

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

Jointly with the

**PLANNING & OPERATIONS COMMITTEE**

October 14, 2019, 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 Barbre

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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>.

**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.)

1. WATER CONSERVATION STANDARDS IMPLEMENTATION UPDATE
2. UPDATE ON AMERICAS WATER INFRASTRUCTURE ACT (AWIA) CONTRACT WITH HERNDON SOLUTIONS GROUP
3. UPDATE ON STATUS OF ORANGE COUNTY AGENCIES ABILITY TO WITHSTAND A 7-DAY SHUTDOWN OF THE DIEMER PLANT IN MARCH 2020
4. SECOND LOWER CROSS FEEDER

5. STATUS REPORTS
  - a. Ongoing MWDOC Reliability and Engineering/Planning Projects
  - b. WEROC
  - c. Water Use Efficiency Projects
6. 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.



**INFORMATION ITEM**

October 14, 2019

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

**FROM:**       **Robert Hunter, General Manager**

                    Staff Contact: J. Berg, Director of Water Use Efficiency

**SUBJECT:**   **Water Conservation Standards Implementation Update**

**STAFF RECOMMENDATION**

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

**COMMITTEE RECOMMENDATION**

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Committee recommends (To be determined at Committee Meeting)

**SUMMARY**

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In 2018, Senate Bill 606 and Assembly Bill 1668 were signed by Governor Brown. These companion bills are designed to implement components of Governor Brown's Executive Order B-37-16 and establish a new, long-term water conservation framework. The State Water Resources Control Board and Department of Water Resources (DWR) developed a document titled, "Making Water Conservation A California Way of Life: Primer of 2018 Legislation on Water Conserving and Drought Planning." The Introduction of this document is provided below and the complete document can be accessed at:

<https://www.mwdoc.com/wp-content/uploads/2019/10/Making-Conservation-a-California-Way-of-Life-Primer-Final.pdf>

***Introduction***

*In 2018, the California State Legislature (Legislature) enacted two policy bills, (Senate Bill (SB) 606 (Hertzberg) and Assembly Bill (AB) 1668 (Friedman)), to establish a new foundation for long-term improvements in water conservation and drought planning to adapt*

Budgeted (Y/N): N/A	Budgeted amount: N/A	Core __	Choice <u>X</u>
Action item amount: N/A	Line item: N/A		
Fiscal Impact (explain if unbudgeted): N/A			

*to climate change and the resulting longer and more intense droughts in California. These two bills amend existing law to provide expanded and new authorities and requirements to enable permanent changes and actions for those purposes, improving the state's water future for generations to come.*

*SB 606 and AB 1668 are direct outcomes of Governor Brown's Executive Order B-37-16 issued in May 2016. The recommendations in the April 2017 report entitled Making Water Conservation a California Way of Life, Implementing Executive Order B-37-16 (2017 Framework) and subsequent extensive legislative outreach efforts informed the development of SB 606 and AB 1668. The 2017 Framework was prepared by the California Department of Water Resources (DWR), State Water Resources Control Board (State Water Board), California Public Utilities Commission (CPUC), California Department of Food and Agriculture (CDFA), and California Energy Commission (CEC) in response to Executive Order B-37-16 to establish a long-term framework for water conservation and drought planning. The 2017 Framework built on the conservation realized during the recent drought, as well as implementation of the Governor's California Water Action Plan.<sup>1</sup> The resulting 2017 Framework outlined a suite of actions that can be implemented under existing authorities and, where necessary, recommended additional actions that can be implemented with new or expanded authorities given by the Legislature. To that end, the Legislature enacted SB 606 and AB 1668, which provide complementary authorities and requirements that affect water conservation and drought planning for urban water suppliers, agricultural water suppliers, and small water suppliers and rural communities.*

***As an initial implementation action, DWR and the State Water Board prepared this primer to summarize the authorities, requirements, and schedules included in the new legislation. Where appropriate, roles and responsibilities of State agencies, water suppliers, and other parties are highlighted.*** During the implementation process, DWR, the State Water Board, and other State agencies will further develop data, information, guidelines, and other technical assistance to help realize the bills' intended outcomes. These agencies will solicit broad stakeholder and public participation throughout implementation.

*The content of this primer is organized by the four primary goals in Executive Order B-37-16 and the 2017 Framework: (1) use water more wisely, (2) eliminate water waste, (3) strengthen local drought resilience, and (4) improve agricultural water use efficiency and drought planning. The majority of the new and expanded authorities relate to achieving the goal of using water more wisely, with the addition of a chapter in the California Water Code (CWC), Chapter 9 (commencing with §10609) of Part 2.55 of Division 6.*

*The table on the following page presents major new and expanded authorities provided by SB 606 and AB 1668.*

## Making Water Conservation a California Way of Life – Major Areas of Coverage in SB 606 and AB 1668 of 2018

Primary Goals	Major Areas of Coverage in SB 606 (SB) and AB 1668 (AB)
Use Water More Wisely	<ul style="list-style-type: none"> <li>Water budget-based method for quantifying urban water use objectives</li> <li>Urban retail water use efficiency standards adoption and water use objectives</li> <li>Urban retail water use objective implementation, reporting, and enforcement</li> <li>Expanded civil liability for violations</li> </ul>
Eliminate Water Waste	<ul style="list-style-type: none"> <li>Affirmation for continued implementation of existing requirements enacted by SB 555 of 2015 for setting urban retail water loss standard, methodology, and reporting requirements</li> <li>Recommendations to Legislature on expanding water loss reporting requirements for urban wholesale water suppliers</li> </ul>
Strengthen Local Drought Resilience	<ul style="list-style-type: none"> <li>Emergency declaration based on local water shortage</li> <li>Urban water shortage contingency planning, methodology, reporting, and enforcement</li> <li>Amendments to existing urban water management reporting and enforcement</li> <li>Countywide drought planning for small water suppliers and rural communities</li> </ul>
Improve Agricultural Water Use Efficiency and Drought Planning	<ul style="list-style-type: none"> <li>Water budget-based method for quantifying agricultural water use efficiency</li> <li>Amendments to existing agricultural water delivery reporting and requirements</li> <li>Drought resiliency and response planning, and requirements for agricultural water use</li> </ul>

These bills are designed to replace SBx 7-7, the Water Conservation Act of 2009, which was the first state-wide mandate for urban water suppliers to achieve a 20% reduction in urban water use by 2020. The detailed report below provides a status update on implementation of the new long-term conservation framework called for in Senate Bill 606 and Assembly Bill 1668.

## DETAILED REPORT

A discussion with Peter Brostrom, Water Use Efficiency Branch Manager at DWR revealed that the state is struggling with posting information due to “the state’s new accessibility rules.” As a result, information is limited at this time.

We know that the state established a series of workgroups to focus on specific objectives contained in the legislation. The state has appointed subject-matter experts to these workgroups. All workgroup meetings will be open to interested stakeholders, who will have opportunity to provide input throughout the process. Workgroup meetings will be held quarterly, but the detailed schedules are not available as of the writing of this staff report. According to Mr. Brostrom, most workgroups will begin meeting in late October 2019. The workgroups include:

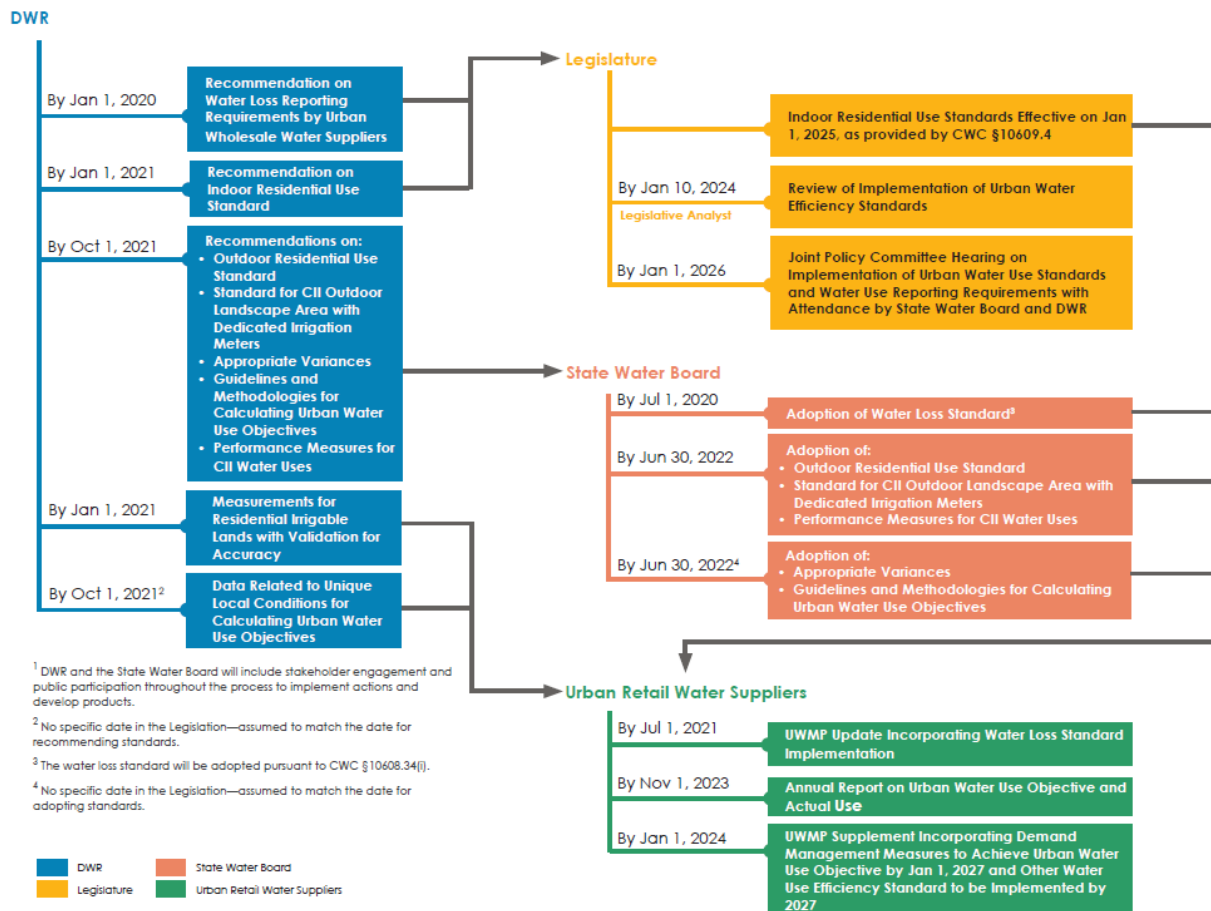
1. Wholesale Water Loss
2. Water Use Studies
3. Standards, Methodologies, and Performance Measures
4. Urban Water Management Plan Guidebook Update
5. Annual Water Supply and Demand Assessment
6. Data Streamlining
7. Model Water Efficient Landscape Ordinance
8. Landscape Area Measurement

Joe Berg, Rachel Waite, and Harvey De La Torre have been appointed to three workgroups, respectively, the Wholesale Water Loss Workgroup, Water Use Studies Workgroup, and Urban Water Management Plan Guidebook Update Workgroup. Staff also plans to actively participate in all other workgroups.

Three workgroups have begun meeting: Wholesale Water Loss, Model Water Efficient Landscape Ordinance, and Landscape Area Measurement. The one Wholesale Water Loss workgroup meeting focused on gathering initial input from stakeholders. The Model Water Efficient Landscape Ordinance workgroup had been meeting, but temporarily paused to evaluate the effectiveness of implementation of the ordinances by city and county planning departments. The Landscape Area Measurement workgroup has met a few times and has been focusing on pilot landscape area measurement studies being performed by DWR. These pilot studies are designed to establish an area measurement methodology that takes into account unique characteristics of service areas across the state. DWR has completed the initial study that included two retail agencies and is now broadening the second phase to include approximately 30 retail agencies. Orange County is targeted in the third phase of this area measurement work.

The graphic below identifies the major actions, products, and dates required to implement the water use efficiency standards and urban retail water suppliers annual reporting requirements contained in Senate Bill 606 and Assembly Bill 1668.

Major Actions and Products Required to Implement Water Use Efficiency Standards and Urban Retail Water Supplier's Annual Reporting Requirements<sup>1</sup>



Staff will provide periodic updates to the Planning & Operations Committee as important milestones are completed.



**INFORMATION ITEM**

October 14, 2019

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

**FROM: Robert Hunter, General Manager**

Staff Contact: Karl Seckel

**SUBJECT: Update on Americas Water Infrastructure Act (AWIA) Contract with Herndon Solutions Group**

**STAFF RECOMMENDATION**

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Staff recommends the Planning & Operations Committee receives and files the report.

**COMMITTEE RECOMMENDATION**

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Committee recommends (To be determined at Committee Meeting)

**SUMMARY**

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America's Water Infrastructure Act of 2018 (AWIA) is a federal law that provides for water infrastructure improvements throughout the country. AWIA became law on October 23, 2018. Section 2013 of AWIA includes newly enacted requirements for community water systems serving more than 3,300 people. These utilities must:

- Conduct a Risk and Resilience Assessment (RRA)
- Prepare or revise an Emergency Response Plan (ERP)
- Submit a certification letter upon completion to the U.S. Environmental Protection Agency (U.S. EPA) for each (RRA and ERP)
- Review, update, revise as necessary and submit a recertification for both at least every 5 years thereafter

<b>Budgeted (Y/N):</b>	Budgeted amount:	Core __	Choice __
<b>Action item amount:</b>		Line item:	
<b>Fiscal Impact (explain if unbudgeted):</b>			

- Maintain records (keep copies of RRA and ERP and any updates for 5 years after certification submittal) MWDOC structured an RFP and solicited consultants to assist up to 25 of the WEROC Agencies with compliance with the Act. The timelines for RRA compliance vary by the size of the agency, with the larger agencies due in March 31, 2020, the medium agencies by December 31, 2020, and the small agencies by June 30, 2021. ERPs must be completed no later than 6 months after the filing of the RRAs.

MWDOC's RFP broke the effort into three Phases:

- Phase 1 Crosswalk Review – This first task is to determine what resources each agency already has and what their GAPS are for compliance with the AWIA RRA and ERP requirements. This is a fixed fee per agency at about \$15,000, because the process is the same for all agencies. Herndon Solutions Group has recommended completing this “as a best-practices” review, as opposed to simply a checklist. All reviewing agencies were supportive of this level of effort and believe it will be a valuable ongoing tool for emergency planning.
- Phase 2 Completion of the Risk and Resiliency Assessment (RRA) – Herndon Solutions Group proposed this as a fixed fee for all sizes of agencies at about \$84,000 each, again because the process is essentially the same for all agencies. Additionally, Herndon provided the highest level of services in terms of quantity of assets and threats to be reviewed per agency.
- Phase 3 Emergency Operations Plant (ERP) Update – This varies by the level of effort required, low, medium or high (ranging from about \$15,000 to \$62,000 per agency) depending on the condition and how recently the agency's existing ERP had been updated and how complete it is.

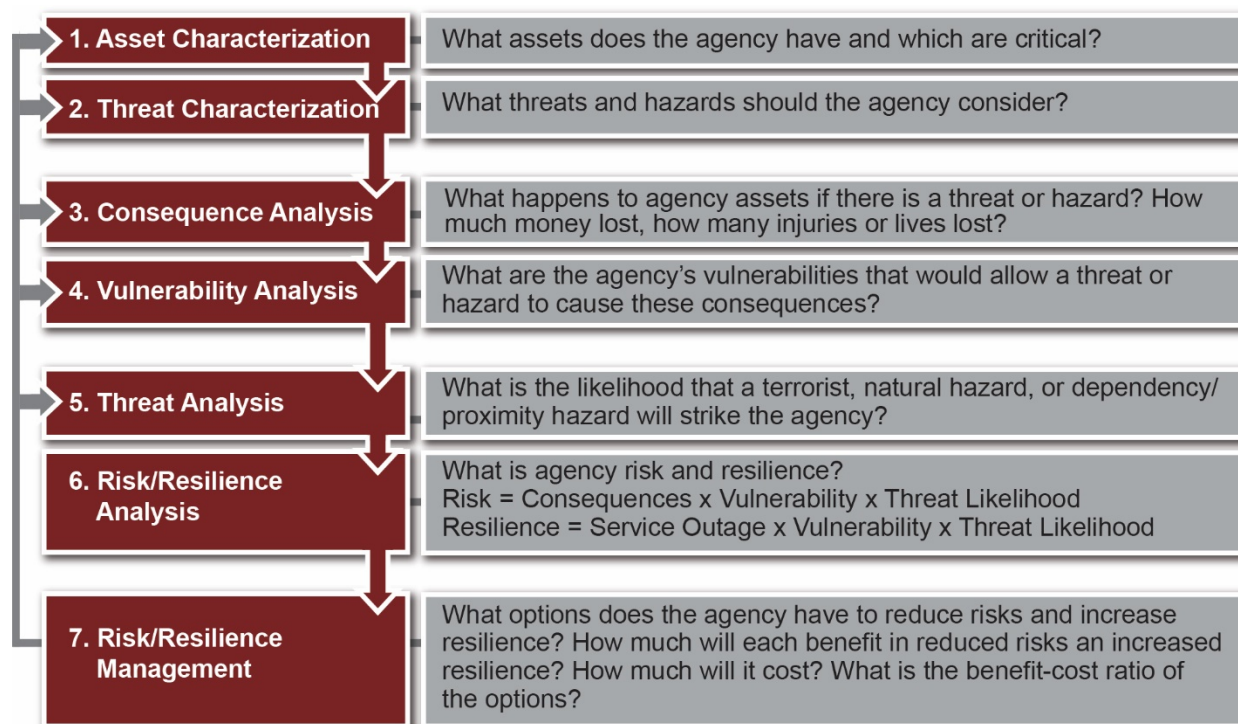
Phase I is nearing completion with the next step in the project being the Phase II, which includes the use of a software tool (PARRE™) to incorporate the data gathered and to determine the risks and resiliency assessment for each agency, after conducting two-day workshops with each agency. Completion of Phase II involves a draft and final RRA for each agency's review and approval. Agencies are encouraged to continue with Phases II and III to fill the gaps identified in Phase I and meet compliance with AWIA. The goal of Phase I was to inform subsequent phases by identifying compliance gaps and addressing them more effectively and efficiently. With these Compliance Crosswalk matrices complete (or nearly complete), the Phase I goal has been met.

Moving forward, the goal of Phase II is to complete the RRA, in accordance with J100,<sup>1</sup> the industry standard for Risk and Resilience Assessments. An overview of Phase II is provided below:

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<sup>1</sup> American National Standards Institute (ANSI)/American Water Works Association (AWWA) J100: Risk Analysis and Management for Critical Asset Protection (RAMCAP) Standard for Risk and Resilience of Water and Wastewater Systems (J100)





The utility must consider all potentially critical components of the water system, including:

- Pipes and constructed conveyances
- Physical barriers
- Source water
- Water collection and intake
- Pretreatment, treatment, storage, and distribution facilities
- Electronic, computer, or other automated systems

In addition to assessing the physical parts of the system, the utility must also assess:

- Any Monitoring practices – physical security, water quality
- Financial infrastructure – accounting, billing, and ability to do payroll when facing a threat, including cyber-attack or destruction of the administration buildings housing these systems
- Use, storage, or handling of various chemicals by the water system
- Operation and maintenance of the system
- May include evaluation of capital and operational needs for risk and resilience management

Moving into Phase III, the Herndon Solutions Group will assist the agencies to update and prepare an ERP that meets compliance. The ERP must include:

- Strategies and resources to improve resilience, including physical and cyber security

- Plans and procedures that can be implemented and identification of equipment that can be utilized in the event of a malevolent act or natural hazard that threatens the ability of the utility to deliver safe drinking water
- Actions, procedures, and equipment to lessen the impact on public health and safety and supply of drinking water from a malevolent act or natural hazards, including the development of alternative source water options, relocation of water intakes, and construction of flood protection barriers
- Strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security of the water system.

Better results are always achieved by bringing together various perspectives into a cohesive effort. Collaborative workshops are planned for Phases II and III, which bring together the best experts on each agency's system (their own staff) combined with the know-how and expertise of emergency planners from the Herndon Solutions Group Team who have worked with many agencies and know what works and what doesn't. This is an opportunity to put each agency at the forefront of Risk & Resilience issues and to develop an ERP that will serve each agency for many years to come. Two-day workshops are planned for both the RRA and the ERP.

The table below indicates:

- 8 Agencies have approved the Agreement as of 10/7
- 3 Are taking action the week of Oct 7
- 5 More are taking action the week of Oct 14
- 7 More the week of Oct 21 or after
- 2 Agencies have dropped out

<b>Date for Phase II&amp;III Approval</b>				
		As of 10/7/19		
	Date	Agency	Plan to Move Forward?	Notes:
1	Approved	Municipal Water District of Orange Count	Yes	
2	Mid-October	Irvine Ranch Water District	Yes	
3	10/15/2019	Santa Ana, City of	Yes	
4	Approved	South Coast Water District	Yes	
5	10/21/2019	Huntington Beach, City of	Yes	
6	10/8/2019	Garden Grove, City of	Yes	
7	Approved	Moulton Niguel Water District	Yes	
8	11/6/2019	Santa Margarita Water District	Yes	
9	Approved	Fullerton, City of	Yes	
10	10/8/2019	Orange, City of	Yes	
11		East Orange County Water District		Waiting on Phase I
12	Approved	San Juan Capistrano, City of	Yes	Plan on moving to Phases II and III independently, but if consolidation occurs, they may pursue Phase III jointly
13	October	Westminster, City of		Waiting until Phase 1 Complete
14	10/8/2019	Buena Park, City of	Yes	
15		Yorba Linda Water District	No	Not continuing in Phase II and III
16	10/15/2019	Tustin, City of	Yes	
17		Newport Beach, City of***	Yes	
18	10/21/2019	La Habra, City of	Yes	
19	Approved	Fountain Valley, City of	Yes	
20	Approved	San Clemente, City of	Yes	
21	Mid October	El Toro Water District	Yes	
22	November	Brea, City of		
23		Seal Beach, City of		They have a late due date and may come back later.
24	10/16/2019	Trabuco Canyon Water District	Yes	
25	Approved	Serrano Water District	Yes	



**INFORMATION ITEM**

October 14, 2019

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

**FROM: Robert Hunter, General Manager**

Staff Contact: Karl Seckel

**SUBJECT: Update on Status of Orange County Agencies Ability to Withstand a 7-Day Shutdown of the Diemer Plant in March 2020**

**STAFF RECOMMENDATION**

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Staff recommends the Planning & Operations Committee receives and files this report.

**COMMITTEE RECOMMENDATION**

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Committee recommends (To be determined at Committee Meeting)

**SUMMARY**

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In August 2019 MET indicated their plans for a Diemer Shutdown lasting 16-days in March of 2020. Under normal conditions, such a shutdown can be properly accommodated by Orange County agencies with advance notice and planning. This year MWD OC advised MET that due to the potential lowering of the Response Level by the State for PFAS, our agencies may not be able to comply. MET was advised that we might know more in the November timeframe depending on how and when the State takes action. We advised MET we would work with our agencies assuming the worst assumption and see if a shutdown can be accommodated. MET reflected that the duration of the shutdown could be limited to 7 days by eliminating some of the work activities.

Since that time, MWD OC has held three meetings with basin agencies who would likely be impacted by the lowering of the PFAS levels. The outlook is still not entirely clear as we are awaiting further information from two key agencies. Furthermore, it appears that the only manner identified for supplying sufficient supplies of water to YLWD would be if Anaheim has an extra 18 mgd of water they could deliver into the AMP to allow it to be used as a

<b>Budgeted (Y/N):</b>	Budgeted amount:	Core __	Choice __
<b>Action item amount:</b>	Line item:		
<b>Fiscal Impact (explain if unbudgeted):</b>			

delivery system to get water to YLWD. If that can be accomplished, it may still require YLWD to use a temporary pump station to pump the water into their system. MET has been briefed on this option but has not provided any feedback. It is complicated because MET obviously does not want any PFAS introduced into one of their pipelines. Another issue is who would be responsible for any extra ordinary costs incurred to allow the shutdown to proceed.

MET's projects to be completed at the Diemer Plant include:

1. Convert the Ozone Generator Open Loop Cooling Water System Supply Line from Untreated Water to Treated Water – the purpose is to extend the life of the heat exchanger.
2. Add a Diemer Plant Influent Flowmeter – to improve understanding of flows.
3. Diemer Plant Clearwell Rejection Weir – until the seismic stability issues were resolved, a weir had been installed to limit the level of storage in the clearwell; removal of the weir allows use of the entire clearwell capacity of about 30 MG as opposed to the current maximum volume of about 18 MG.
4. Replacement of the Diemer Plant Wastewater Reclamation Plant Flowmeter – the flow meter is outdated and requires replacement.

At this time, assuming the PFAS Response Level is lowered, it does not appear that agencies in Orange County can withstand a 7-day shutdown in March 2020. If the Response Levels are NOT lowered or if grace time for compliance is provided by the State, the Diemer Plant shutdown for March 2020 may be able to be accommodated.

Staff will keep the Board informed.

Attached are the shutdown slides provided by MET.



## Robert B. Diemer Water Treatment Plant

March 2020 Shutdown  
Briefing

### Diemer Construction Plan 2019-2020

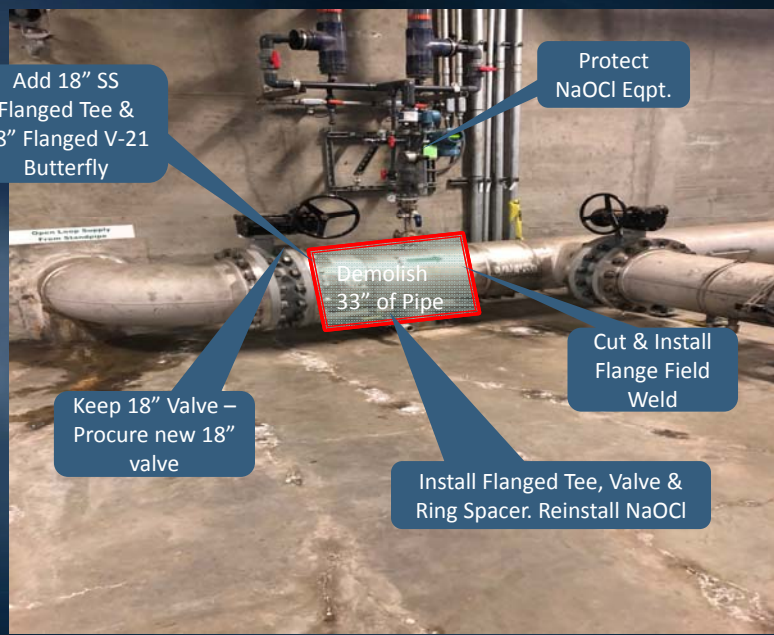




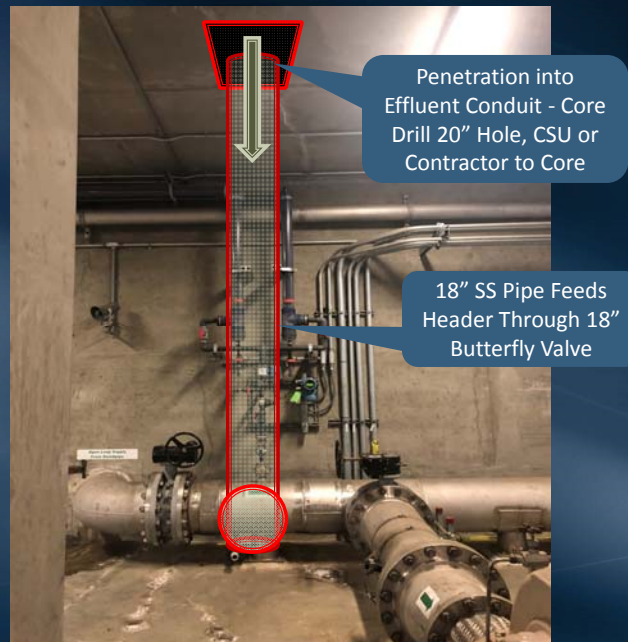
## 1. Diemer Ozone Generator Open Loop Cooling Water System Improvements

- Cooling water system will be modified to add a new water supply line, to be used as the main source for the ozone generator open loop cooling water
- Construction work in two steps:
  - 12-hr Ozone Shutdown in Fall 2019
  - Full-Plant Shutdown in March 2020
- Project status
  - 100% drawings underway
  - Approval for procurement & construction in process
- Construction by Diemer Met Forces

### Diemer 12-hr Ozone Shutdown

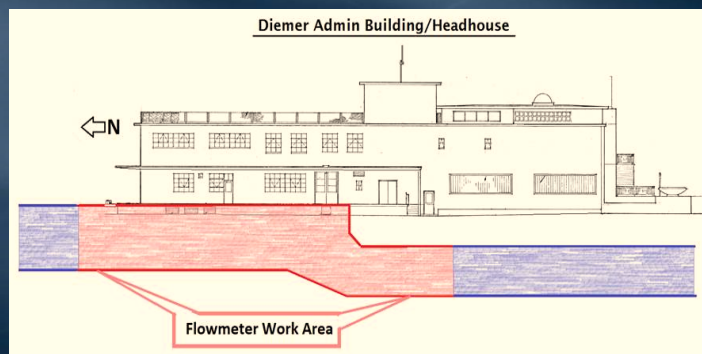


## Diemer Full-Plant Shutdown Work



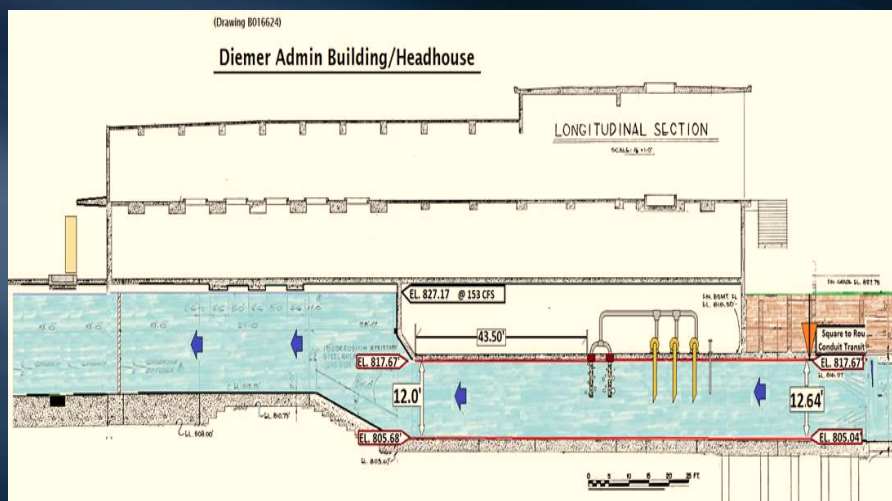
## 2. Diemer Plant Influent Flowmeter

- New ultrasonic flowmeter in a section of plant influent conduit under the Diemer plant's headhouse
- Alternative means of measuring plant flow
- Project status
  - Vendor's field visit complete — Quote submitted
  - Minor Capital — CIP submitted for approval

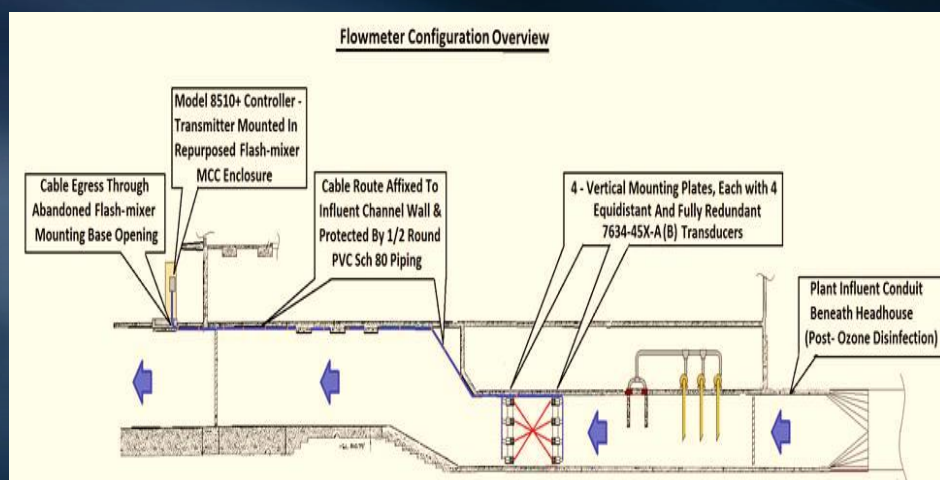




## 2. Flowmeter Location



## 2. Flowmeter Configuration

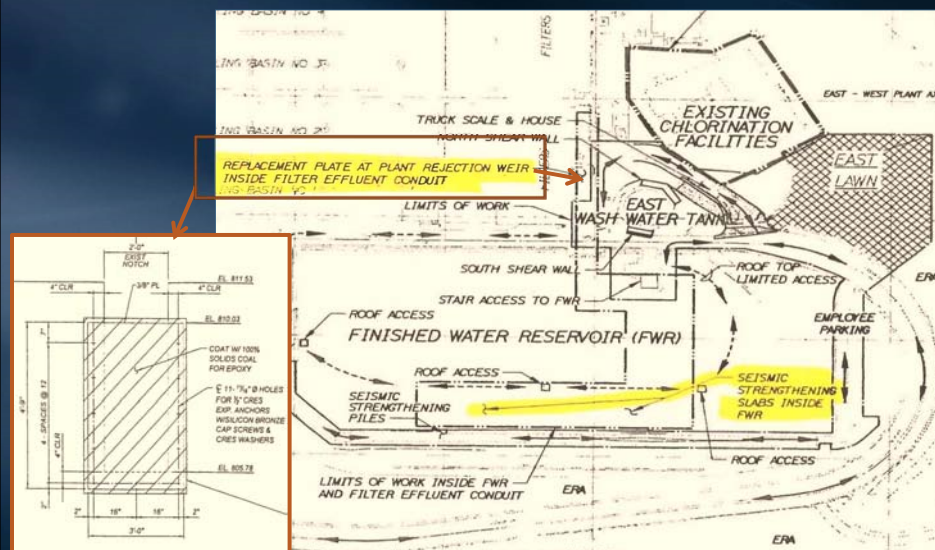


### 3. Diemer Plant Rejection Weir Modification

- Ongoing CIP project (funds available)
- Final element of the FWR Seismic Upgrade project
- Construction by CSU



### 3. Diemer Plant Rejection Weir Modification



### 3. Plant Rejection Weir Modification



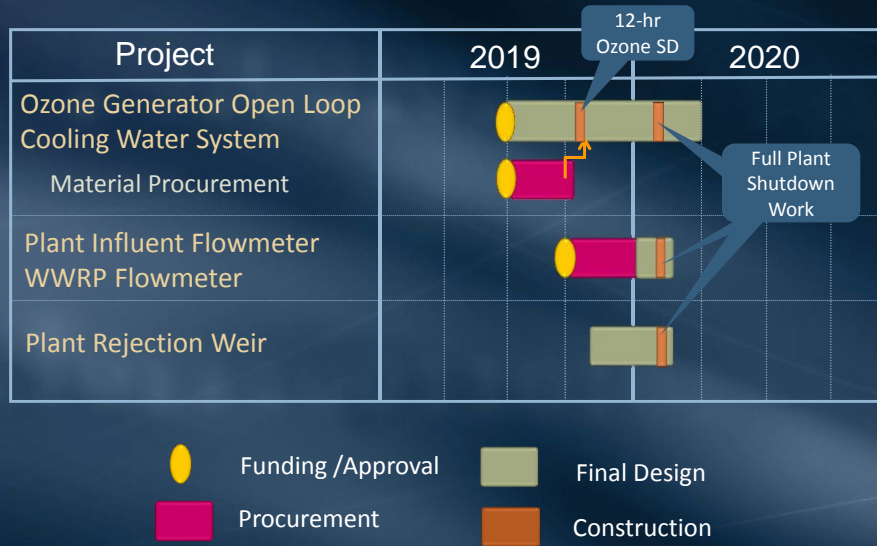
### 4. WWRP Influent Flow Meter Replacement

- Ongoing CIP project (funds available)
- Construction by CSU





## Schedule





**INFORMATION ITEM**

October 14, 2019

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

**FROM: Robert Hunter, General Manager**

Staff Contact: Karl Seckel

**SUBJECT: Director Request to Review the Second Lower Cross Feeder Project from 2014 to Review the Potential Benefits With Respect to a Diemer Shutdown**

**STAFF RECOMMENDATION**

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Staff recommends the Planning & Operations Committee review and discuss this item at the October 14 meeting.

**COMMITTEE RECOMMENDATION**

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Committee recommends (To be determined at Committee Meeting)

**SUMMARY**

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This project had a long history of evaluation and consideration towards enhancing the ability of providing emergency water from MET's Jensen and Weymouth Service areas into Orange County during a period when the Diemer Plant is shut down. The proposed regional interconnection, the Second Lower Cross Feeder (SLCF) would connect MET's Second Lower Feeder to the East Orange County Feeder No. 2; a future project could additionally connect to the Allen McColloch Pipeline.

For the evaluations, the central issue revolved around whether there "was or was not" sufficient MET water delivery capacity that "could be counted on" during an emergency situation to convey water in the SLCF in the event the Diemer Plant is out of service due to earthquakes or other interruptions. It was also determined that the water would have to be pumped to be useful in Orange County. The importance of this issue resulted in MWD OC

<b>Budgeted (Y/N):</b>	Budgeted amount:	Core __	Choice __
<b>Action item amount:</b>		Line item:	
<b>Fiscal Impact (explain if unbudgeted):</b>			

requesting MET to document their perspective on the project, including their perspective on regional facility vulnerability in Orange County in the event of seismic events and what could be further pursued to improve Orange County's reliability. MET provided the following input:

- MET cannot predict or guarantee a specific delivery capacity for the SLCF during an emergency event. MET has suggested that a similarly formulated project that involves the conveyance of local water may be a better concept to pursue. They are open to discussions involving the MET Conjunctive Use Storage Account in the Orange County groundwater basin.
- A further complication is that the Second Lower Feeder involves many miles of prestressed concrete cylinder pipe that will be slip lined over the next 10 years, further constraining system flows and involving time periods when the facilities will be out of operation.

Based the past discussions and MET's correspondence in 2014, along with a number of meetings, MWDOC's staff recommendations at the time (2014) were:

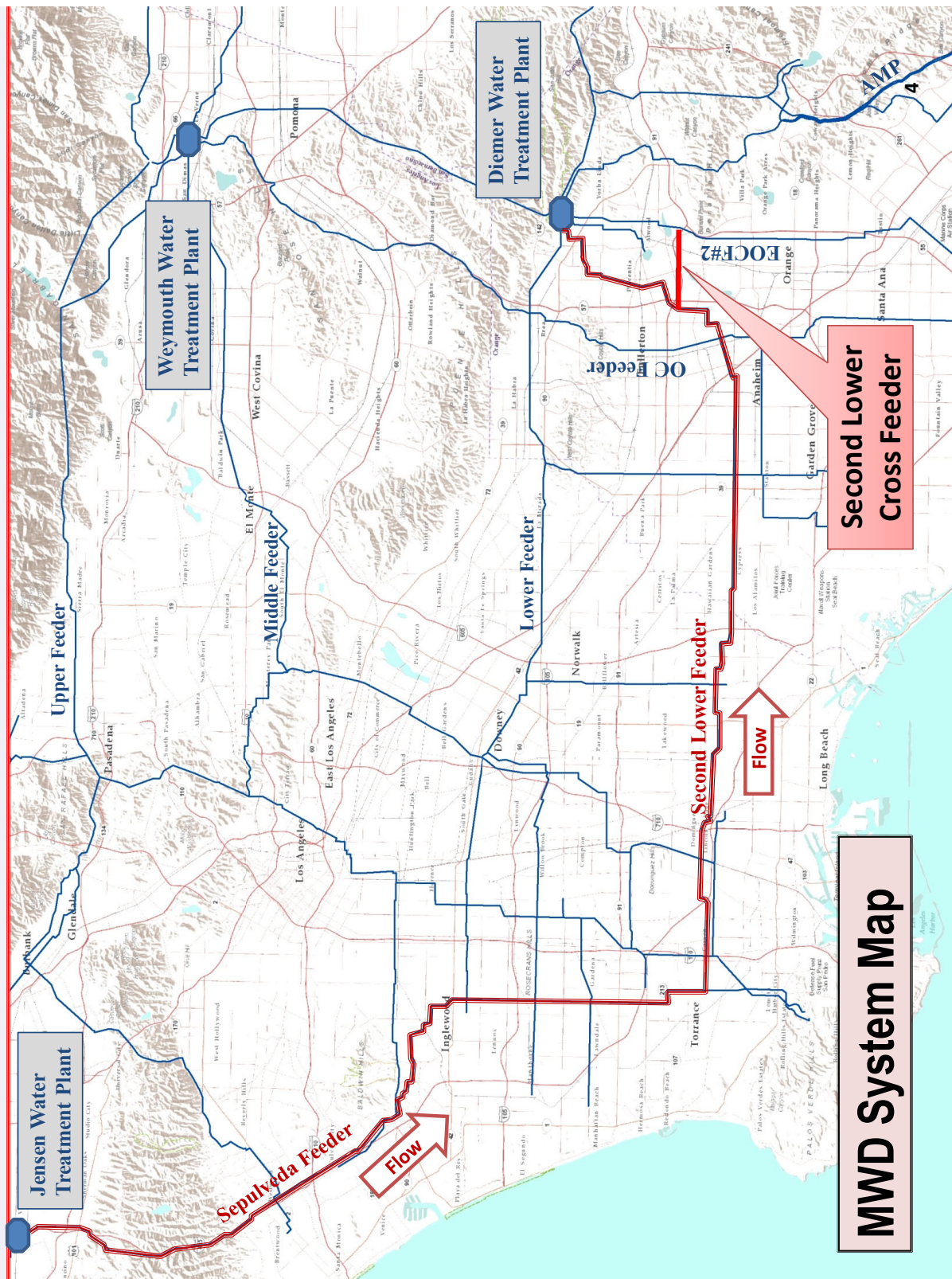
1. Incorporate additional Conjunctive Use Storage, for emergency purposes, into the existing Emergency Services Program (ESP). MWDOC has been involved in these discussions for many years and was part of the group that put together the 2006 Emergency Services Program for exchanging up to 50 cfs of groundwater production with imported water and conveying this through the IRWD system. Currently, about 20 to 30 cfs of emergency supplies can be delivered under the concept, but it diminishes over time. The ESP limitation was 50 cfs. Thus, additional emergency capacity can be added under the existing agreement provisions. A review of the IRWD system to convey the additional capacity needs to be undertaken in conjunction with IRWD. **2019 Update: MWDOC and IRWD have been involved in studies to examine the options to increase capacity and extend its availability further out in time. This option is under discussion at this time. OCWD is also studying the concept of storing and moving imported water to South Orange County. OCWD is studying both drought protection and emergency supplies. Both study efforts have been slowed by the PFAS issues.**
2. Examine NEW opportunities, for a conjunctive use wellfield of up to 50 cfs. The wellfield could be used in normal times for production of groundwater by basin agencies and under emergency situations, would be used for emergency supplies by the South County area. The project would be structured in a manner to provide benefits both to the basin and to the non-basin areas, with concomitant cost sharing of the project costs. This will require close work with OCWD, the groundwater producers and the South County agencies. **2019 Update: OCWD is also studying the concept of storing and moving imported water to South Orange County. OCWD is studying both drought protection and emergency supplies. Both study efforts have been slowed by the PFAS issues.**
3. The discussions should also involve MET to ascertain options involving the existing MET Conjunctive Use Storage Account and options for back-feeding into the MET

system to serve portions of LA County. **2019 Update: MWDOC staff has had discussions with MET regarding the Conjunctive Use Account in Orange County; at one time it was thought MET might want out of the agreement; in more recent discussions they have requested to maintain it in place. OCWD has requested MWDOC to see what can be negotiated with MET.**

Following is a milestone chronology of the project concepts and evaluations:

Second Lower Cross Feeder Project Milestones	
Date	Milestone
September 2001	Project identified in SOC Water Reliability Study
October 2005	MWD identifies SLCF as benefit to CPA and ozone upgrade shutdown at Diemer Plant.
January 2006	MWD begins design of SLCF, 84" pipeline in Anaheim
Mid 2007	MWD Integrated Areas Study complete, CPA pushed to 2049, SLCF project cancelled.
October 2008	MWD & MWDOC initiate joint study of benefits SLCF.
June 2010	Joint Study complete, 48" pipe and conjunctive use identified.
2011-12	Alignment and cost estimates studied, discussion with MWD on reliability benefits continue.
January 2013	Preferred alignment chosen for "emergency only" project, cost estimate \$51 million in 2016 dollars.
December 2013	MWD SLCF Summary and Conclusions, MWD has made large investments at Diemer; MWD does not see a regional benefit.
May 2014	SLCF agency participant meeting; further work is halted due to the questions raised.







## **2014 Conclusion**

The obstacle to this project that could not be overcome was whether water from the MET system would make it to the pump station. If so, the estimated project cost of \$51M could make a reasonable investment. MET suggested that a “similar” investment in the groundwater basin would result in a project that could be operational, almost whenever needed. MET urged us to proceed in that direction.

## **2019 Updates**

MWDOC staff has continued working on the expansion of the existing Regional IRWD Interconnection to South Orange County (SOC). MWDOC embarked on a study of expanding or extending out into time the operations of wells within IRWD to send water through the Joint Transmission Line to SOC during emergencies. The efforts have been slowed by the PFAS issue and by OCWD deciding to work with MNWD on study efforts to examine how best to convey water from the basin to SOC. The MNWD work by OCWD has been slow in reporting back any status updates. Staff will continue working on both fronts.

On another issue, MET recently adopted a change to their administrative code that allows member agencies to use the MET pipelines for delivery of local water in the event MET cannot make deliveries of MET water during emergency situations. This policy change would facilitate a pump-in of groundwater into the EOCF#2 under emergency situations, something that MWDOC has been working on for many years. Unfortunately, the PFAS issue and OCWD’s work with MNWD on storage of water within OCWD has delayed work on this project.

## **Attachments:**

1. MWDOC February 2014 Discussion item titled “Response from MET on the Second Lower Cross Feeder Project
2. Metropolitan Water District of Southern California Second Lower Cross Feeder (SLCF) Position Paper, December 2013
3. PowerPoint Second Lower Cross Feeder Project Review – June 2014

## **History, Background and Summary and Conclusions of 2013 Discussions Regarding the Second Lower Cross Feeder Project in Orange County and Diemer Plant Reliability**

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### **1.0 Project Background - Orange County Area Study**

During 2003-2004, Metropolitan staff worked collaboratively with MWDOC staff on an Orange County Area Study that was primarily focused on reliability concerns of Orange County retail agencies and their dependency upon the Diemer Water Treatment Plant. Specifically, the Orange County Area Study was initiated to perform the following:

- Update timing projections for the Central Pool Augmentation (CPA) Project
- Clarify obligations within the Allen McColloch Pipeline (AMP) sales agreement
- Discuss reliability concerns in relation to potential outages of the Diemer Plant.

This collaborative study addressed each of the above areas. The projected on-line date for the CPA project was updated; several disagreements over obligations of the AMP sales agreement were resolved; and a comprehensive review of the seismic risk assessment and mitigation measures for the Diemer plant was completed. In addition, the Orange County Area Study identified a number of actions aimed at improving the reliability of the Diemer service area, including the initial consideration of a Second Lower Cross Feeder (SLCF) pipeline. These actions are summarized below.

#### **1.1 Actions taken to improve operational flexibility**

- *Coastal Junction Bypass Project.* Several 24" diameter pipeline connections were installed to allow the use of portable pumps at the Coastal Junction Structure to aid in meeting retail demands during Diemer outages.
- *OC-88 Reliability Project.* Additional pumps were installed at the OC-88 service connection/pump station to improve near-term back-up capability (and to meet long-term demands).

#### **1.2 Actions taken (or underway) to strengthen the Diemer plant**

- *Diemer Water Treatment Plant Reliability Assessment (2005).* This effort was aimed at evaluating the vulnerability of Diemer to postulated events including seismic activity, hydraulic surge, vehicle impact, equipment malfunction, fire, third-party construction, vandalism, wind-blown projectiles. The results included identification of 30 potential reliability improvements that were prioritized and either handled as O&M projects or recommended for inclusion in Metropolitan's Capital Investment Plan (CIP).

At this time, 28 of the identified improvement projects are either complete or in progress including installation of a new 66kV incoming power supply from Southern California Edison, and various seismic upgrades covered in more detail below.

- *Seismic Assessment and Upgrade Program.* This program is aimed at evaluating the seismic adequacy of existing structures at all Metropolitan facilities, including the geotechnical evaluation of foundations. Potential slope stability issues are also addressed. For facilities that are potentially at risk, more detailed studies are undertaken to determine what actions are necessary to maintain reliability.

The Diemer site has unique issues due to its location on the top of a hill, the original construction of the site, and the manner in which fill was placed to increase the plant's footprint. As a result, significant investments have been made on the following seismic upgrade projects (approximately \$87 million expended to date with about \$33 million remaining):

- Filter outlet conduit slope stabilization
  - Filter Building seismic upgrades
  - Chemical facility foundation stabilization
  - East Washwater Tank foundation stabilization
  - Finished Water Reservoir foundation stabilization
  - Lower Feeder relocation
  - South Slope stabilization
  - West Washwater Tank upgrades
  - Washwater Reclamation Plant No. 2 slope stabilization
  - North Slope remediation
  - Administration Building seismic upgrade
- *Diemer Improvements Program.* This program is refurbishing major facilities at the Diemer plant to ensure long-term reliability. Approximately \$135 million has been expended over the past decade on improvement projects, while approximately \$130 million of investments are planned over the next 5 years.

Completed projects include the North Access Road, Solids thickeners, 66 KV substation, and the Plant Maintenance Facility. On-going and planned projects include basin rehabilitation, filter valve replacement, chemical system upgrades, and Yorba Linda Power Plant modifications.

### **1.3 Initial concept of SLCF pipeline**

In discussions regarding the Oxidation Retrofit Program (ORP) at the Diemer plant and the Orange County Area Study, the concept of a SLCF was initially considered as a potential means of maintaining reliable deliveries during scheduled shutdowns of the

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Second Lower Cross Feeder (SLCF)  
December 2013

Changes in RED added by Karl Seckel in 2019

Diemer plant required for ORP construction and during unanticipated changes in demands or operational emergencies in the near-term, prior to the projected on-line date of the CPA Project.

Maintaining reliable deliveries to the Orange County service area during construction of the Diemer ORP was an important consideration. The construction of ozonation facilities at the Diemer plant was scheduled to occur during a five-year period from 2008 to 2012. At least three shutdowns of the plant, with durations of up to 10 days, were planned during this construction period. The potential SLCF would connect from the Second Lower Feeder to Metropolitan's East Orange County Feeder #2 and the AMP to deliver treated water from the Jensen plant to the south Orange County service area in the event that demands were higher than expected during the construction period, or if the shutdown durations were extended.

During the course of the Orange County Area Study, the projected on-line date of the CPA Project was updated to 2018-2025. As a result, there was considerable discussion among the study group regarding how near-term reliability concerns could be addressed in advance of construction of the CPA Project. These discussions eventually led to the initial concept of the SLCF as an accelerated component of the CPA Project.

The full buildout of the CPA Project had planned to include a link between the AMP and the East Orange County Feeder #2 (EOCF2) pipeline to allow some CPA water to be moved further west into Metropolitan's Central Pool. The concept for the SLCF was to accelerate the construction of the western segment of the CPA pipeline system and shift its location further north. This was intended to allow Jensen water to be delivered into southern Orange County (flowing east) in the near-term, and then CPA water to be delivered through this same pipeline into the Central Pool (flowing west) in the future. The driver for Metropolitan to proceed with the SLCF was its operational flexibility, as it would allow long outages to be scheduled at the Diemer plant during the upcoming ORP construction. Secondary benefits would include helping Orange County retail agencies meet demands during unplanned outages of the Diemer plant.

The SLCF was initially sized at 84-inches in diameter to allow 350-400 cfs of CPA water to move westward into the Central Pool. At this diameter, the SLCF was projected to be able to deliver up to 100 cfs of Jensen water eastward into the EOCF2 for delivery into south Orange County. However, such deliveries could only be made during Diemer outages, and the capacity would vary widely depending upon actual system operating conditions at the time.

(Note that the SLCF had initially been referred to as the Orange County Cross Feeder, including within the 2005 and 2006 Board letters).

## **2.0 Implementation of the SLCF as a regional facility**

### **2.1 Board actions**

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In July 2005, Metropolitan's Board authorized preliminary design of the Second Lower Cross Feeder along with final design of the Coastal Junction Bypass project. These projects were justified by their ability to help Metropolitan schedule a series of upcoming long-duration outages associated with the Diemer Oxidation Retrofit Program.

In January 2006, the Board authorized final design of the SLCF. This action was based upon the near-term benefit of helping schedule required Diemer shutdowns. Secondary benefits included increased member agency reliability during potential emergency outages of the Diemer plant. The appropriated amount included funds for final design and acquisition of permanent and temporary easements.

The SLCF was planned to be an 84-inch diameter pipeline with a length of about 2.4 miles. It was to tie into the Second Lower Feeder near Red Gum Avenue in the city of Anaheim, follow public rights-of-way along Miraloma Avenue through primarily industrial areas within Anaheim and Placentia, and connect to the EOCF2 pipeline at Richfield Road in Placentia.

## **2.2 Changes in conditions**

By mid-2007, Metropolitan's Integrated Area Study (IAS) was nearing completion. This collaborative planning effort noted that several conditions had changed significantly, leading to discussions regarding the justification for continuing with the SLCF project. These changes included:

- Construction cost estimates for the SLCF increased from \$32 million to \$70-\$80 million due to a number of factors including the tight bidding market, significant shoring requirements, and the need for large-diameter isolation valves.
- Hydraulic modeling demonstrated that the projected benefits of the SLCF would decline over time. As overall demands increase within the Central Pool, less and less water could be conveyed through the pipeline. This analysis assumed that upstream demands would be met and that Orange County would receive the remaining capacity that could be delivered.
- Construction of the Diemer ozonation facilities was proceeding as scheduled, and the planned Diemer shutdowns were being completed while maintaining reliable deliveries to Orange County through the existing distribution system, under lower demand conditions and based on local operational improvements made in Orange County. The potential SLCF would not be essential as originally anticipated to provide additional operational flexibility during the ORP construction shutdowns.
- The target on-line date for the CPA Project was revised from 2018-2025 to beyond 2045.
- Metropolitan's reliability strategy was clarified and there was a consensus of the IAS study team to continue with the past practice of only increasing system flexibility when opportunities arise through demand-driven projects.

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**Changes in RED added by Karl Seckel in 2019**

The result of these changed conditions was that Metropolitan no longer supported the SLCF as a Metropolitan-only project and progress on the final design effort was halted in 2007. At that time, approximately \$1 million had been expended out of the \$8.9 million appropriated amount. Collaborative discussions continued, however, regarding potential justification of the SLCF as either a “local” facility or a “joint” facility.

### **2.3 Reassessment of project for local benefits**

The SLCF project was reassessed as a facility that could improve the local distribution system, while opportunities were examined for providing regional benefits. For example, between late 2008 and mid-2010, Metropolitan worked with MWDOC and its consultant (AECOM Boyle) to reassess the feasibility of a reconfigured SLCF that might include a pump station and potentially provide local and/or regional benefits as well as operational flexibility for planned or unplanned facility outages. While this reassessment was successful in identifying additional potential local benefits of a SLCF pipeline, such as providing expanded access to local groundwater supplies and a limited potential for the SLCF to meet retail demands in an emergency, no compelling regional benefits were demonstrated for this pipeline. The summary report was left in draft form.

In the South Orange County Water Reliability Study, which was conducted by MWDOC in 2012 and 2013, the concept of a reduced diameter (48”) SLCF was identified as one of several options to help improve reliability for south Orange County agencies.

## **3.0 Findings and Discussions in 2013**

Metropolitan’s findings related to the SLCF are summarized below in terms of Metropolitan’s overall approach to infrastructure reliability and system flexibility.

- **Infrastructure reliability.** Metropolitan recognizes the member agency concerns regarding the reliability of Metropolitan’s infrastructure and the impact of a Metropolitan outage at the retail level. In response to such concerns, Metropolitan has demonstrated a significant commitment to infrastructure reliability by investing hundreds of millions of dollars over the past decade to ensure the reliability of its regional facilities.

Specific investments in the Diemer plant include:

- Approximately \$90 million has been expended to date on seismic upgrades at the Diemer plant alone. Key facilities have been upgraded based on current seismic codes and an improved understanding of the specific geotechnical issues at this site.
- Over \$130 million has been invested in rehabilitation projects at the Diemer plant over the past decade. A similar level of expenditures is planned over the next five years to ensure this facility remains reliable into the future.

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Changes in RED added by Karl Seckel in 2019

These investments have enhanced water delivery reliability within Orange County by reducing the risk of regional facility outages. These investments have also improved the reliability of the Diemer plant to be consistent with other Metropolitan regional facilities.

In summary, Metropolitan has followed a consistent approach to address specific vulnerabilities at existing facilities to enhance infrastructure reliability. From Metropolitan's perspective, new facilities such as the SLCF need to be justified by increased demands rather than by concerns over the reliability of existing infrastructure. However, when demand-driven facilities are constructed, Metropolitan strives to improve operational flexibility and reliability as described below.

- **System flexibility.** Metropolitan recognizes the importance of system flexibility to support water deliveries during emergencies and/or planned or unplanned facility outages. Metropolitan has consistently improved its system flexibility over time via multiple water sources, multiple treatment facilities, enhanced storage capabilities, interconnected piping systems, and conjunctive use programs. Metropolitan is also committed to continuing its past practice of increasing system flexibility and reliability through demand-driven projects.

For the SLCF pipeline, this approach to system flexibility may be summarized as follows:

- The initial proposal for the SLCF (and Metropolitan's Board action to initiate design) was consistent with Metropolitan's approach of increasing system flexibility through demand-driven projects. The SLCF was proposed as an accelerated component of the CPA Project which was being driven by projected increases in demands. The acceleration of a small component of this project was also deemed reasonable in view of the near-term benefit of managing planned outages of the Diemer plant.
- After conditions changed significantly (due to better definition of construction costs, declining benefits, changed CPA timing, and completion of the Diemer ORP construction), there was no longer justification to continue with the SLCF pipeline project to meet regional needs.

MWDOC and a number of MWDOC's member agencies held several discussions with Metropolitan's engineering and operations staff in the summer of 2013. MWDOC and ten of its agencies had recently completed a cost estimate for a revised alignment of the SLCF under the assumption that hydraulically, between 50 and 100 cfs of water could be conveyed via the Metropolitan system and delivered to Orange County via the Second Lower Feeder under emergency conditions. The purpose of the recent discussions was to better understand the situations and conditions under which this capacity could be received. During those discussions, Metropolitan staff indicated the following:



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- Under the best of conditions, the hydraulic capability of conveying Jensen water across the Los Angeles portion of Metropolitan's distribution system is challenging. Typically, the maximum flow rate possible at the junction of the Sepulveda Feeder and the Second Lower Feeder would be about 130 cfs. After traveling east through the distribution system, a maximum of about 100 cfs could be delivered to Orange County under **absolute optimum** conditions.
- To maximize deliveries to Orange County, flow demands on the Sepulveda Feeder would have to be reduced. However, it was noted that some agencies cannot fully discontinue deliveries from that pipeline, and under some emergency conditions (e.g. power outages), would likely increase their demands upon Metropolitan's system.
- Assurances regarding the likelihood of dependable deliveries through the Second Lower Feeder during emergency situations are difficult to make. Metropolitan suggested that Orange County may want to consider other options, such as conveyance of local supplies to improve reliability, in order to determine what solution may provide the best value of investment for the County.

Metropolitan raised the issue of the Sepulveda and the Second Lower Feeders being comprised of Prestressed Concrete Cylinder Pipe (PCCP). These feeders have been recommended to be rehabilitated under a long-term program that will involve slip-lining 100 miles of Metropolitan's distribution system. Major sections of the Second Lower Feeder will be included, requiring 8 to 10 years to complete. The slip-lining work will result in a loss of about 8 inches of inside diameter and thus reduce the carrying capacity of the pipeline, further reducing potential delivery flow rates through the SLCF.

In further discussions, Metropolitan indicated that the seismic resilience of the Diemer Plant has been improved considerably over the last 10 years and that the plant is now better equipped to survive seismic shaking and earth movement, as follows:

- Metropolitan has conducted seismic reviews of its facilities for over 15 years and has completed considerable seismic upgrades at the Diemer Plant. This effort included re-assessing facilities based on updated code requirements and site-specific seismic data, and then reinforcing existing structures when warranted.
- Metropolitan's seismic design criteria are based on the current California Building Code (CBC), American Society of Civil Engineers (ASCE) Manual No. 7 - Minimum Design Loads for Buildings and Other Structures, ASCE Manual No. 41 - Seismic Rehabilitation of Existing Buildings, and ASCE 350 - Code Requirements for Environmental Engineering Concrete Structures.
- These codes incorporate provisions for expected performance levels of specific facilities. For example, as an owner/operator of lifeline facilities, it is important for Metropolitan's



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water-related facilities to be available for disaster relief and fire suppression following code-level seismic events. Therefore, per the CBC, Metropolitan's water-related facilities are designed for a seismic performance level that would allow for continued water operation with minimal downtime for repair, based on the code design-level earthquake for the plant.

- At the Diemer Plant, water-related facilities are designed for the code-level earthquake. The controlling fault for the Diemer facility is the Whittier Fault. The goal of this approach is for the facility to be safely occupied and its functionality restored in less than two months.
- Although difficult to predict with any degree of certainty, Metropolitan estimates the potential duration of outages for various facilities for code design-level events as illustrated in Table 1:

Table 1 – Estimated Facility Outage Durations for Code Design-level Events

Facility	Duration
MWD - CRA	Up to 6 Months
DWR	<del>Approximately 6 months</del> <sup>(1)</sup> West Branch 6 to 12 months East Branch 12 to 24 months or longer
MWD – Conveyance and Distribution	1 week to 2 months
MWD – Treatment Plants	1 week to 2 months

(1) The assumption of recovery in 6 months was modified per MWD's preliminary analysis per the Seismic Resilience Water Supply Task Force Report, March 30, 2016, which suggests that partial flows may be restored on the West Branch within 6-12 months. The level of uncertainty regarding potential damage and repair scenarios for the East Branch is considerably higher given the extensive length of aqueduct and higher number of facilities within close proximity to the SAF. Preliminary evaluations suggest that repairs to restore partial flows along the East Branch may exceed 12-24 months. (Information in RED added by Karl Seckel in 2019)

- Metropolitan has encouraged all member agencies to consider their unique situations and plan accordingly. During the preparation of the Orange County Reliability Study, Orange County retail agencies reached a consensus for their local planning criteria to accommodate delivery interruptions from the Metropolitan system of up to 60 days. During the recovery period following a major earthquake, there would be triage and

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prioritization to bring facilities back into operation in as short a time as possible at both the regional and local levels.

#### **4.0 Conclusion**

Through a series of cooperative efforts, studies and discussions over a number of years, Metropolitan has concluded that the SLCF project, even when considered as a local project within Orange County, may not represent the best investment for enhancing emergency reliability. The ability of the SLCF to deliver water into Orange County under emergency conditions would be highly dependent upon upstream conditions at the time of an event. As a result, Metropolitan could not guarantee a specific delivery capacity for the SLCF during an emergency. Furthermore, Metropolitan has invested heavily in improving the resilience of the Diemer plant. Metropolitan supports the consensus of Orange County water agencies to consider options that would enable the region to withstand interruptions of Metropolitan supplies for up to a 60-day period.

## **Second Lower Cross Feeder Project Review**

June 2014

Municipal Water District of Orange  
County



## **Presentation Agenda**

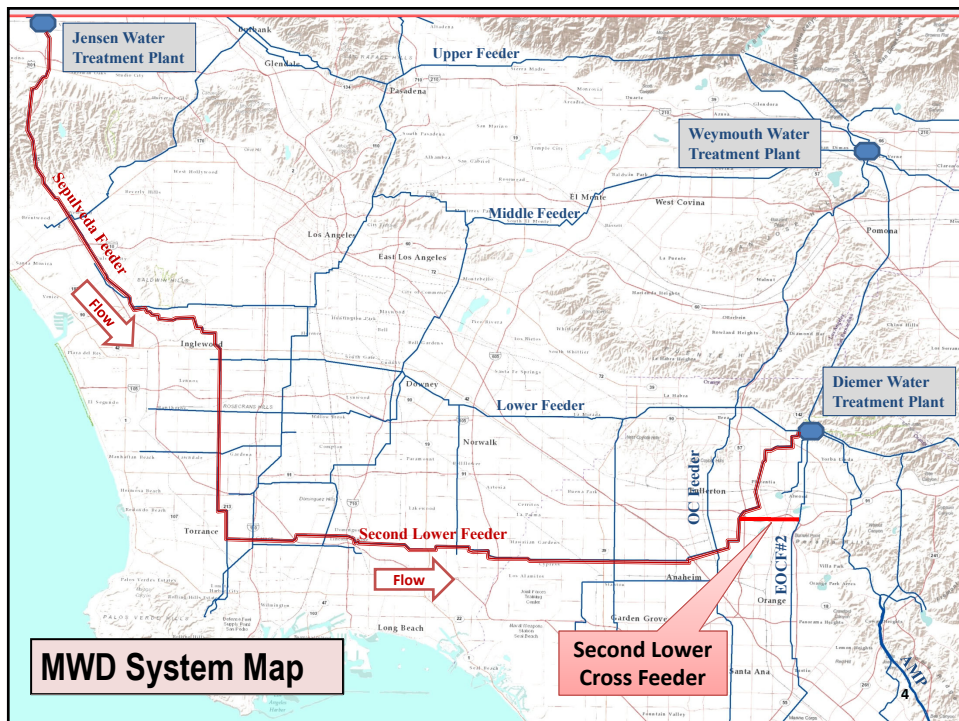
- **Project Overview**
- **SLCF Chronology**
- **MWDOC & MWD Joint Study**
  - **Purpose**
  - **Preferred Alternative**
  - **Cost estimate**
- **MWD Summary and Conclusions**
  - **Hydraulic Analysis**
  - **Conclusions**
- **Local Conclusions**



## Second Lower Cross Feeder Chronology

Date	Milestone
September 2001	Project identified in SOC Water Reliability Study
October 2005	MWD identifies SLCF as benefit to CPA and ozone upgrade shutdown at Diemer Plant.
January 2006	MWD begins design of SLCF, 84" pipeline in Anaheim
Mid 2007	MWD Integrated Areas Study complete, CPA pushed to 2049, SLCF project cancelled.
October 2008	MWD & MWDOC initiate joint study of benefits SLCF.
June 2010	Joint Study complete, 48" pipe and conjunctive use identified.
2011-12	Alignment and cost estimates studied, discussion with MWD on reliability benefits continue.
January 2013	Preferred alignment chosen for "emergency only" project, cost estimate \$51 million.
December 2013	MWD SLCF Summary and Conclusions, MWD has made large investments at Diemer; MWD does not see a regional benefit.
May 2014	SLCF agency participant meeting.

3



### Assumptions for SLCF for “Emergency Only” Scenario

- 48-Inch Welded Steel Pipeline
- 100 cfs is available from Second Lower Feeder during the emergency
- Did not consider groundwater uses under this scenario

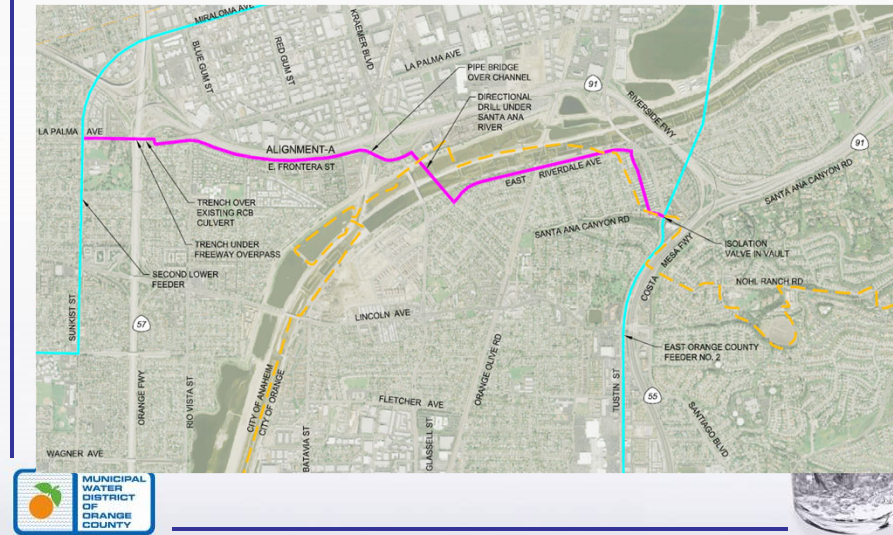


### Studies Completed

- Second Lower Cross Feeder Reassessment Study with MWD and MWDOC
  - June 2010, by AECOM
- Second Lower Cross Feeder Schematic Design Cost Estimate for “Emergency Only” Scenario
  - January 2013, by DLM Engineering
- Summary Memorandum for SLCF Pipeline Project
  - January 2013, by Dudek and DLM Engineering



## Preferred Alignment



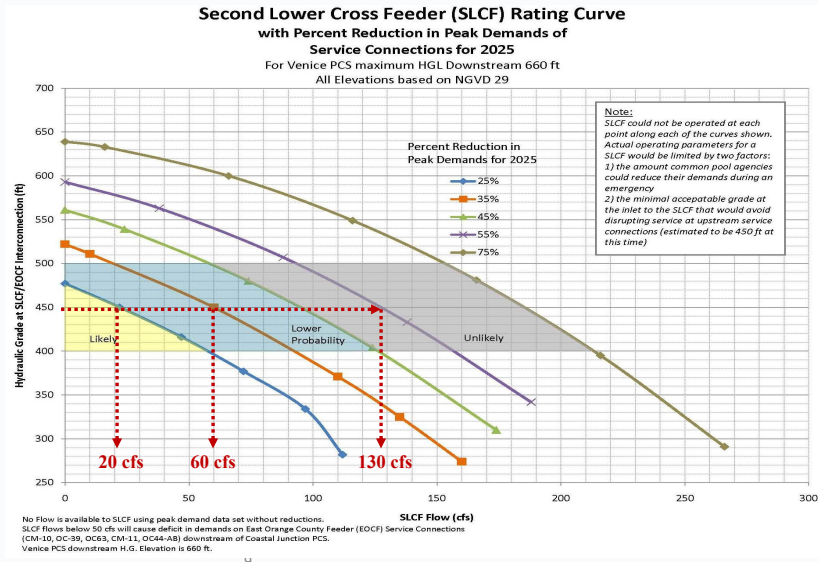
## Construction Cost Estimate (June 2016)

• Pipeline	<b>\$31,500,000</b>
• Pump Station	<b><u>\$11,800,000</u></b>
• Construction	<b>\$43,300,000</b>
• Seismic/Geotechnical	<b>\$200,000</b>
• Preliminary Design	<b>\$500,000</b>
• Final Design	<b>\$ 3,700,000</b>
• Construction Mgmt.	<b><u>\$ 3,700,000</u></b>
• Total	<b>\$51,400,000</b>





## MWD Hydraulic Analysis



## MWD Conclusions

- MWD has made large reliability investments at Diemer
- MWD cannot guarantee a specific delivery capacity for the SLCF during an emergency
  - MWD's modeling showed that very little water (if any) would be available for the SLCF during an emergency;
  - Emergency situations make it more difficult
- There would be no useful purpose for MWD to participate in the SLCF project
  - The project might have some local benefits
- MWD believes the project might not represent the best investment for reliability for south Orange County
- MWD policy is that NEW facilities need to be justified by increased demands
  - Rather than by concerns over the reliability of existing infrastructure

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## MWDOC and Local Agency Conclusions

- Difficult to justify investment without other assurances
- Other opportunities and investments can be made to achieve the reliability desired out of the SLCF project



Questions?



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## ENGINEERING & PLANNING

<b>Doheny Ocean Desalination Project</b>	<p>On June 27, 2019 the South Coast WD (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.</p> <p>SCWD subsequently filed its Notice of Determination and is beginning the permitting process with various permitting agencies.</p> <p>In March 2018, SCWD was awarded a \$10 million grant from the State Department of Water Resources for the Doheny Ocean Desalination Project.</p> <p>In April 2019, U.S. Representative Mike Levin announced that SCWD is set to receive more than \$8.3 million in US Bureau of Reclamation (USBR) WaterSMART Desalination Construction Program grant funding for the Project. The grant is subject to pending federal appropriations and needs to be included in the E&amp;W Appropriations list of projects for which the Secretary of Interior intends to award grants. Congressman Levin is acting as the lead office on this request in the House.</p> <p>On July 11, 2019 South Coast WD'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.</p> <p><b>Next Steps:</b></p> <ol style="list-style-type: none"> <li>1. SCWD will be holding a Special Board Meeting on October 30, 2019 at 6:00pm regarding an detailed independent 3<sup>rd</sup> party construction cost estimate for the project.</li> <li>2. Alternative Power Supply Management Study –SCWD staff is currently reviewing a proposal from engineering consultant Burns &amp; McDonnell for a 6 month detailed study of alternative power alternatives. The study would include a District-wide assessment and Conceptual Management Plan including studying a community choice aggregation option.</li> <li>3. Legislative – AB 1752 passed and was signed into law to allow the South Coast WD to proceed with a DBO Contract while maintaining access to State funding for the Project (both DWR grant money and SRF loans).</li> <li>4. Project Delivery – Beginning work on the development of several documents including; Request for State of Qualifications (SOQ) for potential bidders, contract documents, and a RFP package.</li> <li>5. Peer Review Cost Estimate – California American Water (CalAm), who developed the 6.4 MGD Monterey Ocean Desal Project using slant well technology, is completing a peer review cost estimate. A Board workshop will present the assumptions, costs, and lessons learned.</li> </ol>
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	<p>6. Slant Well Risk Evaluation – A second workshop will be scheduled to get CalAm’s perspective on the risks of slant well technology.</p> <p>7. SCWD Local Potable Water System Integration – Updated hydraulic modeling and surge analysis of the SCWD system.</p> <p>8. Project Partners – continuing to discuss partnering opportunities with interested agencies</p> <p>9. High Level Schedule –</p> <table> <tr> <td>a. Environmental permitting</td><td>Summer 2020</td></tr> <tr> <td>b. DBOM Contract Develop/Award</td><td>Fall 2020</td></tr> <tr> <td>c. Funding</td><td>Fall 2020</td></tr> <tr> <td>d. Final Design</td><td>Dec. 2020</td></tr> <tr> <td>e. Construction</td><td>Late 2022</td></tr> </table>	a. Environmental permitting	Summer 2020	b. DBOM Contract Develop/Award	Fall 2020	c. Funding	Fall 2020	d. Final Design	Dec. 2020	e. Construction	Late 2022
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b. DBOM Contract Develop/Award	Fall 2020										
c. Funding	Fall 2020										
d. Final Design	Dec. 2020										
e. Construction	Late 2022										
<b>MET 2019-20 Shutdown Schedule</b>	<p>MWDOC staff have held several meetings with MET and MWDOC member agencies since July 11, 2019 to review the MET 2019-2020 Shutdown Schedule. One of the proposed shutdowns involves the complete shutdown of the Diemer Water Treatment Plant to accommodate four construction projects at the plant. Currently MWDOC staff is working with potentially affected agencies to see what options are available to accommodate a Diemer shutdown; given the likely reduction in PFOA &amp; PFOS Response Level triggers in the fall of 2019, and its impact to multiple groundwater wells.</p>										
<b>South Orange County Emergency Service Program</b>	<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 SOC meeting was held in April 11, 2019, a spin-off meeting was held with MWDOC, Dudek and operations staff from MNWD and South Coast WD to discuss how SOC operators can 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 and it should not be a constraint. This will help to maximize deliveries from IRWD during emergency events.</p> <p>An upcoming meeting with all SOC agencies will be held over the next month or so to continue the discussions on cost-sharing facilities and operations that will ultimately involve negotiations directly between SOC Agencies and IRWD. These discussions could also involve discussions and negotiations between SOC and other groundwater producers as well. Information being developed by OCWD and MNWD will be important to the process as well. These efforts have been slowed a bit by the PFAS issues and because of the OCWD/MNWD groundwater storage investigation.</p>										

<b>Strand Ranch Project</b>	MWDOC and IRWD staff have been exchanging information about the benefits from having water stored in the Strand Ranch Project in case emergencies occur such as Delta Levee Failures that might result in no exports from the Delta until operations are restored. Previously, staff from the two agencies have developed an evaluation process to quantify the benefits of Drought Protection afforded by having water stored in the Strand Ranch Project from having the water classified as “extraordinary supplies” under MET’s Water Supply Allocation Plan.								
<b>Poseidon Resources Huntington Beach Ocean Desalination Project</b>	Poseidon is awaiting a permitting meeting with the Santa Ana Regional Water Quality Control Board which is anticipated prior to the end of the calendar year.								
<b>SMWD Rubber Dams Project (San Juan Watershed Project)</b>	<p>Santa Margarita Water District continues to focus on diversifying its water supply portfolio for south Orange County residents, businesses, schools, and visitors. SMWD approved the Environmental Impact Report (EIR) for the San Juan Watershed Project.</p> <p>The San Juan Watershed Project is being planned in three-phases and has the potential to develop an additional 4,010 to 8,240 acre-feet per year in addition to making better use of other natural supplies from the San Juan Groundwater Basin. At this time, funding is only being developed for the Phase 1 project. With the release of its EIR, the project may break ground in late 2020.</p> <p style="text-align: center;"><b>SUMMARY OF THE POTENTIAL ANNUAL AVERAGE PROJECT YIELD</b></p> <hr/> <table> <tr> <th><b>Project Phase</b></th><th><b>Phase Yield (AFY)</b></th></tr> <tr> <td>Phase I</td><td>30 – 2,000 (Average = 700)</td></tr> <tr> <td>Subsequent phases</td><td>3,980 – 6,240</td></tr> <tr> <td><b>TOTAL</b></td><td><b>4,010 – 8,240</b></td></tr> </table> <hr/> <p>SOURCE: WEI 2017 </p> <hr/>	<b>Project Phase</b>	<b>Phase Yield (AFY)</b>	Phase I	30 – 2,000 (Average = 700)	Subsequent phases	3,980 – 6,240	<b>TOTAL</b>	<b>4,010 – 8,240</b>
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<b>Trampas Canyon Dam and Reservoir</b>	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.								
<b>Meetings</b>									
	Charles Busslinger attended the September 20, 2019 South Coast Air Quality Management District Stationary Source Committee meeting with members of the Buried Utilities Coalition (BUC). BUC members provided public comments regarding AQMD’s proposed action on Asbestos Emissions from								

	Demolition/Renovation Activities (Proposed Amended Rule 1403). BUC members were successful in getting AQMD staff to continue working on the proposed amendment, and action on amending the rule has been postponed until early next year. The BUC will continue to push AQMD to make amendments that recognize that asbestos cement pipe can and should be treated differently from asbestos containing building materials; and to work with Cal/OSHA to modify existing asbestos pipe worker training.
	Karl Seckel, Rob Hunter, Harvey De La Torre and MET Directors Brett Barbre and Larry Dick met with MET staff to discuss the meter testing proposal for the OC-70 service connection. The group also discussed a number of other issues that have been outstanding at the facility and included access for EOCWD staff to the facility, work necessary for EOCWD to locate a generator on-site (if they want), relocation of a water sampling tap and an EOCWD totalizer outside of the facility, a refund from MET of the costs incurred by EOCWD to install a transfer switch at the facility and rehabilitation and repair work proceeding at the facility.
	Charles Busslinger attended the September 10, 2019 San Juan Basin Authority Board meeting. Pumping conditions were reviewed and continue to be 'on plan'. SJBA is also beginning to take steps to address pending implications of the transfer of the City of San Juan Capistrano's water and sewer operations to SMWD. The preliminary target timeframe for completion of the City/SMWD joint application to OCLAFCO is the first quarter of 2020.
	Charles Busslinger attended MET's Water Quality Manager's Meeting in September where the annual presentation by MET was made on the chemistry and background on nitrification. OC was well represented at the meeting. Charles used the meeting opportunity to convene a follow-up meeting with MET water quality staff and operations or water quality staff from the West Orange County area that had recently suffered a nitrification issue in the MET system to discuss the outcome with MET staff and to gain a clear understanding for future coordination purposes.

**Status of Ongoing WEROC Projects  
October 2019**

<b>Description</b>	<b>Comments</b>
<b><i>Coordination with WEROC Member Agencies</i></b>	<p>Final: WEROC, with Michael Baker as the lead consultant, has facilitated 19 agencies through the process of updating the Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan. Plan binders have arrived and were delivered to all participating agencies.</p> <p><i>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). A full report is included in this month's P&amp;O Committee.</i></p> <p>Daniel attended the UASI funded ICS 300 course and is reviewing FEMA pre-disaster mitigation grants as an avenue to provide no cost ICS-300 and ICS-400 training to member agencies at MWDOC potentially in October. TEEX (Texas mobile FEMA trainers) have also been requested to provide this training at no cost should FEMA grant not be available.</p>
<b><i>Training and Programs</i></b>	<p>MWDOC and WEROC participated in the Diemer Water Treatment Plant tabletop exercise on 8/29/19 and will be replicating it in house with some added elements. Ongoing in house training on "stop the bleed" and basic first-aid for MWDOC employees, Daniel intends to provide these types of trainings twice per month.</p> <p>Janine is coordinating in-house efforts towards Emergency Preparedness Month in getting ready for the 10/17 at 10:17 Shakeout Exercise.</p> <p>Daniel has coordinated with the OC Intelligence Assessment Center to have graphics designed and printed for "See Something – Say Something"</p>
<b><i>Coordination with the County of Orange</i></b>  <b><i>Coordination with the County of Orange (cont.)</i></b>	<p><i>Ongoing: OC OA Alert and Warning Working Group is a new committee to develop county-wide public Alert and Warning policies, procedures and tools such as to request and approval forms. This will be a 6-month planning effort. Daniel attended the August meeting and started to work with the County's Control One to address some of WEROC's concerns with the plans associated forms.</i></p> <p><i>Ongoing: WEROC staff participation in the OA Agreement Revision Working Group. Update: The OA Agreement Working Group met for the first time in several months. 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 on August 15 to start the review process. Agencies will need to take the agreement to their legal counsel and provide feedback to the OA. UPDATE 8/21/2019 MWDOC staff provided</i></p>

	<p>comments and submitted them for Legal Counsel to review prior to passing them along. As the current ISDOC representative, Karl Seckel has been coordinating with Mark Monin to seek any additional comments on the OA Agreement. Once the OA Agreement is approved, both ISDOC and WEROC will have representatives on the OA.</p>
<p><b><i>Coordination with Outside Agencies</i></b></p>	<p><i>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 these proceedings. Party Status ensures that we receive all communications regarding the proceedings and that our comments are included officially for consideration.</i></p> <p>Karl Seckel has been coordinating with James Pasmore with SCE towards improved compliance with the Phase 1 PUC ruling which MWDOC &amp; WEROC were part of. A reach out will have to be made with SDG&amp;E for the Southern portion of the County. Under a Non-Distribution Agreement, MWDOC shared maps of water agency assets they can use during urban area wildfire events.</p> <p>Daniel is working with Team Rubicon and identifying other potential sources of EOC volunteers during times of activation.</p>
<p><b><i>EOC Readiness</i></b></p>	<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>Janine scheduled and oversaw the install of the satellite phone fixed base antennas on all WEROC EOC locations. She also identified a discrepancy with one of the radios at the NEOC which is actively being addressed.</p> <p>Daniel and Janine are in the process of installing all satellite phone cradles and power stations.</p> <p>Janine coordinated the maintenance of the South EOC.</p>