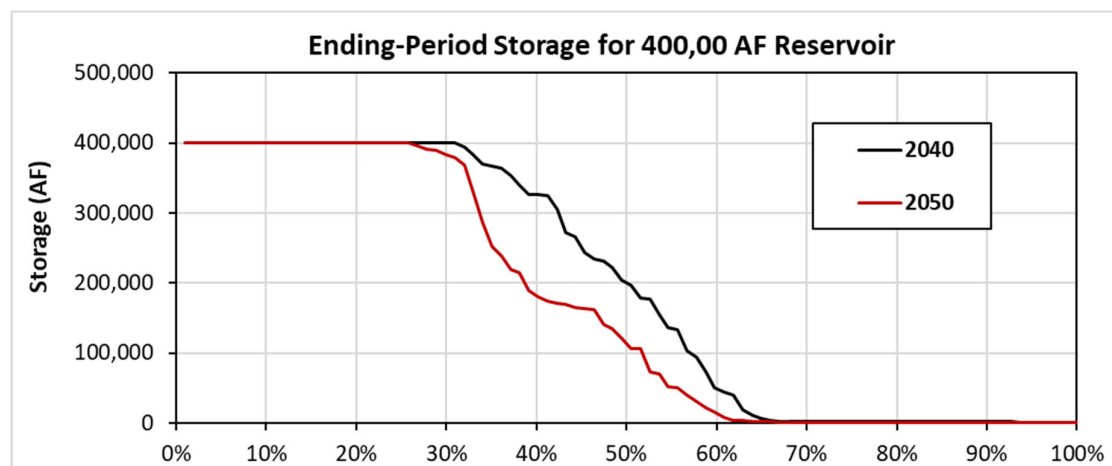


Figure 1B. Ending Period Storage for New Regional 400,000 AF Reservoir

In year 2040, it is estimated that the new 800,000 AF reservoir would be at full storage volume approximately 25% of the time; while in year 2050 the new 800,000 AF reservoir would be at full storage volume approximately 17% of the time. This compares to the 400,000 AF reservoir

results of being at full storage volume 31% of the time in 2040 and 26% of time for 2050. **This implies that there is slightly less surplus water to fill the 800,000 AF reservoir compared to the 400,000 AF reservoir.**

Figure 2A presents the probability of annual storage withdrawals for the new MET 800,000 AF reservoir, while **Figure 2B** shows the probability of annual storage withdrawals for the previously evaluated new MET 400,000 AF reservoir.

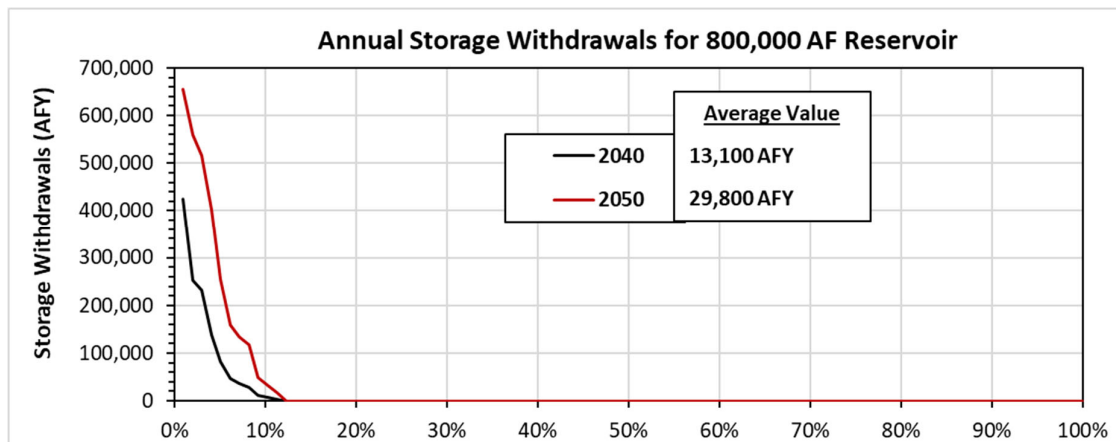


Figure 2A. Storage Withdrawals for New Regional 800,000 AF Reservoir

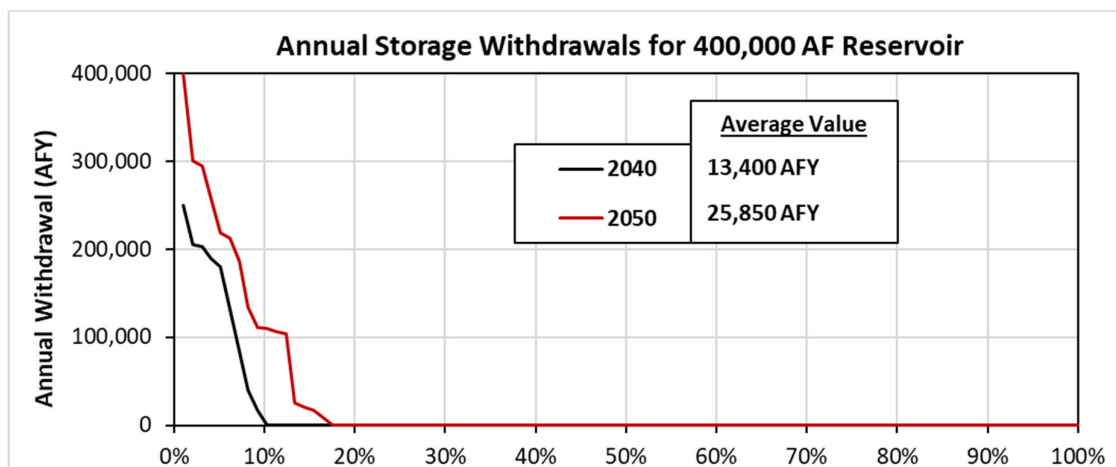


Figure 2B. Storage Withdrawals for New Regional 400,000 AF Reservoir

For the 800,000 AF reservoir, the maximum annual storage withdrawal never exceeds 440,000 AFY in 2040 and never exceeds 650,000 AFY in 2050. The average annual storage withdrawals (across all hydrologic conditions) for the 800,000 AF reservoir are 13,100 AFY in 2040 and 29,800 AFY in 2050. By comparison, the average annual storage withdrawals for the 400,000 AF reservoir are 13,400 AFY in 2040 and 25,850 AFY in 2050. **This implies that while the peak withdrawals from the 800,000 AF reservoir are greater than 400,000 AF reservoir, the annual average withdrawals are similar between the two sizes—meaning that the 800,000 AF reservoir does not provide more water supply than the 400,000 AF due to constraints in available surplus imported water.**

Cost-Effectiveness of New Regional 800,000 AF Reservoir

Based on the estimated capital and O&M costs for the new regional 800,000 AF reservoir and the probability of supply yield (i.e., annual reservoir withdrawals), a current-year unit cost can be estimated. Current-year dollars do not include future escalation or discounting. To estimate the current-year unit cost, the capital cost of range of \$3.0 to \$6 billion was amortized assuming a finance rate of 3.6% over 30 years. This results in an annualized capital cost ranging from \$165 to \$330 million. When the estimated O&M cost of \$40 million per year is added, the total annual cost for the reservoir ranges from \$205 to \$370 million. To calculate the current-year unit cost for 2040 and 2050, the total annual reservoir cost is divided by the average annual reservoir withdrawal over all hydrologic conditions. **Table 1** presents the total annual reservoir costs, reservoir withdrawals, and unit cost for the 800,000 AF and 400,000 AF reservoirs.

Table 1. Summary of Regional Reservoir Utilization and Unit Cost

| Parameter | New Regional 800,000 AF Reservoir | New Regional 400,000 AF Reservoir |
|---|--------------------------------------|--------------------------------------|
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| Total Annual Reservoir Cost (\$ Million) ¹ | | |
| Low Range Estimate ² | \$205 | \$110 |
| High Range Estimate ³ | \$370 | \$201 |
| Unit Cost in 2040 (\$/AF) ⁴ | | |
| Low Range Estimate | \$15,600 | \$8,200 |
| High Range Estimate | \$28,200 | \$15,000 |
| Unit Cost in 2050 (\$/AF) ⁵ | | |
| Low Range Estimate | \$6,900 | \$4,300 |
| High Range Estimate | \$12,400 | \$7,800 |
| MET Untreated Water Rate (\$/AF) | | |
| 2019 Actual Rate | \$731 | \$731 |
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1) Represents capital cost annualized using 3.6% financing for 30 years plus annual O&M cost, in current-year dollars with no escalation or discounting.

2) Low range unit cost is based on actual MET DVL costs escalated to 2018 dollars.

3) High range unit cost is assumed to be significantly greater than MET DVL costs, accounting for higher permitting and siting costs.

4) Represents total annual reservoir cost (\$M) divided by average withdrawal (AFY) in 2040.

5) Represents total annual reservoir cost (\$M) divided by average withdrawal (AFY) in 2050.

6) Projected MET water rates based on 2018 OC Water Reliability Study, which assumed future costs for MET's LRP program, water transfers and MET's share of implementation of the Delta Conveyance project.

Conclusion

In 2040, the current-year unit cost of a new regional 800,000 AF reservoir is estimated to range from \$15,600/AF to \$28,200/AF, which is about 2 times the unit cost of a new 400,000 AF reservoir. By 2050, the current-year unit cost of the 800,000 AF reservoir ranges from \$6,900/AF to \$12,400/AF, which is about 1.6 times the unit cost of a new 400,000 AF reservoir.

When compared to projected MET untreated water rates, the new 800,000 AF reservoir is:

- 9 times greater than MET's water rate in 2040 and 4 times greater in 2050, based on low range cost estimate of the reservoir; and
- 16 times greater than MET's water rate in 2040 and 7 times greater in 2050, based on the high range cost estimate of the reservoir.

Therefore, it is concluded that a new regional 800,000 AF reservoir is not cost-effective when compared to MET's projected untreated water rates. It should also be noted that when compared to other supply options evaluated in the 2018 OC Water Reliability Study, the new regional 800,000 AF reservoir would be greater in unit cost as well.

| ENGINEERING & PLANNING | |
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| Doheny Ocean Desalination Project | <p>On June 27, 2019 the SCWD Board certified the Final Environmental Impact Report (FEIR) for the Phase I Local Doheny Ocean Desalination Project, which would produce up to 5 million gallons per day (MGD) of new, drinking water supplies for the area. SCWD subsequently filed its Notice of Determination and is beginning the permitting process with various permitting agencies.</p> <p>On July 11, 2019 SCWD's Board adopted a resolution pursuing a second year (round) of the USBR WaterSMART Desalination Construction Program grant funding. SCWD is eligible to receive a cumulative total of \$20 million for the Project from USBR. Approximately two to six awards are expected to be made by USBR with up to \$12 million available in this round. The recipient must provide at least 75% of the total project costs. Reclamation has recently indicated that an initial \$8.3M is still with Congress and will be part of a Federal budget approval.</p> <p>SCWD efforts have been successful and AB 1752 was signed into law on October 3, 2019, clearing the way for a DBO award using SRF funding.</p> <p>On October 23, 2019 the US EPA invited SCWD to submit a loan application for a Water Infrastructure Finance and Innovation Act (WIFIA) low interest loan in the amount of \$60 million for the Doheny Ocean Desalination Project.</p> <p>On October 30, 2019, South Coast held a workshop on a Peer Review Cost Estimate for the Doheny Desal Project. Rich Svindland, of California American Water (CalAm), who helped develop the 6.4 MGD Monterey Ocean Desal Project using slant well technology, completed a peer review cost estimate for the Doheny Ocean Desal Project. A workshop was held on October 30, 2019 to present the Peer Review by CalAm based on their experience in developing and <u>bidding</u> a project in Monterey (that plant has not been constructed due to permitting and legal issues). The CalAm presentation and review of the previous Doheny Desal cost estimate by GHD indicated some differences in capital and operating costs including a higher level of staffing for the plant as suggested by CalAm. Overall the cost differences resulted in estimated increased costs:</p> <ul style="list-style-type: none"> • Capital costs were estimated at 5.4% higher • O&M costs were estimated at 15.8% higher • Overall, the unit cost of water increased from \$1556 per AF to \$1805 per AF, an increase of \$249 per AF, an overall increase of about 16.0% |

On November 14, South Coast WD held a workshop on the risks of slant well technology. Geoscience Support Services provided the bulk of the technical information on the use of vertical wells compared to slantwells. The main problems with vertical wells in a small basin such as the coastal portion of the San Juan Groundwater basin are:

- The potential for well screen blockage due to minerals and biofouling because the well screens do not stay submerged in water 100% of the time compared to slantwells.
- Lost water production due to declining groundwater levels.
- Potential interference from other nearby wells.
- Lower production due to aquifer thickness.

The main disadvantage of slantwells is:

- The cost of maintenance is high because the rigs to pull and replace pumps is on a slant.
- The unknown regarding the concentrated iron and manganese laden water found during the pilot testing.

Overall, the Geoscience report recommended slantwells for this type of application. Not all in attendance concurred as SMWD General Manager Dan Ferons suggested; additional groundwater basin exploration with respect to the bedrock high transmissivity, getting a third independent hydrogeological opinion on the best approach for the lower basin coastal area, and potentially installing one vertical well and one slantwell for test purposes.

Possibly the biggest issue discussed at the meeting was the apparent South Coast WD Board opinion that 5 mgd was too much capacity for South Coast WD needs and without other partners, they may consider a plant size as small as 2.5 mgd without any oversizing to protect the potential for an ultimate 15 mgd project. The use of excess recycled supplies potentially to be blended with ocean supplies was also discussed with the Latham wastewater plant in near proximity to the Doheny Desal Project.

Next Steps by South Coast WD:

1. Look for partners
2. Project Delivery – SCWD has begun working with Hawkins Delafield and Wood, and GHD on development of several documents for a DBO contract including; Request for Statement of Qualifications (SOQ) for potential bidders, contract documents, and a RFP package.
3. High Level Schedule (has slipped a bit due to the Regional Board schedule)

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| | <ul style="list-style-type: none"> a. Environmental permitting Late Summer 2020 b. DBOM Contract Develop Early 2020 c. DBOM Contract Award Early 2021 d. Construction Early 2023 |
| MET 2019-20 Shutdown Schedule | <p>MWDOC staff have held many meetings with MET and MWDOC member agencies since July 2019 to review the MET 2019-2020 Shutdown Schedule. One of the proposed shutdowns involves the complete shutdown of the Diemer Water Treatment Plant. MET will be completing four projects during the shutdown to; add metering, convert the ozonation system cooling water from raw water to treated water, inspect the Diemer bypass pipeline, and eliminate a weir notch to increase the clearwell water storage from a restricted 18 MG capacity to its full 30 MG capacity.</p> <p>MWDOC staff have worked with potentially affected agencies and MET to determine what options are available to accommodate a Diemer shutdown given the State Water Board's intention to reduce PFOA & PFOS (collectively referred to as PFAS) Response Level (RL) triggers; which have the potential of taking as many as 100 wells in OC out of service. Some agencies have already taken wells out of service if they already had levels of PFOA and PFOS above the existing Notification Level (NL). If the response levels are not changed in January, the groundwater agencies potentially impacted by PFAS can accommodate the planned January 2020 7-day shutdown.</p> <p>MWDOC is continuing to work with EOCWD to secure a back-up supply of water that can be accessed if the amount of water they have in storage begins to run low during the 7-day shutdown. This is not anticipated, but in an abundance of caution, a pumped emergency interconnection is being secured.</p> <p>MET also has a West Orange County Feeder shutdown to replace a number of service connection valves that are past their useful life and a shutdown to work on a specific Anaheim service connection (A-6) to replace valves and a leaking venturi meter. South Coast had planned a shutdown of the Joint Transmission pipeline in December that could have carried over into early January, thus conflicting with the Diemer Shutdown. Buena Park has several wells out of service for maintenance/repairs which has the potential to conflict with the West Orange County Feeder shutdown.</p> <p>Most recently a December 4, 2019 conference call with staff from MWDOC, MET, and Golden State WC was held to review the recent October 2019 PCCP inspection shutdown findings for the 2nd Lower Feeder. The inspection revealed additional wire breaks in a section of pipe with no previous record of wire breaks. MET is currently accelerating the replacement of this section of the 2nd Lower Feeder immediately west of El Dorado High School on</p> |

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| | <p>Brookhaven Ave. which may be down between 4 weeks to 5 months depending upon how much pipe is replaced. This work is currently in design and more details will be forthcoming.</p> <p>All of the items noted above have made this one of the most, if not the most, difficult years ever for the coordination of shutdowns between MET and our agencies.</p> <p>As of December 22nd, it appears that all issues of conflict have been resolved and that the current proposed dates for shutdowns are:</p> <ul style="list-style-type: none"> (1) Diemer Plant shutdown will be January 21-27, 2020 (2) The entire West Orange County Feeder shutdown February 9 – 16, 2020, with the east-west portion coming back online Feb 12th and the north-south portion coming back online Feb 17th <p>MET has also indicated they would like to hold a second Diemer shutdown in March (assuming the PFAS Response Levels have not been adopted) to complete their work. This may be the last time MET will be able to shut down the Diemer Plant for the next 4 to 5 years depending on how fast PFAS treatment can be brought on-line.</p> <p>With respect to the PFOA & PFOS Response Level adoption by the SWRCB, both CalEPA and DDW recently (December 19th) stated a willingness to consider delaying an announcement of new Response Levels until immediately after the planned MET Diemer Plant shutdown currently scheduled for the last week in January 2020, but no further. This is good news, but may eliminate the ability for a second Diemer shutdown in March 2020. This announcement delay would be a change from DDW's intent to lower the Response Levels the week of January 6th.</p> <p>OCWD has been very responsive in supporting MWDOC and MET during their discussions with the regulatory organizations in attempting to get a delay to accommodate the shutdowns. OCWD has indicated the following:</p> <ul style="list-style-type: none"> • With an awareness of the alternatives OCWD has presented to them, DDW intends to follow OEHHA's standing recommendations in setting the Response Level, which would lead to RLs of 10 ppt for PFOA and 40 ppt for PFOS. • Shortly after setting the new RLs, DDW plans to essentially re-issue the statewide testing orders to water systems with PFAS detections via a single general order under the authority provided by AB 756. The results of testing under these new orders would be subject to the AB 756 requirements (AB 756 establishes requirements for public |
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| | <p>agencies to notify their customers regarding the presence of PFAS in water sources).</p> <ul style="list-style-type: none"> • Additional drinking water well testing orders are likely to follow later in 2020 |
| SMWD Rubber Dams Project (San Juan Watershed Project) | <p>Santa Margarita WD continues to focus on diversifying its water supply portfolio for south Orange County residents, businesses, schools, and visitors. On June 21, 2019, the San Juan Watershed Environmental Impact Report (EIR) was approved.</p> <p>The original project had three Phases; Phase 1 was three rubber dams recovering about 700 AFY; Phase 2 added up to 8 more rubber dams with the introduction of recycled water into the creek to improve replenishment of the basin for up to 6,120 AFY, and Phase 3 added more recycled water topping out at approximately 9,480 AFY. Under this arrangement, most or all of the production and treatment involved the existing San Juan Groundwater Desalter with expansions scheduled along the way to increase production over 5 mgd. Fish passage and regulatory hurdles to satisfy subsurface travel time requirements are presenting some difficulties.</p> <p>SMWD is working with the Ranch on the next phase of development within SMWD and have access to riparian groundwater from the Ranch. Furthermore, they have discovered that the local geology has high vertical percolation rates and sufficient groundwater basin travel time to potentially allow percolation of treated recycled water. SMWD is of opinion that groundwater production and treatment of the groundwater can be initiated in a relatively short time-frame while permitting for percolation augmentation using recycled water from the nearby Trampas reservoir can be added as permitting allows. They believe the new project area may be able to ultimately produce 4,000 to 5,000 AF per year; they believe the original project will continue to be developed for production out of the wells and treatment provided by San Juan Capistrano as the two agencies merge. Ultimate production out of the basin could exceed 10,000 AF per year if all goes well.</p> |
| MWDOC Workshop with SOC Agencies on Nov 6 | <p>MWDOC held a workshop with the SOC Agencies to focus on extension/expansion of the existing South Orange County Emergency Service Program with IRWD and to discuss emergency needs and additional options for emergency water or base-loaded projects for South OC, and to discuss the implications of integrating new local water supply sources into the regional distribution system. The following projects were discussed:</p> <ul style="list-style-type: none"> • Emergency Services Program Extension/Expansion with IRWD • Groundwater from OCWD and/or other OC Basin Producers |

| | |
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| | <ul style="list-style-type: none"> • Pump-in to the EOCF#2 • PFAS and Water Quality expectations • Doheny Desal • Poseidon Desal • San Juan Basin IPR • Irvine Lake Storage • Strand Ranch • Peters Canyon Treatment Plant • Oceanus/Camp Pendleton • Reliance on MET <p>Black & Veatch and Hazen Sawyer provided input on the need for various water quality investigations prior to bringing new supply projects into operations. Black & Veatch also discussed the work they are conducting for MWDOC on development of a hydraulic model of the regional water system in Orange County as a tool to assist future evaluation of operational strategies. There appears to be support from the SOC agencies for such a model that could be accessed by any project proponent.</p> <p>Staff is in the process of distilling information from the meeting and will be bringing back a report to a future P&O meeting.</p> |
| South Orange County Emergency Service Program | <p>MWDOC, IRWD, and Dudek have completed the initial draft study to determine if the existing IRWD South Orange County Interconnection capacity for providing emergency water to South Orange County can be expanded and/or extended beyond its current time horizon of 2030.</p> <p>Based on the South OC meeting held on April 11, 2019, a spin-off meeting was held with MWDOC, Dudek and operations staff from MNWD and South Coast WD. The purpose was to involve the operators to determine the flexibility of the SOC agencies to deal with variable flows coming from IRWD as outlined in the study. The flows from IRWD to SOC are dependent on the internal demands within IRWD and so will vary from hour to hour and day to day. The discussions indicated that the SOC agencies have considerable flexibility to deal with this situation. The operations group also had several alternatives they thought should be researched by Dudek and MWDOC. Follow-up on these options have been pursued.</p> <p>Dudek participated in the November 6 workshop to re-engage with the SOC agencies on this project. Support from the agencies was expressed to take a small next step to install Variable Frequency Drives at a pump station within IRWD which would be paid for by SOC to help move water from the IRWD system to SOC in an emergency. The Variable Frequency Drives will provide</p> |

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| | more flexibility to the IRWD operations staff to allow additional water to be sent to SOC while meeting all of the IRWD needs. |
| Strand Ranch Project | Staff from MWDOC and IRWD met to discuss how to capture the benefits that can be provided by the development of “extraordinary supplies” from the Strand Ranch Project. The meeting was beneficial in understanding each other’s positions relative to emergency use and drought protection. Additional work is required based on the exchange of information and another meeting will be set. |
| Poseidon Resources Huntington Beach Ocean Desalination Project | <p>The Santa Ana Regional Water Quality Control Board (SARWQCB) continues to work with Poseidon on renewal of the National Pollutant Discharge Elimination System (NPDES) Permit for the proposed HB Desalination Project.</p> <p>At the December 6, 2019 SARWQCB meeting in Huntington Beach, Regional Board staff conducted a workshop on the renewal of the NPDES permit for the proposed desalination facility. Along with the NPDES permit renewal, the facility requires a California Water Code section 13142.5(b) determination in accordance with the State’s Ocean Plan (a.k.a. the Desalination Amendment). The workshop reviewed the proposed facility, the draft renewal of the NPDES permit, and the associated draft Water Code section determination. To make a determination consistent with the Desalination Amendment the Regional Board is required to analyze the project using a two-step process:</p> <ol style="list-style-type: none"> 1. Analyze separately as independent consideration a range of feasible alternatives for the best available: <ol style="list-style-type: none"> a. Site b. Design c. Technology d. Mitigation Measures <p>to minimize intake and mortality of all forms of marine life.</p> <ol style="list-style-type: none"> 2. Then consider all four factors collectively and determine the best combination of feasible alternatives. <p>Regional Board staff reviewed hundreds of documents and input from both an independent reviewer and a neutral 3rd party reviewer to develop the tentative Order and proposed Water Code section 13142.5(b) determination.</p> <p>The key areas required by the Ocean Plan on which the Santa Ana Water Board is required to make a determination, includes:</p> <ul style="list-style-type: none"> • Facility onshore location; |

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| | <ul style="list-style-type: none"> • Intake considerations including subsurface and surface intake systems; • Identified need for the desalinated water; • Concentrated brine discharge considerations; • Calculation of the marine life impacts; and • Determination of the best feasible mitigation project available. <p>In evaluating the proposed project, Santa Ana Regional Board staff interpreted “the identified need for the desalinated water” as whether or not the project is included in local area water planning documents, rather than a reliability need as analyzed in the OC Water Reliability Study. The Regional Board staff referenced several water planning documents; Municipal Water District of Orange County’s (MWDOC) 2015 Urban Water Management Plan (UWMP), the OC Water Reliability Study, OCWD’s Long Term Facilities Plan, and other OCWD planning documents in their evaluation of Identified Need.</p> <p>The workshop was heavily attended. There were a considerable range of views expressed at the meeting. Several of the SARWQCB members were somewhat confused about the evaluation of Identified Need for the project (inclusion in local water planning documents vs. an identified reliability need for the project) and requested staff to help them understand the issue better.</p> <p>The Regional Board schedule for the permit is:</p> <p>Final Permit Anticipated issuance at the April 3, 2020 meeting</p> <p>Assuming success, Poseidon would then seek its final permits from the California Coastal Commission (CCC). The CCC has committed to reviewing the permit within 90 days of the SARWQCB NPDES permit issuance (CCC permit issuance estimated to be Summer 2020).</p> |
| Trampas Canyon Dam and Reservoir | <p>Construction of Trampas Canyon Dam and Reservoir by SMWD, Orange County's largest recycled water reservoir, is on track to be completed in the summer of 2020. The 5,000 AF reservoir will store recycled water in low demand months to provide supplies to SMWD and other agencies in the summer periods. The dam and pipeline phase of the project is 68% complete. The pump station construction contract was awarded to Kingmen Construction on November 22, 2019 for \$3.356 million. Substantial completion of the pump station is anticipated in July 2020.</p> |
| Benefits of Additional Surface Storage in Southern California | <p>CDM Smith and staff are working on a technical memo that is a spin-off from the 2018 Orange County Water Reliability Study (2018 OC Study). The work will evaluate a conceptualized new MET surface reservoir in terms of overall ability to provide additional supply yield under a number of scenarios. The modeling from the 2018 OC Study will be used to evaluate the use of new</p> |

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| | storage, the potential yield and the costs of the yield from the reservoir. A full staff report is included in the P&O Committee for Dec 2. |
| Meetings | <p>Charles Busslinger attended Southern California Edison's (SCE) Fall 2019 Power Briefing on December 4, 2019.</p> <p>Rates - Average rate increases of 3% go into effect in January 2020. SCE is petitioning the CPUC for another 6% increase in April 2020 followed by another 3% for the beginning of 2021.</p> <p>Public Safety Power Shutoffs (PSPS) - Approximately 25% of SCE's service area is in high fire risk areas. SCE is currently focusing on the following areas:</p> <ol style="list-style-type: none"> 1. Vegetation Management 2. Public Safety Power Shutoffs 3. Deploying 222 monitoring cameras & 850 weather stations by 2020. 4. Advanced Weather Modeling to help with PSPS. <p>SCE is also replacing 600 miles of bare conductor cables with insulated wire by 2020 to help with grid hardening (SCE's service area has 12,635 miles of transmission lines). SCE is also replacing pole mounted fuses that were found to spark when blown, and installing new technology to sectionalize circuits to reduce the number of customers affected by PSPS.</p> <p>Pathway 2045 – is SCE's 'blueprint' (or what SCE believes will be necessary) in order to attain California State goals of carbon neutrality and reduction in greenhouse gas (GHG) emissions and air pollutants that are required by SB 350 & SB-100. To achieve the mandated 2045 requirements requires <u>a complete transformation of California's economy</u>:</p> <ul style="list-style-type: none"> • Decarbonize 100% of retail electrical sales (i.e. all sales to both bundled and direct access customers, but excluding sales to public power customers or inter-changes with other utilities) • 75% of vehicles will need to be electric vehicles • 70% of all buildings (including retrofitting of existing buildings) to all electric (replace natural gas water and space heating systems) • 43% of remaining non-electric energy switched to low-carbon fuels (biofuels and hydrogen) • SB-100 Renewables Portfolio Standard (RPS) excludes large hydroelectric and nuclear power in achieving these mandates. Hydro is presumably excluded because of climate change impacts of increased droughts which result in less hydroelectric production • Sequestering the remaining 108 Million Metric Tons of Carbon annually (in 2017 California Carbon emissions were 424 Million Metric Tons) |

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| | <p>The following transformations are noted:</p> <ol style="list-style-type: none">1. These changes result in a 60% increase in grid served electricity consumption and a 40% increase in peak load. This is forecast only to be achieved by importing wind energy from out of state, requiring additional transmission lines.2. Additional 30 Gigawatts (GW) of utility-scale energy storage because renewable energy is intermittent. Current storage is targeted at 4-hours of storage capacity. Storage systems will need to be increased to 7 hour + systems.3. 80 GW of additional generation capacity and grid improvements (Utility – scale storage, generation and grid improvements estimated at \$250 Billion)4. Up to 50% of homes to have solar systems and 10 GW of distributed energy resource (DER) storage5. Late adopters that continue to use natural gas and gasoline will bear increased costs to maintain those systems as others move over. |
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**Status of Ongoing WEROC Projects
December 2019**

| Description | Comments |
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| Hazard Mitigation Planning | WEROC is completing follow-up with the 19 member agencies who participated in the 2018 update of the Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan. Once all agencies have adopted the plans, MWDOC needs to compile and bind all approval resolutions into an appendix and send it to FEMA. That is the last step for this version of the Hazard Mitigation Plan that is updated every five years. |
| America's Water Infrastructure Act (AWIA) | <p>Ongoing: WEROC launched an effort to facilitate a joint RFP and contract with participating WEROC member agencies to address the new requirements of America's Water Infrastructure Act (AWIA). On October 23, 2018, Congress Signed into law The American Water Infrastructure Act (AWIA) (S.3021, Law 115-270). Per section 2013 of title II, the AWIA requires utilities to conduct a Risk and Resilience Assessment (RRA) of their community water systems and develop a corresponding Emergency Response Plan (ERP). March 31, 2020, for systems serving a population of 100,000 or more.</p> <p>New Actions:</p> <ul style="list-style-type: none"> • 25 Agencies participated in the Phase 1 Compliance Crosswalk • It now appears that 23 agencies will participate in the Phase 2 Risk and Resilience Assessment and Phase 3 Emergency Response Plans. • All Phase 1 Crosswalks have been developed and provided to agencies. Some discussion and editing are still occurring. The crosswalks remain a draft as agencies work through the Phase 2 and Phase 3 processes. • Workshops with the agencies are two-day events with key staff from each of the agencies to complete the asset and threat characterization. A second two-day workshop will complete the consequence and vulnerability analysis. The combination of these workshops will provide the basis for a completed RRA. The first workshops for completion of the Risk and Resiliency Assessment (RRA) have been completed for all of the larger agencies with a due date of March 2020. The second workshops with the agencies are being completed at this time. Following the second workshops, Herndon will provide drafts of the RRAs and review them with the participating agencies. Then work will begin on the Emergency Response Plans which are due 6 months later. |
| WEROC Coordination | On Christmas Eve, WEROC activated after being made aware of a National Cyber-attack targeting critical infrastructure and finance/business |

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| WEROC Coordination with its member agencies (cont.) | <p>systems. We notified our WEROC contacts with event specifics immediately. We have learned that two agencies in OC have been struck by ransomware known as REVil/Sodinokibi. Next the outreach effort was expanded to our normal contact list for all of our agencies. Staff reached out to coordinate with the FBI's local fusion center known as the Orange County Intelligence Assessment Center (OCIAAC) to provide assistance with the restoration activities.</p> <p>Daniel continues to work with SDG&E on Geospatial Information Systems to coordinate mapping of water and wastewater Infrastructure so there is a clear understanding of what is actually impacted during PSPS events. Additionally, WEROC continues to coordinate with SDG&E to add all critical sites to priority restoration post-PSPS event.</p> <p>Having been certified as a Terrorism Liaison Officer Daniel continues to review daily intelligence reports in order to better direct WEROC efforts and inform member agencies to threat trends.</p> <p>WEROC has scheduled an ICS-400 (advanced incident command) course for June 30-July 1st. ICS-400 is a two-day course is designed for emergency response personnel who would function as part of an Area Command, Emergency Operations Center, or Multiagency Coordination System during a large, complex incident or event or those personnel who are or would likely be part of a local or regional Incident Management Team during a major incident, whether single agency, multiagency or Unified Command. This course certification is also needed to ensure National Incident Management System compliance for our yearly reporting which is tied to grant funding.</p> |
| Coordination with the County of Orange | <p>Ongoing: OC OA Alert and Warning Group meetings have concluded following the release of the operational area agreement to the executive board. This was a 6-month planning effort. Daniel attended the meetings and worked with the County's Control One (Dispatch) to address some of WEROC's concerns. These concerns were associated with emergency notification obligations.</p> <p>Completed: WEROC staff participation in the OA Agreement Revision Working Group. Update: The Draft Revised Agreement developed by the working group has been reviewed and approved by the County's Legal Counsel. The OA shared this revised draft to all OC government entities and requested input by October 31st. The input was provided by WEROC and about five other agencies. The OA will develop the final agreement that will need to be approved by all agencies.</p> |
| | <p>On-going: California Public Utilities Commission (PUC) proceedings regarding the Impacts from De-Energization with a Focus on First Responders and Local Government. MWDOC has received party status to</p> |

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| PSPS Events | <p>these proceedings. Party Status was intended to ensure that we receive all communications regarding the proceedings and that our comments are included officially for consideration. Phase 2 was started and then stopped to give the PUC time to work on PSPS events, particularly with PG&E, before proceeding ahead.</p> |
| EOC Readiness | <p>Janine Schunk and Daniel participated in the OA and MET radio tests and WebEOC tests. Janine also facilitated the WEROC monthly radio test.</p> <p>Daniel and Janine have installed all the satellite phone cradles and power stations and are currently waiting on the contractor to repair our satellite rooftop antenna. WEROC will be picking up the MWDOC emergency generator to install a solar battery maintainer system within the next month.</p> <p>WEROC has begun registration of MWDOC's emergency operations generator registration through CARB</p> <p>Janine coordinated the maintenance of the South EOC (SEOC) and is working to register the new MWDOC alt EOC generator. She has also been working on updates to Safety Center, the COOP, and position binders. WEROC has recently signed a service agreement with the City of Fountain Valley Public Works to service MWDOC's emergency generator.</p> |

Status of Water Use Efficiency Projects

December 2019

| Description | Lead Agency | Status % Complete | Scheduled Completion or Renewal Date | Comments |
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| Smart Timer Rebate Program | MWDSC | Ongoing | Ongoing | In November 2019, 148 smart timers were installed in Orange County. To date, 26,272 smart timers have been installed through this program. |
| Rotating Nozzles Rebate Program | MWDSC | Ongoing | Ongoing | In November 2019, 1,840 rotating nozzles were installed in Orange County. To date, 570,089 rotating nozzles have been installed through this program. |
| SoCal Water\$mart Residential Indoor Rebate Program | MWDSC | Ongoing | Ongoing | In November 2019, 159 high efficiency clothes washers and 13 premium high efficiency toilets were installed in Orange County. To date, 120,197 high efficiency clothes washers and 60,474 high efficiency toilets have been installed through this program. |
| SoCal Water\$mart Commercial Rebate Program | MWDSC | Ongoing | Ongoing | In November 2019, 200 residential premium high efficiency toilets, 173 commercial premium high efficiency toilets, and 4 ice making machines, and 1 cooling tower conductivity controller were installed in Orange County. To date, 107,426 commercial devices have been installed through this program. |
| Industrial Process/ Water Savings Incentive Program (WSIP) | MWDSC | Ongoing | Ongoing | This program is designed to improve water efficiency for commercial customers through upgraded equipment or services that do not qualify for standard rebates. Incentives are based on the amount of water customers save and allow for customers to implement custom water-saving projects. Total water savings to date for the entire program is 1,257 AFY and 4,311 AF cumulatively. |
| Turf Removal Program | MWDOC | Ongoing | Ongoing | In November 2019, 20 rebates were paid, representing \$46,351 in rebates paid this month in Orange County. |

| Description | Lead Agency | Status % Complete | Scheduled Completion or Renewal Date | Comments |
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| | | | | To date, the Turf Removal Program has removed approximately 22.5 million square feet of turf. |
| Spray to Drip Conversion Program | MWDOC | Ongoing | Ongoing | <p>This is a rebate program designed to encourage residential and commercial property owners to convert their existing conventional spray heads to low-volume, low-precipitation drip technology.</p> <p>To date, 259 residential sites and 69 commercial sites have completed spray to drip conversion projects.</p> |
| Recycled Water Retrofit Program | MWDSC | Ongoing | Ongoing | <p>This program provides incentives to commercial sites for converting dedicated irrigation meters to recycled water.</p> <p>To date, 157 sites, irrigating a total of 1,563 acres of landscape, have been converted. MWDOC has paid a total of \$56,950.00 in grant funding to 20 of those sites. The total potable water savings achieved by these projects is 3,362 AFY and 11,183 AF cumulatively.</p> |