Item No. 3

2019 Annual Operating Plan

MWDOC Joint Board Workshop

June 5, 2019

2019 AOP - Highlights

2018: Balanced Supplies and Demands

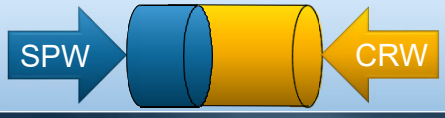
Maintained high end-of-year storage reserves (~2.5 MAF)

2019: Prepared for a Range of Future Conditions

SWP Allocation	Demands	Water Balance
40%	Normal	Balanced

Break Even: ~40% SWP Allocation

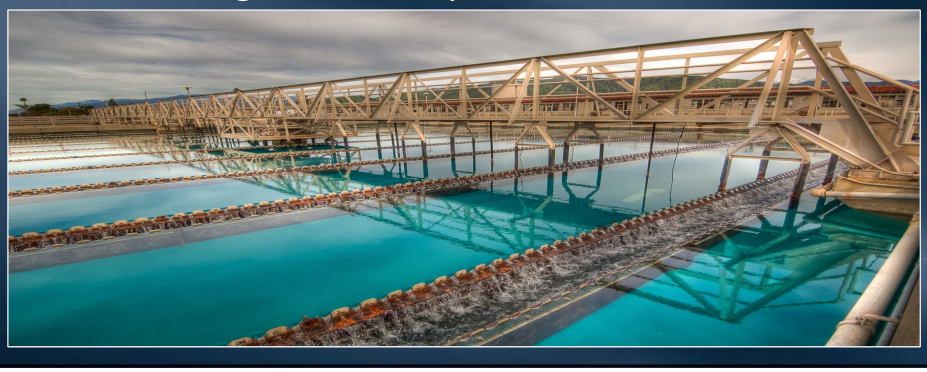
Adaptive Operations



Meeting Member Agency Demands

Background

- Adheres to the Administrative Code
- Provides a framework for strategic operations and continued reliability
- Communicates expected future operations to member agencies and partners

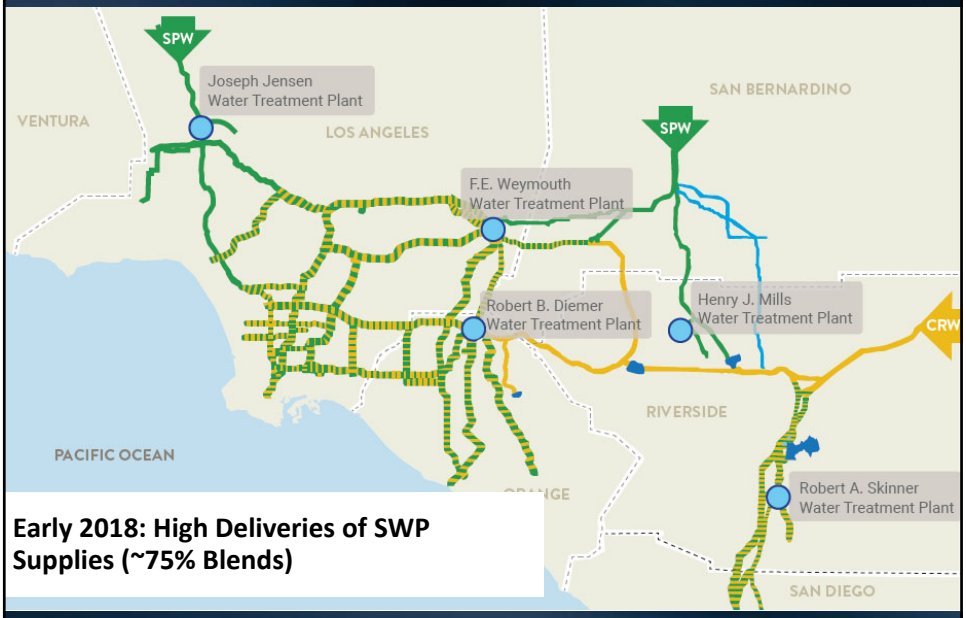


2018: Adapting to Changing Conditions

January 3, 2018

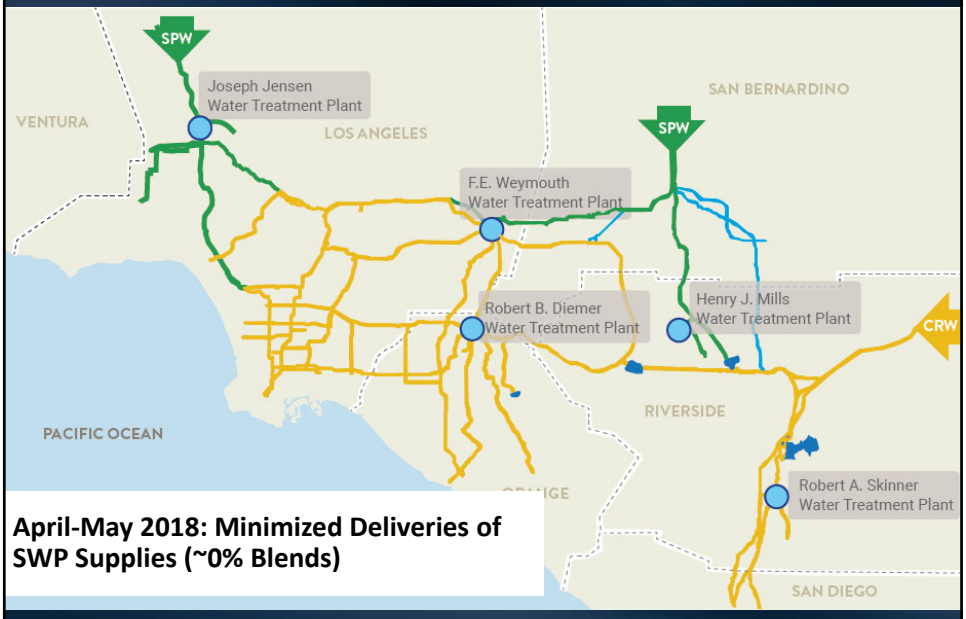
April 2, 2018

Balancing Operations Through Varying Conditions



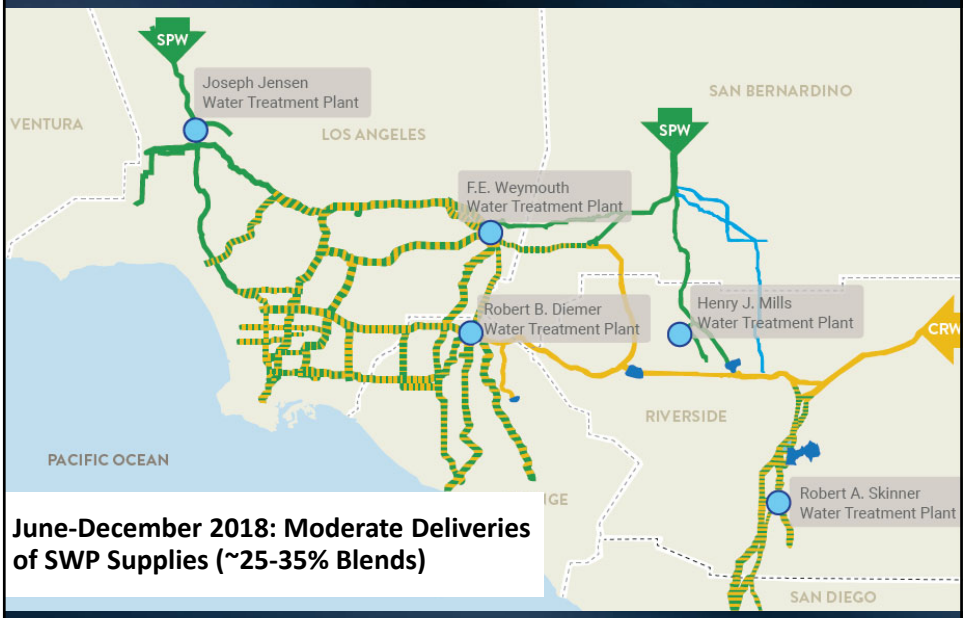
Early 2018: High Deliveries of SWP Supplies (~75% Blends)

Balancing Operations Through Varying Conditions



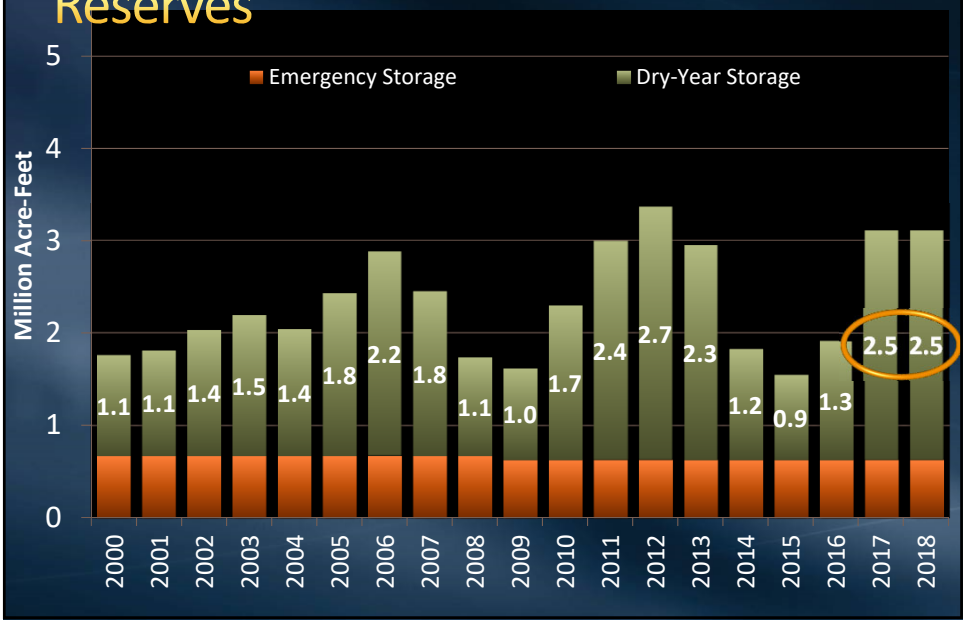
April-May 2018: Minimized Deliveries of SWP Supplies (~0% Blends)

Balancing Operations Through Varying Conditions

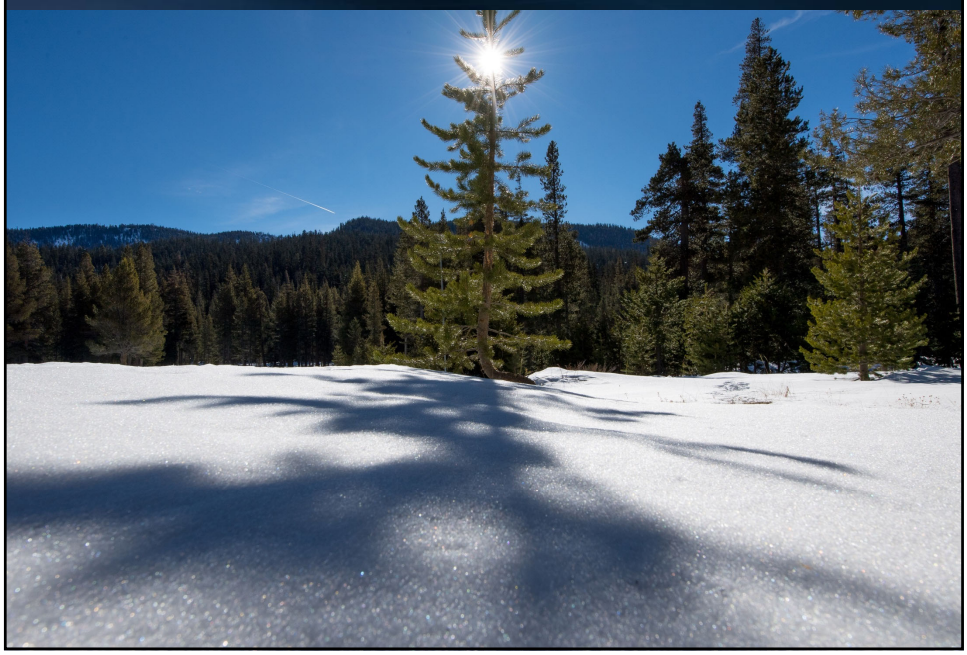


June-December 2018: Moderate Deliveries of SWP Supplies (~25-35% Blends)

Maintained High End-of-Year Storage Reserves



2019: Prepared for a Range of Conditions

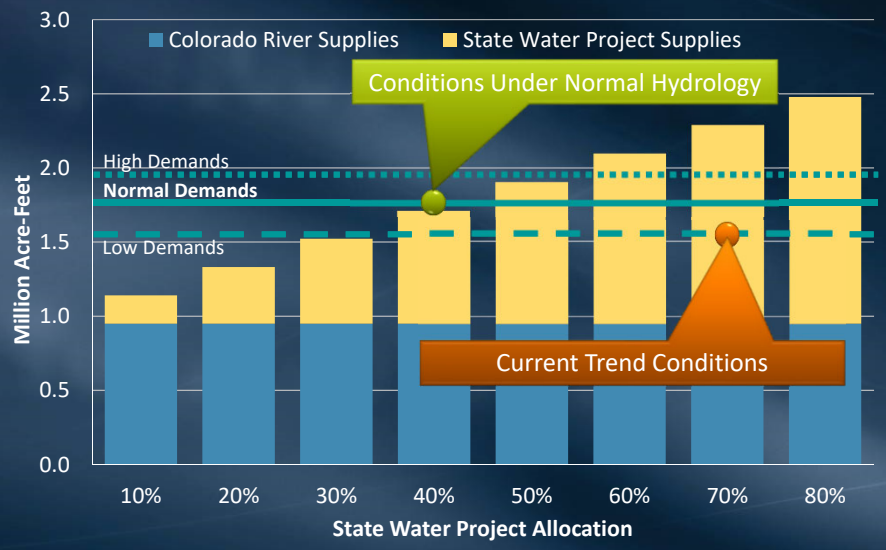


2019: Prepared for a Range of Conditions

Operating Principles

- Meet member agency demands
- Meet water quality requirements
- Manage storage according to WSDM principles
- Manage maintenance and shutdowns
- Meet blending objectives
- Maximize hydroelectric power production

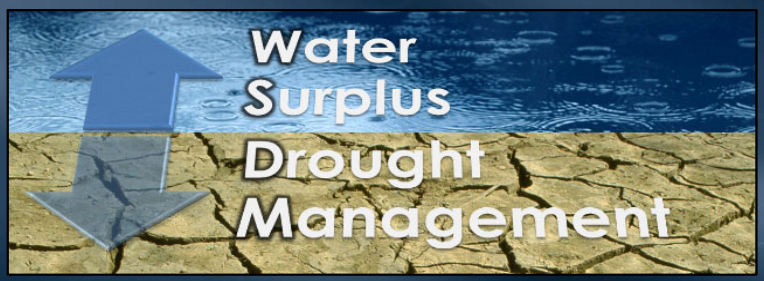
2019 Supply and Demand Balance



*Does not include transfers or other WSDM actions; agricultural adjustments also not included

Water Surplus and Drought Management Plan

Provide guidelines to prioritize the use of storage in shortage conditions and the replenishment of storage in surplus conditions



Manage Storage per WSDM Principles

WSDM Plan – Surplus Action Priorities

May Vary

Priority	Surplus Action (Fill)		
1	DVL	In-Region	Surface
2	Flex Storage		Groundwater
3	Conjunctive Use / Cyclic Storage	Out-of-Region	Surface
4	SWP Carryover		Groundwater
5	Lake Mead ICS		
6	Banking Programs		

- Priority is not meant to be a strict order
- Store water for most effective use in future droughts
- Priority can be adapted to current conditions

Manage Storage per WSDM Principles

WSDM Plan – Drought Action Priorities

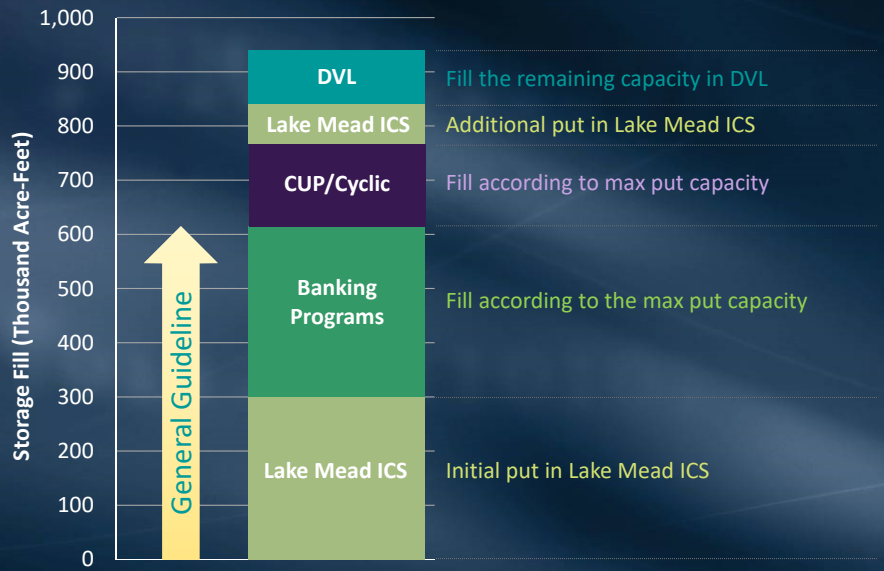
May Vary

Priority	Drought Action (Withdraw)		
1	DVL		
2	Banking Programs	Out-of-Region	Groundwater
3	Lake Mead ICS		Surface
4	SWP Carryover		
5	Conjunctive Use / Cyclic Storage	In-Region	Groundwater
6	Flex Storage		Surface

- Priority is not meant to be a strict order
- Take water strategically to be better prepared for future droughts
- Priority can be adapted to current conditions

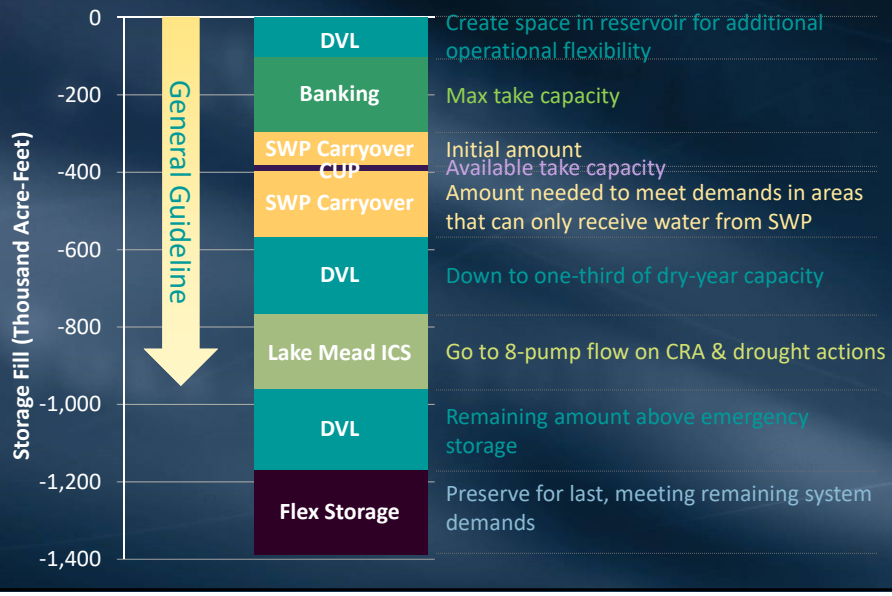
2019 Storage Fill Strategy

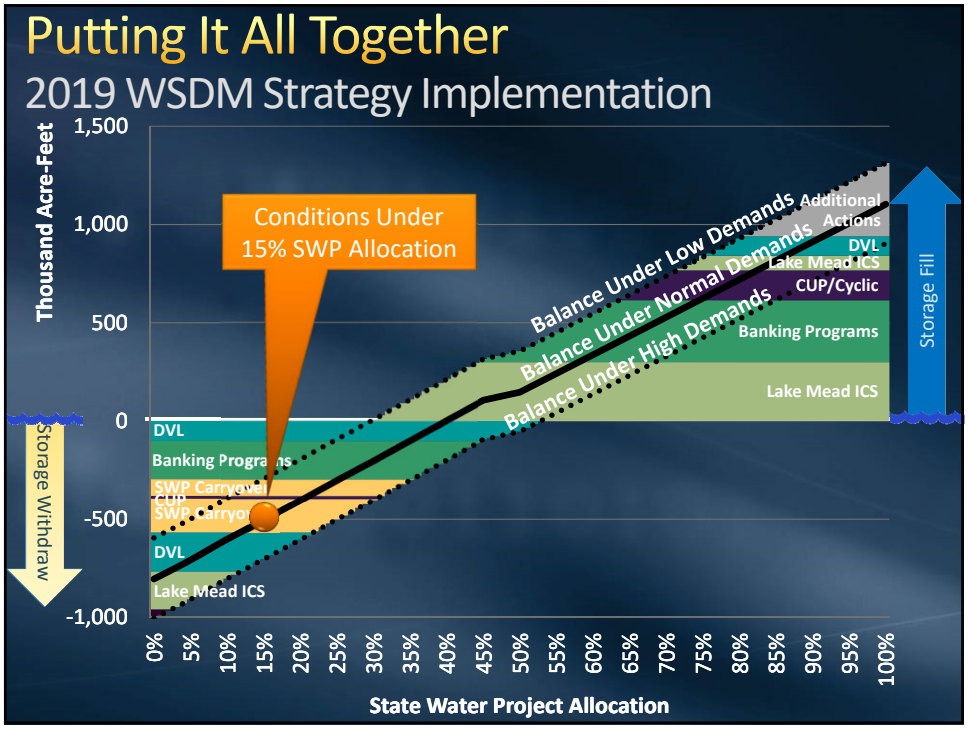
Surplus Conditions



2019 Storage Take Strategy

Shortage Conditions




Putting It All Together
2019 WSDM Strategy Implementation
Thousand Acre-Feet
1,500
1,000
500
0
-500
-1,000
Conditions Under
15% SWP Allocation
Balance Under Low Demands
Balance Under Normal Demands
Balance Under High Demands
Additional Actions
DVL
Lake Mead ICS
CUP/Cyclic
Banking Programs
Lake Mead ICS
Storage Fill
Storage Withdraw
DVL
Banking Programs
SWP Carryover
CUP
SWP Carryover
DVL
Lake Mead ICS
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
55%
60%
65%
70%
75%
80%
85%
90%
95%
100%
State Water Project Allocation


Continued Reliability
Managing the System

Ready for 2019 and Beyond

Deliveries of Water in Metropolitan's System in an Emergency

Concept

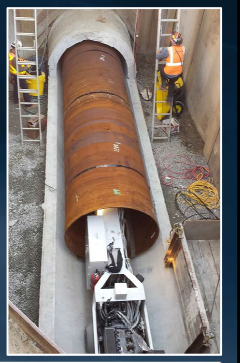
Providing options after a significant emergency

- Emergency deliveries of agency water in Metropolitan's system should be considered in a proactive and measured way, rather than ad-hoc after a significant natural disaster or emergency

Water System Reliability

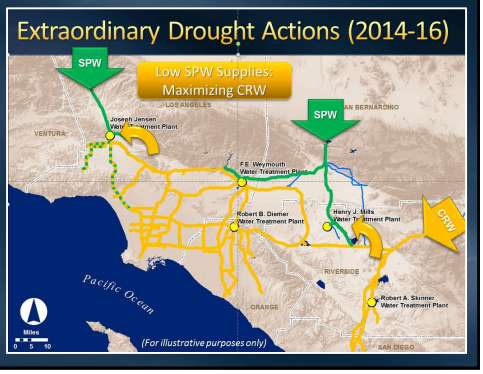
Addressing seismic vulnerabilities and system resiliency

- Infrastructure Reliability
  - Rehabilitation of prestressed concrete cylinder pipe
  - Seismic upgrades of treatment plants and conveyance systems
- Emergency Response
  - In-house manufacturing and construction capability
  - Emergency communications
  - Mutual assistance agreements with partners



Maintaining Water Deliveries during Emergencies – Current Options

- Utilize flexibility in Metropolitan's system to deliver water from multiple supply sources, feeders and/or reservoirs
- Utilize interconnections or operating agreements with other agencies



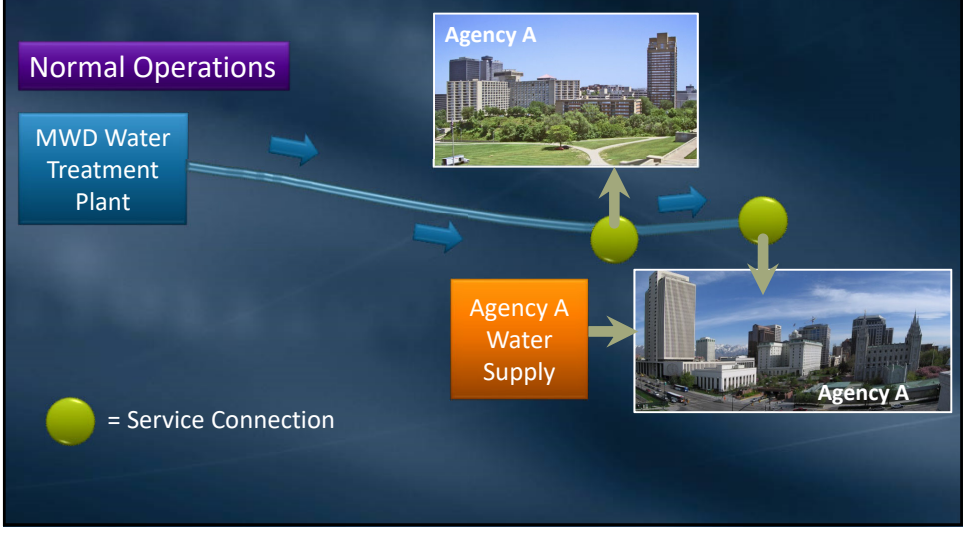
Maintaining Water Deliveries during Emergencies – *Potential Future Option*

- Agencies may benefit from a proactive approach for utilizing Metropolitan's system during emergencies
- Approach would only be used if there is no other way to deliver water to a portion of the agency service area
- Approach would not substitute for local agencies to take steps to improve emergency preparedness

Emergency Scenario

- An area within Metropolitan's system is out of service for a prolonged period after an earthquake
- There are no other delivery options for part of the impacted area
- Metropolitan's system could be used to supply a portion of the local system that has no other delivery options, subject to specific conditions, until repairs are complete

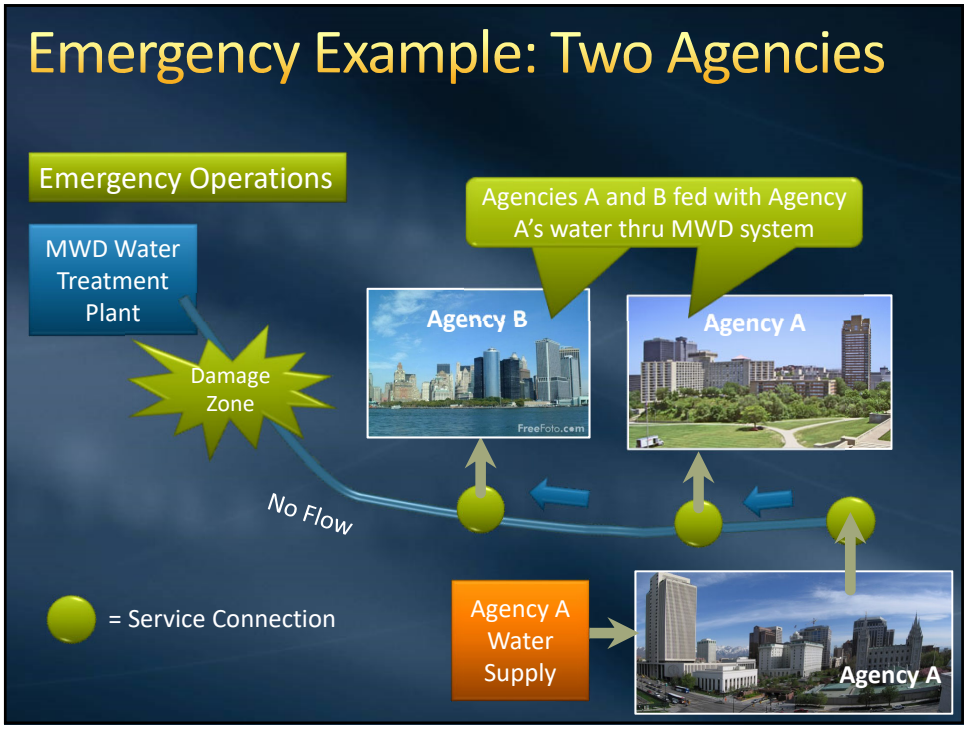
Emergency Example: One Agency




Emergency Example: One Agency
Agency A fed with water thru MWD system
Emergency Operations
Agency A
MWD Water Treatment Plant
Damage Zone
No Flow
Agency A Water Supply
Agency A
= Service Connection


Emergency Example: Two Agencies
Normal Operations
MWD Water Treatment Plant
Agency B
Agency A
= Service Connection
Agency A Water Supply
Agency A

Emergency Example: Two Agencies



Proposed Concept: Conditions for Emergency Water Deliveries

- Provide member agencies with the option of using Metropolitan's system for agency water deliveries in an emergency, under specific conditions
- Board and member agency feedback is essential for policy development
- "Emergency" definition
  - Metropolitan is physically unable to make deliveries to a member agency service connection for a specified period after an emergency, as determined by Metropolitan's General Manager

Proposed Concept: Conditions for Emergency Water Deliveries *(cont.)*

- Use of Metropolitan's system for emergency deliveries
- Ability to serve
- Water quality standards and liability
- Indemnification

Proposed Concept: Conditions for Emergency Water Deliveries *(cont.)*

- System integrity
- Compensation
- Operational requirements
- Term for emergency deliveries

Summary

- Emergency water deliveries in Metropolitan's system should be considered in a proactive and measured way before a major emergency
- Emergency deliveries must not displace other agency efforts to prepare for emergencies
- Amendments to Metropolitan's Administrative Code would be required