



AQUEDUCT OPERATING PLAN

JULY 1, 2019 to JUNE 30, 2020

On the Cover

VC4 Flow Control Facility Decommissioning	La Mesa Sweetwater Extension Pipeline Encasement	Quagga Filter for Pipeline 5 Shutdown
Electrical PM at Mission Trails Flow Regulatory Structure		Cathodic Protection Test Station Install
SDCWA Crane Operator	Valve Maintenance	SD15 Flow Control Facility Turnout Repair

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Executive Summary

The annual Aqueduct Operating Plan (AOP) reflects on-going efforts to optimize the delivery, treatment, and storage of water in the San Diego region through coordination between member agency Operating Heads, Water Authority staff, and the Metropolitan Water District of Southern California (MWD). Staff has updated the AOP for fiscal year 2020 to reflect anticipated operational opportunities and constraints, and to evaluate our performance for fiscal year 2019.

The AOP includes the Water Authority's anticipated pump station operating schedules and water treatment plant outages. The AOP was developed based on information received from member agencies, historical delivery/production data, capacity constraints within the Water Authority's aqueduct system, and scheduled shutdowns. Highlights for fiscal year 2020 include:

- System capacity will not be an issue in meeting the region's anticipated treated and untreated water requests.
- Treated water system utilization is anticipated to be between 7 and 9 percent of treated aqueduct capacity for the fiscal year.
- Untreated water system utilization is anticipated to be between 33 and 77 percent of untreated aqueduct capacity for the fiscal year.
- There will be seven treated water shutdowns and one treated water outages*.
- There will be six untreated water shutdowns and two untreated water outages*.

**Shutdowns affect large portions of the system and affect deliveries to a significant number of metered connections; outages are more localized and have considerably smaller impact on aqueduct deliveries.*

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Water Supply/Conveyance

Based on the projected demands, it is expected that demand for treated water for fiscal year 2020 will not exceed system capacity. These projections indicate that treated water deliveries for the year should result in flows ranging from 7 percent to 9 percent of the 650 cfs treated water pipeline capacity (Figure 1). Likewise, untreated deliveries for the year should result in flows between 33 percent and 77 percent of the 780 cfs untreated pipeline capacity (Figure 2).

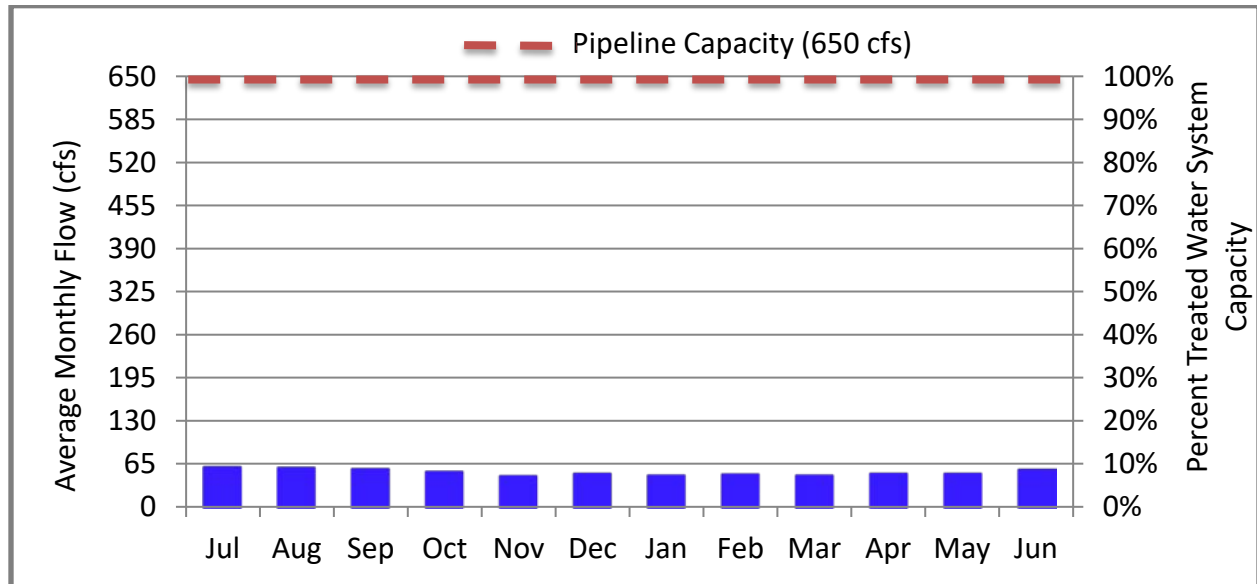


Figure 1 - FY 2020 Projected Treated Water System Utilization

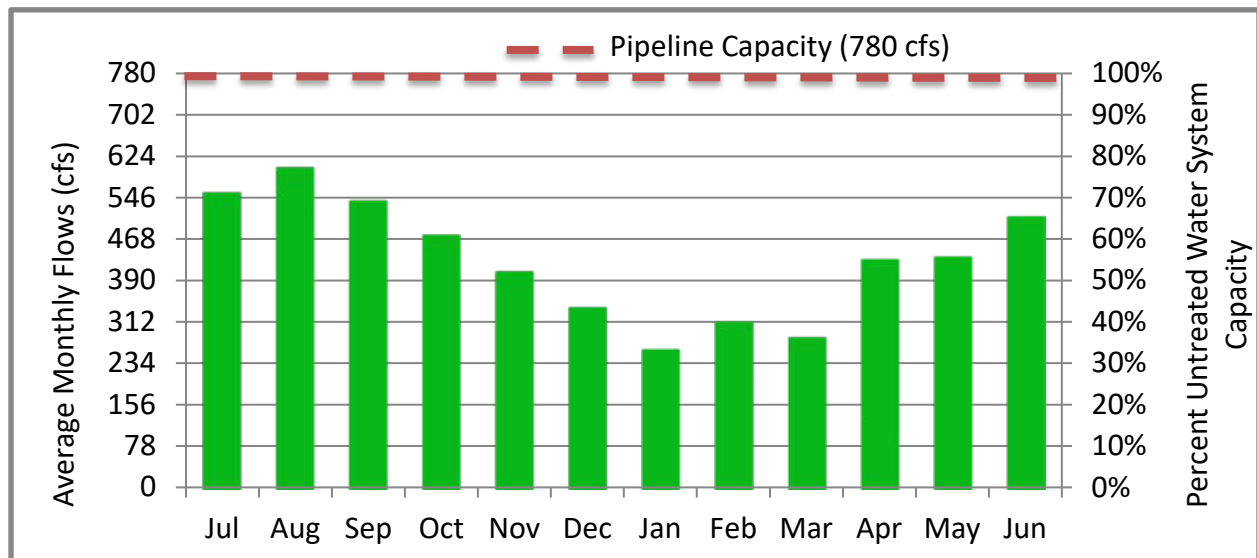


Figure 2 - FY 2020 Projected Untreated Water System Utilization

Fiscal year 2019 Water Authority demands for treated and untreated water have generally followed projected trends. Treated demands in July through September increased due to various mechanical issues at the Carlsbad Desalination Plant which limited the production of treated water and Twin Oaks Treatment Plant was at reduced capacity with on-going membrane replacement. Lower than expected treated demands were seen December thru March due to prolonged periods of rain. For fiscal year 2019, both treated and untreated water volumes were below pipeline capacities (see Figure 3 and 4).

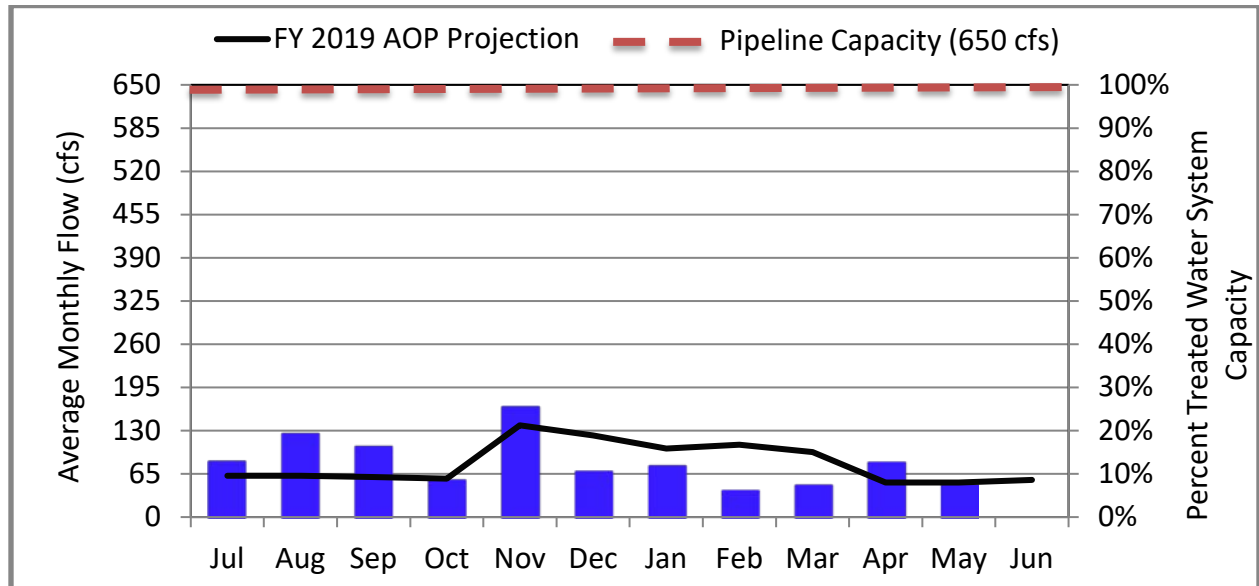


Figure 3 - FY 2019 AOP Treated Water Demand vs. Actual Deliveries

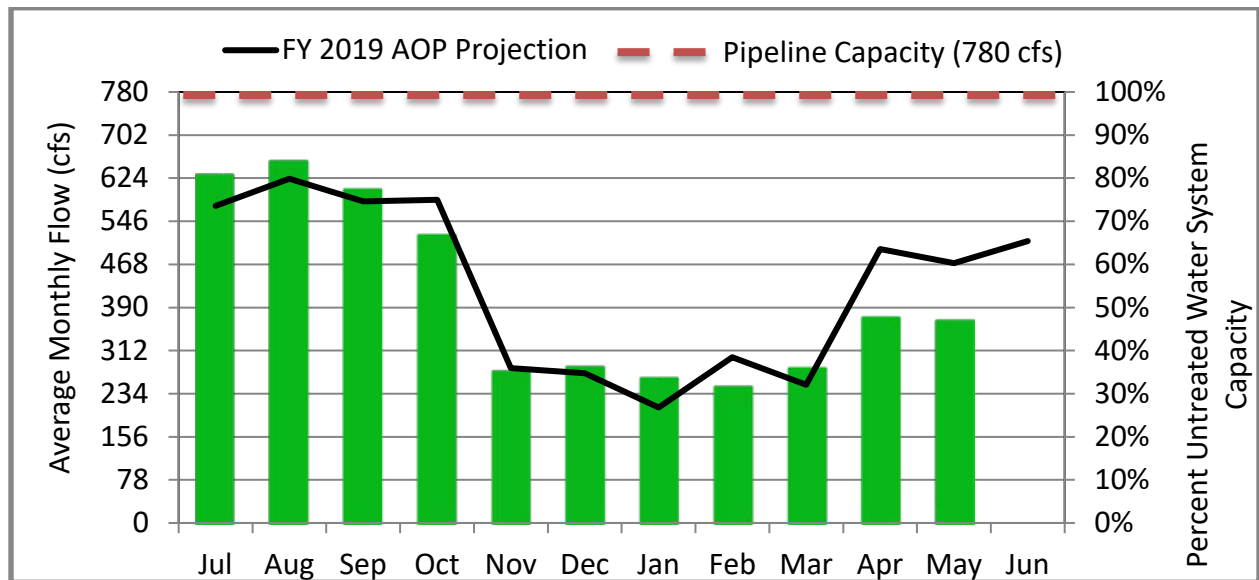


Figure 4 - FY 2019 AOP Untreated Water Demand vs. Actual Deliveries

Untreated Water Distribution Priorities

Through a series of discussions with member agency staff, key untreated operating concerns were identified and used to develop untreated water delivery priorities. These priorities are intended to provide a framework for Water Authority operators to manage potential conflicts during untreated water high demand periods. The priorities agreed upon regarding untreated water distribution is shown in Figure 5.

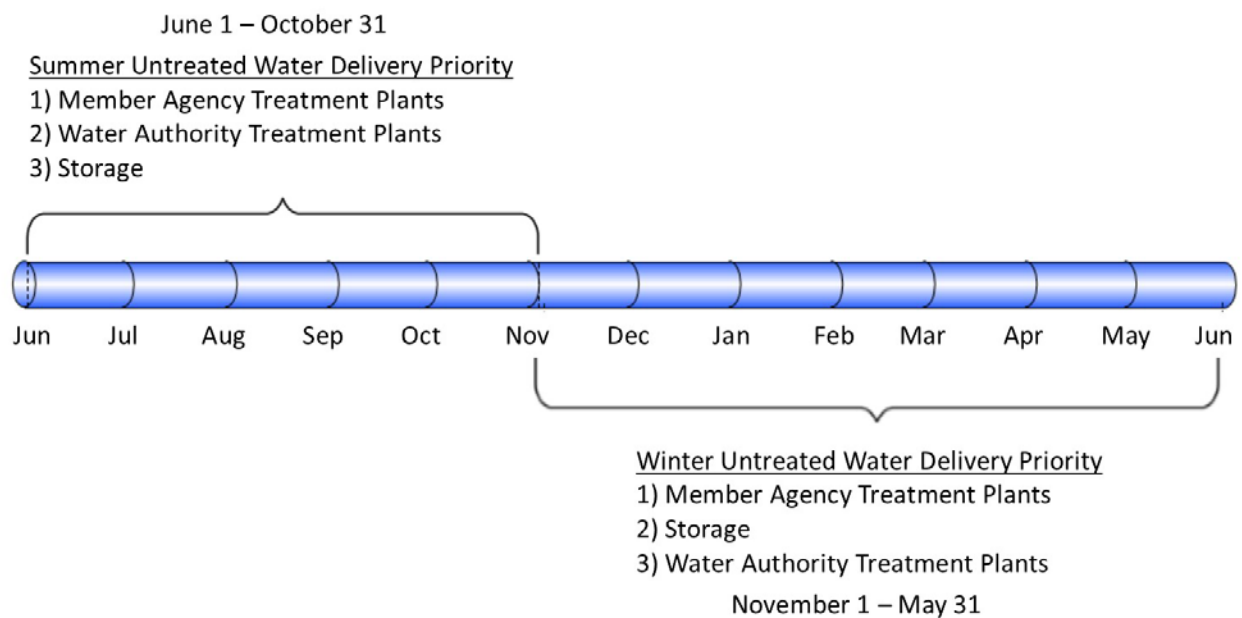


Figure 5 - Untreated Water Delivery Priorities

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Water Authority Aqueduct Shutdowns

The Water Authority conducts scheduled shutdowns of sections of pipeline and facilities for internal inspection, maintenance, and Capital Improvement Project connections on an annual basis. These shutdowns are coordinated with MWD, member agencies, and all Water Authority Departments. The schedule includes three years of shutdowns to allow for the proper planning of maintenance and CIP activities for both the Water Authority and its member agencies. This three-year schedule is updated each January to facilitate the compilation of the annual AOP. At that time, the next fiscal year's (July to June) aqueduct shutdown schedules are made available to member agency personnel for review and comment, prior to inclusion in the AOP.

For fiscal year 2020, there are seven treated water shutdowns, six untreated water shutdowns, one treated water outages, and two untreated water outages scheduled between October 2019 and June 2020. While the O&M Department will be involved in additional maintenance activities that will maximize the benefits of the shutdowns planned for fiscal year 2020, the primary reasons for these shutdowns are to support activities related to either asset management or warranty inspections. As noted in the Executive Summary, the difference between shutdowns and outages are a matter of "scale", shutdowns affect large portions of the system and deliveries to a significant number of metered connections, while outages are more localized and have considerably smaller impact on aqueduct deliveries. A timeline and brief description of the shutdowns and outages are shown in Figure 7.



Figure 6 – 1st Aqueduct Pipeline Condition Assessment

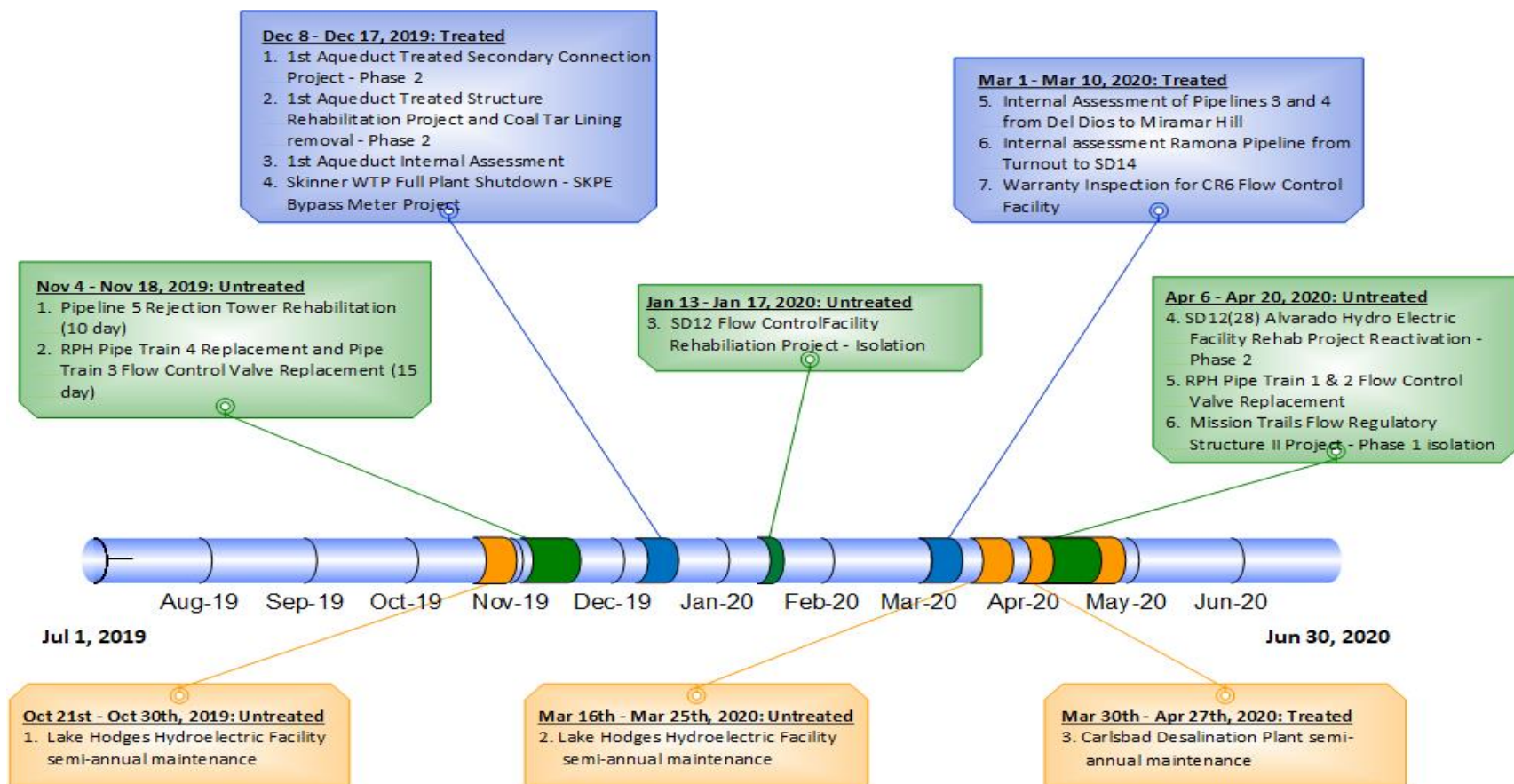


Figure 7 - Water Authority FY 2020 Pipeline Shutdowns and Outages

November 4 th through November 18 th , 2019 - Untreated Water	
Description	This shutdown consists of two parts. Part 1 will be a 10-day full untreated shutdown of Pipelines 3 and 5 from Point of Delivery to Diversion to facilitate isolation of the Rejection Tower. Part 2 will be a 15-day untreated shutdown from Del Dios Valve Vault to Pipeline 3 Terminus, which includes: Pipeline 5 (south of Del Dios Valve Vault), Pipeline 3/4/4A (south of Miramar Hill), San Vicente Pipeline; to facilitate isolation for the valve replacement project at Rancho Peñasquitos Hydro Electric Facility (RPH).
Shutdowns	1. Pipeline 5 Rejection Tower Rehabilitation Project (10-day) 2. Rancho Peñasquitos Hydro Electric Facility (RPH) pipe train #4 replacement and pipe train #3 flow control valve replacement (15-day)
Effects on MWD	All untreated flow from MWD will be terminated for the first 10 days of the shutdown up to 780 cfs.
Member Agency Connections Affected	The following connections will be out of service and unavailable for 10 days during Part1: shutdown – OCS3, OCS5, Twin Oaks Treatment Plant, OLIV9, OLIV10, SDSF4, SDSF5, ESC4, ESC3, SD9, POW3, RAM1, POW1, POW4, SD1, SD2, SD Weir, HLX1, HLX8. The following connections will be out of service and unavailable for 15 days during Part 2: HLX6, HLX7, SD5A, SD5B, SD5C, SD12, NCSB1, NCSB3, SD7, SD20, SD6A, SD6B.

December 8 th through December 17 th , 2019 – Treated Water	
Description	A 10-day full treated shutdown of the 1 st Aqueduct and 2 nd Aqueduct north of the County Line. During this shutdown the Skinner Water Treatment Plant will be offline.
Shutdowns	1. 1 st Aqueduct treated secondary connection project – Phase 2 2. 1 st Aqueduct treated structure rehabilitation project and coal tar lining removal – Phase 2 3. 1 st Aqueduct internal assessment – Phase 2 4. SKPE Bypass Meter project – Skinner WTP
Effects on MWD	Full treated shutdown from MWD. **Alternating sections of Pipeline 1 and 2 will be isolated and unavailable for service reducing the capacity from 180 cfs to 90 cfs.
Member Agency Connections Affected	The following connections will be affected by this shutdown: 1 st Aqueduct- FB1, RB1, RB10, VC3, YWD1, YWD2, VC1A, VC1B, VC5, VC6, VC2, VID1, VAL2, RIN1, RIN3; 2 nd Aqueduct – DLZ1, RB9, FB6, RB8. ** Twin Oaks TP and Desal will be available to keep all connections south of County Line on the 2 nd Aqueduct in service during this shutdown**

January 13 th through January 17 th , 2020 - Untreated Water	
Description	A 5-day untreated shutdown of Pipelines 3 & 4, at the SD 5 TOV facility to allow access to the FBS in Mission Trails to install a blind flange. The blind flange and PPL 4 Inline valve will provide isolation for Pipeline 4 for the SD 12 rehab project.
Shutdowns	3. SD12 Flow Control Facility Rehabilitation Project
Effects on MWD	Potential reduction in untreated flow demand from MWD.
Member Agency Connections Affected	The following connections will be out of service and unavailable during this shutdown – SD12, NCSB1, NCSB3, SD7, SD20, SD6A, SD6B. ***SD12 will remain out of service until April 21 st , 2020***

March 1 st through March 10 th , 2020 – Treated Water	
Description	A 10-day treated water shutdown of Pipeline 4 from MWD Point of Delivery to Diversion. Pipelines 3 and 4 from Diversion to Miramar Hill will be out of service. Twin Oaks TP and Desal TP will be out of service for the full 10-day shutdown.
Shutdowns	5. Internal assessment of Pipelines 3 and 4 from Del Dios to Miramar Hill 6. Internal assessment of Ramona Pipeline from TO to SD14 7. Warranty inspection of CR6 flow control facility
Effects on MWD	All treated flow on Pipeline 4 will be terminated at point of delivery. Twin Oaks and Desal plant will be offline.
Member Agency Connections Affected	The following connections will be out of service and unavailable during this shutdown – DLZ1, RB9, FB6, RB8, RB7, FB4, RB6, VC8, RB3, RB11, NCDP1, VAL10, VID3, VAL9, VID8, VID9, VID10, CR3, CR4, OCS4, CR6, VAL7, OLIV1, OLIV3, OTP1, SDSF3, OLIV2, Ramona Pipeline – OLIV5, SD14, SD15, RAM3, SD10. ** With assistance from the City of San Diego, Miramar Pump Station will be available during the shutdown with limited flow (60 cfs) for, SD11, PD4, SD18, SD21, HLX5, OTAY11, SD19, NCSB4, OTAY10, OTAY12, OTAY13, OTAY13SR. Also, with assistance from Oceanside Treatment Plant, the following connections will have limited flow available during the shutdown – VAL8, OCS6, and VID11.

April 6 th through April 20 th , 2020 - Untreated Water	
Description	A 10-day untreated shutdown of Pipeline 5, 3/4/4A, from Del Dios Valve Vault to Terminus on Pipeline 4 (SD12 Flow Control Facility) and Pipeline 3 (SD 6A/B). Untreated pipelines south of Del Dios Valve vault will be taken out of service to allow for the installation of new plunger valves in Rancho Penasquitos Hydro. Pipeline 4 will be drained to allow access to the FBS in Mission Trails to remove the blind flange to return PPL 4 and the new SD 28 connection back to service. Pipeline 3 south of the Flow Balancing Structure will have a bulkhead installed so construction can begin for the new Mission Trails FRS II. Pipeline 3 will be taken out of service until May of 2021. The Lake Murray by-pass will be put back in service to provide water to Pipeline 3 at a max capacity of 80 cfs.
Shutdowns	4. SD12 Rehabilitation Project reactivation - phase 2 5. RPH pipe train #1 and #2 flow control valve replacement 6. Mission Trails Flow Regulatory Structure II Project – Phase 1 Isolation
Effects on MWD	Reduction in untreated flow demands from MWD.
Member Agency Connections Affected	The following connections will be out of service and unavailable during this shutdown – SDSF 4, SDSF 5, HLX 6, HLX 7, SD5A, SD5B, SD5C, SD12, NCSB1, NCSB3, SD7, SD20, SD6A, SD6B.

October 21 st through October 30 th , 2019 – Untreated Water	
Description	A 10-day outage of Lake Hodges Hydroelectric Facility for semi-annual maintenance.
Outage	1. Lake Hodges Hydroelectric Facility semi-annual maintenance
Effects on MWD	None
Member Agency Connections Affected	None

March 16 th through 25 th , 2020 – Untreated Water	
Description	A 10-day outage of Lake Hodges Hydroelectric Facility for semi-annual maintenance.
Outage	2. Lake Hodges Hydroelectric Facility semi-annual maintenance
Effects on MWD	None
Member Agency Connections Affected	None

March 30 th through April 27 th , 2020 – Treated Water	
Description	A 4-week treated outage of Carlsbad Desalination Plant for semi-annual maintenance and capital improvements
Outage	3. Carlsbad Desalination Plant semi-annual maintenance
Effects on MWD	Potential increase in treated flow demands due to Desalination Plant being offline.
Member Agency Connections Affected	The following connection will be affected by this shutdown: Desalination Conveyance Pipeline – VAL9 will not be able to receive desalinated water during shutdown.

Member Agency Shutdowns

To optimize the delivery, treatment, and storage of water in San Diego County, a request was sent to the Member Agency Operating Heads to obtain schedules for member agency treatment plant expansions, CIP tie-ins, scheduled treatment plant maintenance, and shutdowns. The goal of this request is to facilitate the production of one schedule that the member agencies can use to schedule their work at times that will have the least impact on the region. Responses from member agencies confirmed upcoming maintenance activities including those shown in Figure 8. Several other maintenance projects were also identified, but they either lacked firm schedules or did not have a significant operational impact to the region. These types of projects, as well as Treatment Plant Shutdown coordination, will be carried throughout the year as standing discussion items at the regularly scheduled Operating Head meetings.

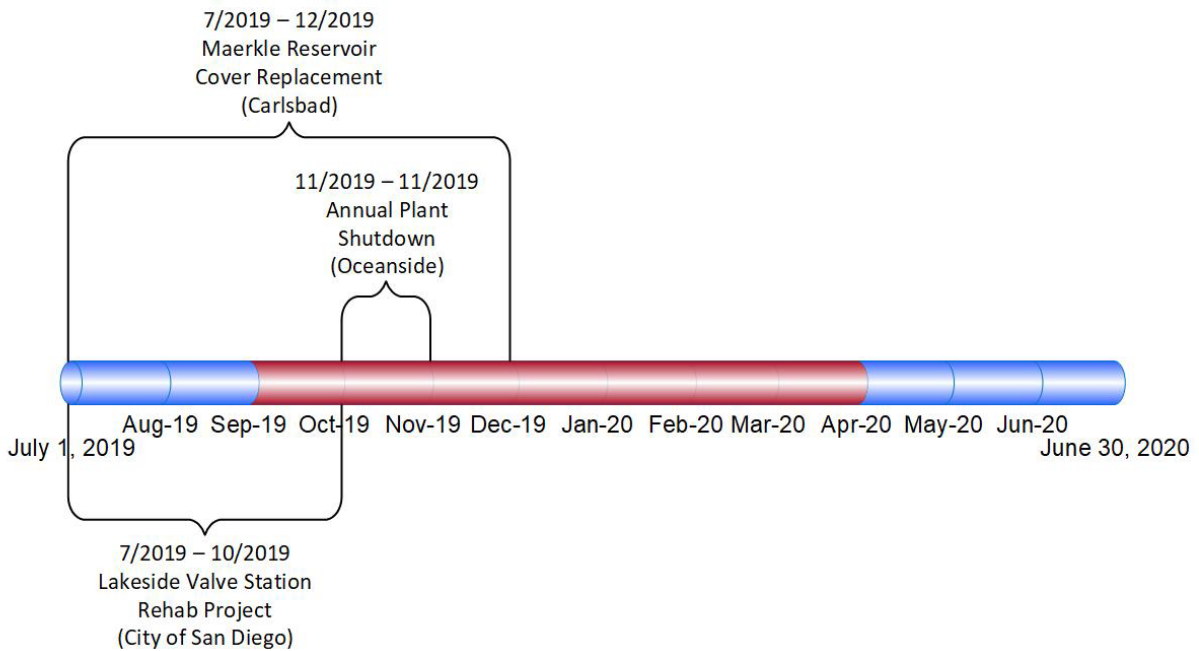


Figure 8 - Scheduled Member Agency Maintenance Coordination

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Water Authority Aqueduct Energy Production/Consumption

The Water Authority will have two power generation facilities operating during fiscal year 2020. The Water Authority will continue operation of the Rancho Peñasquitos Hydroelectric Facility and the Lake Hodges Pumped Storage Facility. The Water Authority will be operating six pump stations and Jacobs/OMI will be operating the Twin Oaks Valley Water Treatment Plant in fiscal year 2020. Aqueduct operations also include over 100 small stations that consume energy. The following is a list of the larger facilities along with their anticipated operation schedules and costs:

➤ **Rancho Peñasquitos Pressure Control and Hydroelectric Facility**

- Projected months of operation: July 2019 to June 2020
- Power generating capacity: 4.5 megawatts
- Estimated Power: 11,000 megawatt (MW) hours
- Estimated Revenue: \$750,000
- Projected power consumption cost per month: \$1,900
- Total operational power consumption cost per year: \$23,000

➤ **Lake Hodges Pumped Storage Facility**

- Projected months of operation: As dispatched by SDG&E
- Power generating capacity: 20 megawatts (single turbine operation), 40 megawatts (two turbine operation)
- Estimated Power: On call, based on SDG&E demands
- Estimated Revenue (for availability): \$2,800,000
- Projected auxiliary power consumption cost per month: \$21,000
- Projected pump cost per year: \$0
- Total operational power consumption cost per year: \$255,000

➤ **Olivenhain Pump Station**

- Projected months of operation: None (only planned to be operated for quarterly maintenance)
- Pumps (three available): One pump operation
- Projected base facility operational power cost per month: \$5,000
- Projected pump cost per year: \$0 (runs on generators only)
- Total operational power consumption cost per year: \$60,000

➤ **Escondido Pump Station**

- Projected months of operation: July 2019 through June 2020
- Pumps: One to two pump operation
- Projected base facility operational power cost per month: \$200
- Projected pump cost per month: \$762
- Projected pump cost for the year: \$3,000
- Total operational power consumption cost per year: \$5,400

- **Pipeline 2A Pump Station**
 - Projected months of operation: July 2019 through June 2020
 - Pumps: One to three pump operation
 - Projected base facility operational cost per month: \$300
 - Projected pump cost per month: \$27,000
 - Projected pump cost for the year: \$324,000
 - Total operational power consumption cost per year: \$327,000

- **Miramar Pump Station** (paid by the City of San Diego)
 - Projected months of operation: November 2019 through June 2020
 - Pumps: One to three pump operation
 - Projected base facility operational cost per month: \$660
 - Projected Water Authority pump cost per month: \$0
 - Projected Water Authority pump cost for the year: \$0
 - Total operational power consumption cost per year: \$24,000

- **San Vicente Pump Station**
 - Projected months of operation: None (only planned to be operated for quarterly maintenance)
 - Pumps: One to two pump operation (three available)
 - Projected base facility operational cost per month: \$9,300
 - Projected quarterly pump test cost for FY 2019: \$13,300
 - Total operational power consumption cost per year: \$165,000

- **Twin Oaks Valley Pump Station**
 - Projected months of operation: None (only planned to be operated for quarterly maintenance)
 - Projected base facility operational cost per month: \$0 (included in Twin Oaks Valley Water Treatment Plant costs)
 - Projected pump test cost for FY 2020: \$0 (runs on generators only)
 - Projected pump cost for the year: \$0
 - Total operational power consumption cost per year: \$0

- **Twin Oaks Valley Water Treatment Plant**
 - Projected months of operation: July 2019 to June 2020
 - Projected operational cost per month (average): \$150,000
 - Total power consumption cost per year: \$1,800,000

The total power cost to operate the Lake Hodges Pump Storage Facility, Rancho Peñasquitos Pressure Control and Hydroelectric Facility, the six pump stations, and Twin Oaks Valley Water Treatment Plant is estimated to be \$2,700,000 for fiscal year 2020. The fiscal year 2020 revenue for all Water Authority hydroelectricity generation is estimated to be \$3,550,000.

It is projected that Rancho Peñasquitos Hydroelectric generation will be on-line for most of the year. However, low flows are expected during the SD12 flow control facility rehabilitation project which may impact generation during the winter months. Since the expiration of the power purchase agreement in 2017, an outside scheduling coordinator has been contracted to assist in actively managing power sales and renewable energy credits. This approach has resulted in increased revenues and the facility is expected to produce an estimated \$815,000 in revenue during fiscal year 2019, exceeding projections by over \$500,000.

Figure 9 - Rancho Hydro Revenues vs. Projections FY 2019

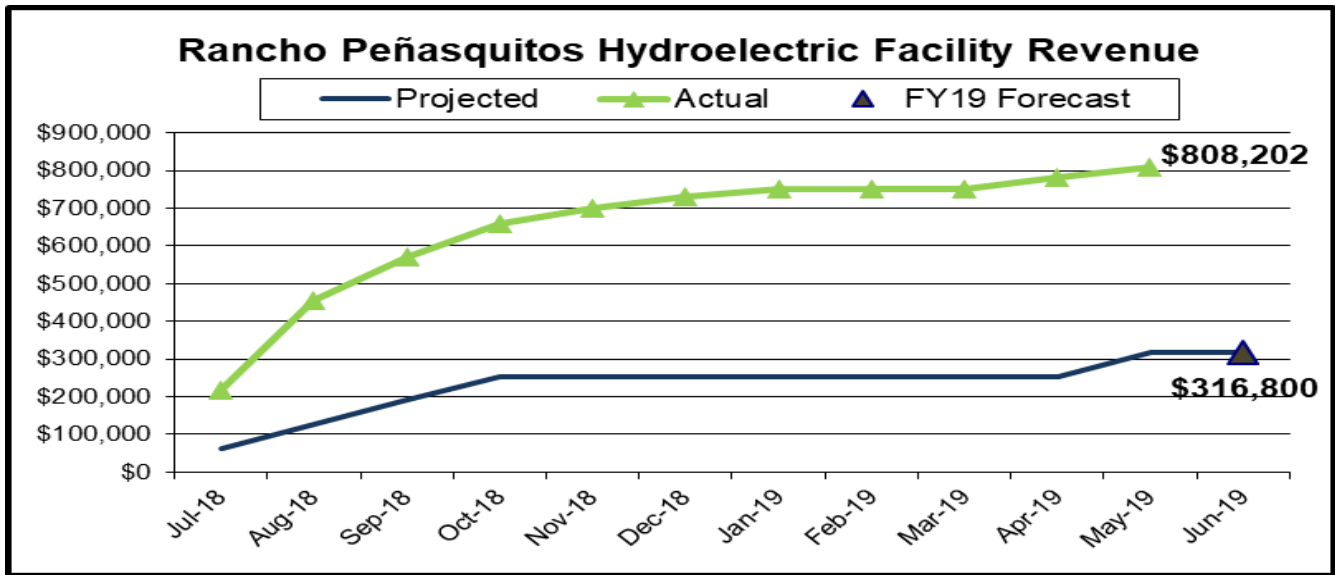


Table 1 - Rancho Hydro Revenues vs. Projections FY 2019

Month	Monthly Goal (MWh)	Revenue			Comments
		Monthly Revenue	YTD Cumulative Revenue	Goal	
Jul	1,584	\$ 216,153	\$216,153	68%	Winter Outage Starts 11/2/19 Outage Ends 4/9/19
Aug	1,584	\$ 237,470	\$453,623	142%	
Sep	1,584	\$ 116,010	\$569,633	178%	
Oct	1,584	\$ 89,248	\$658,881	206%	
Nov	0	\$ 39,698	\$698,579	218%	
Dec	0	\$ 30,907	\$729,486	228%	
Jan	0	\$ 20,120	\$749,607	234%	
Feb	0	\$ -	\$749,607	234%	
Mar	0	\$ -	\$749,607	234%	
Apr	0	\$ 34,668	\$784,275	245%	
May	1,584	\$ 25,395	\$808,202	317%	
Jun	0				

The Lake Hodges Pump Storage Facility has operated as planned and is expected to produce more than \$3,000,000 in revenues by the end of fiscal year 2019 and exceed its revenue goal of \$2,800,000 (see Figure 10). This is due in part to O&M’s first full year of operation which produced a higher level of facility availability than historically when operated by an outside company.

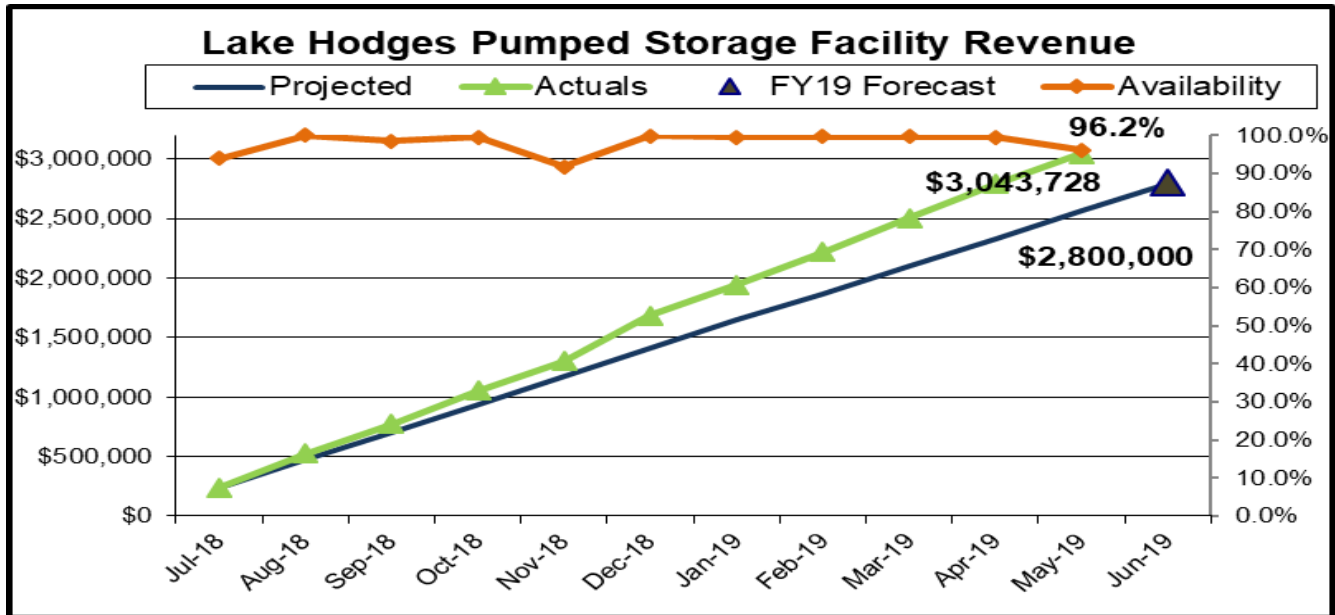


Figure 10 - Annual Revenue Generated at Lake Hodges Pump Storage Facility

Solar Generation

In October of 2010, a Solar Power and Services Agreement was signed between the Water Authority and Borrego Solar Systems Incorporated (Borrego) which allowed Borrego to install solar systems at the Kearny Mesa Headquarters, Escondido Operations Center, and the Twin Oaks Valley Water Treatment Plant. The Water Authority purchases the power generated at these sites at rates lower than the projected utility rate. The systems are owned, financed, and maintained by Borrego so that there are no expenses to the Water Authority other than the staff time required to monitor the agreements. Following is a list of the three solar facilities along with their anticipated operation schedules, and estimated savings to the Water Authority based on Borrego’s contract:

- **Escondido Operations Center**
 - Projected Months of Operation: July 2019 to June 2020
 - Estimated Generation: 244,000 kWh
 - Estimated Savings: \$8,000
- **Twin Oaks Valley Water Treatment Plant**
 - Projected Months of Operation: July 2019 to June 2020
 - Estimated Generation: 1,755,000 kWh
 - Estimated Savings: \$109,000
- **Kearny Mesa Headquarters**
 - Projected Months of Operation: July 2019 to June 2020
 - Estimated Generation: 644,000 kWh
 - Estimated Savings: \$39,000

Reservoirs and Storage Opportunities

Member agency and Water Authority reservoirs serve multiple functions including: surface water capture, seasonal shift water storage, carryover storage, and local sources of emergency water supplies. Member agency and Water Authority reservoirs function as system capacity buffers during peak demand periods and offer a level of security for short and long-term emergency situations. The size and location of each reservoir affects the extent to which it can perform the various functions, as does the individual agencies' operational plan (see Figure 11, Table 2, and Figure 12).

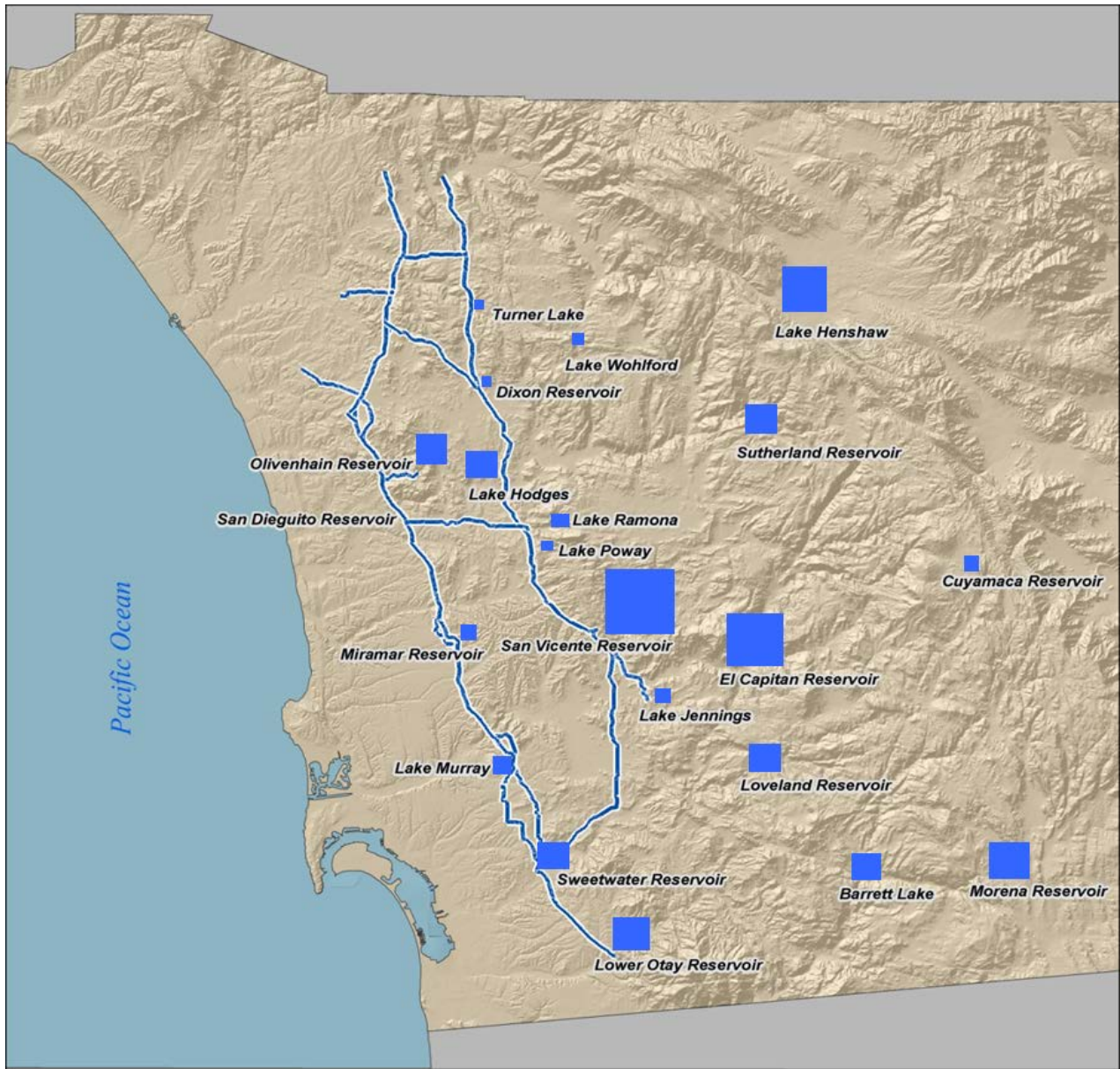


Figure 11 - Location and Relative Capacities of San Diego County Reservoirs

Table 2 - Storage/Capacity in Member Agency and Water Authority Reservoirs (AF)

Reservoir	¹ Total	Usable	Dead (unusable)	Storage as of June 1, 2019				
				Member Agency	Water Authority			Total
					Carryover	ESP	Operational	
Henshaw	51,774	51,768	6	15,837				15,837
Wohlford	6,506	6,156	350	2,278				2,278
Dixon	2,606	2,541	65	2,481				2,481
Sutherland	29,508	29,396	112	6,152				6,152
Hodges	30,632	28,422	1,829	7,498			7,998	15,496
San Dieguito	883	717	166	699				699
San Vicente	249,358	244,130	5,228	71,865	86,924	27,710	16,689	203,188
El Capitan	112,807	109,992	2,815	46,374				46,374
Murray	4,684	4,292	392	4,090				4,090
Cuyamaca	8,195	8,195		903				903
Jennings	9,790	9,790		8,852				8,852
Loveland	25,400	25,225	175	11,864				11,864
Sweetwater	28,079	27,179	900	14,051				14,051
Morena	50,694	50,020	674	5,311				5,311
Barrett	34,806	34,207	599	17,596				17,596
Lower Otay	49,849	46,026	3,823	38,659				38,659
Miramar	6,682	5,774	908	5,493				5,493
Poway	3,330	2,560	770	2,803				2,803
Ramona	12,000	11,800	200	2,810				2,810
Turner	1,612	1,552	60	1,612				1,612
Olivenhain	24,774	24,731	43	0		18,000	3,164	21,164
Totals	743,969	724,473	19,115	267,228	86,924	45,710	27,851	427,713

Notes:

- Capacity information: JMM Consulting Engineers, Inc. (1990), *San Diego County Water Authority Optimal Storage Study: Reservoir Summary Report*, unless updated by Member Agency staff.

In addition to meeting local storage and operational demands, Olivenhain, San Vicente, and Hodges reservoirs play a significant role in the Water Authority's Emergency & Carryover Storage Program (E&CSP), in response to regional emergency and drought situations related to water supply availability.

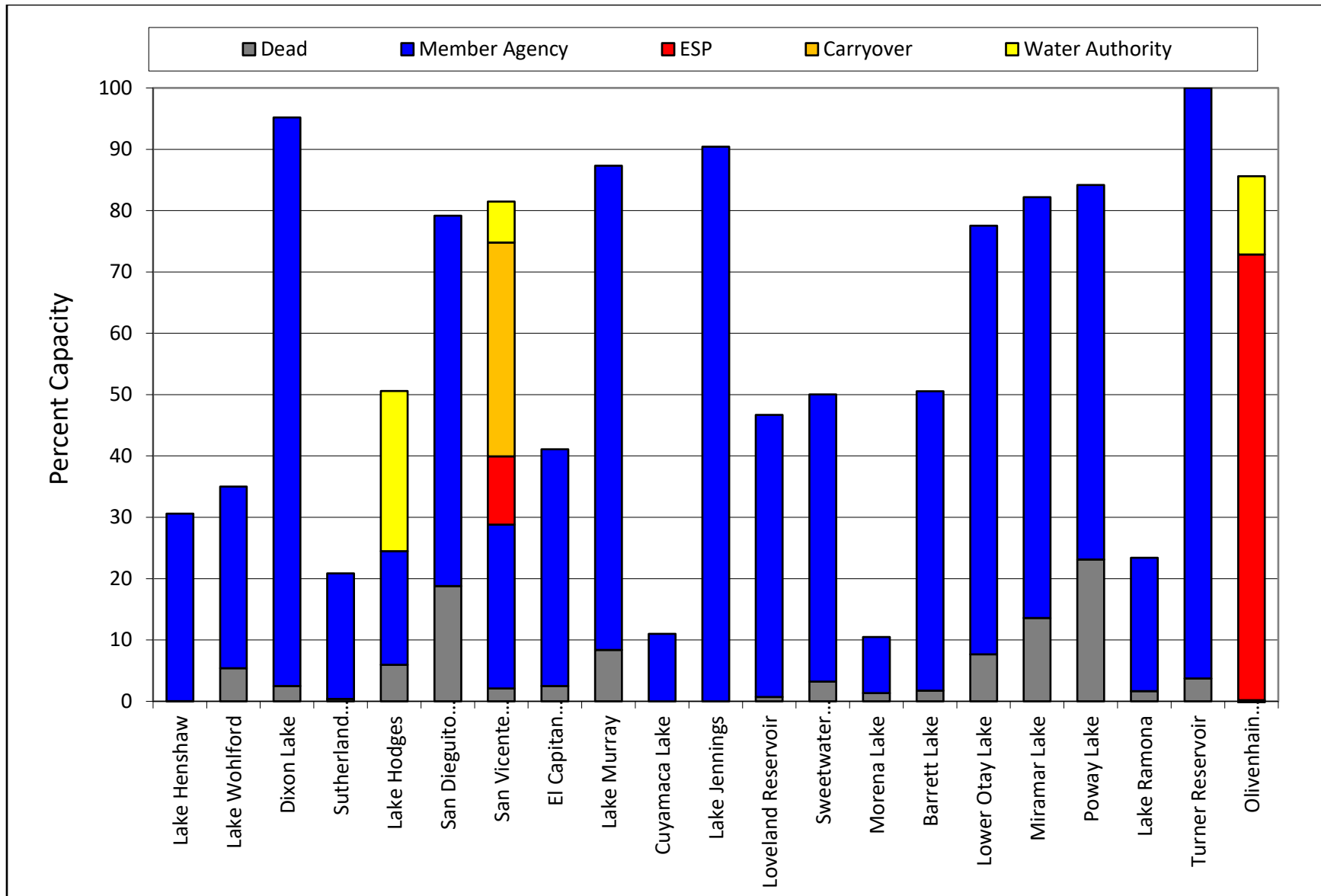


Figure 12- Regional Reservoir Levels (% of Capacity) as of June 1, 2019
 (This figure represents the Water Authority Carryover Storage and Regional ESP Storage)

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Asset Management and Major Maintenance Activities

In addition to ongoing corrective maintenance that is undertaken in response to specific needs or events, the O&M Department is also engaged in a rigorous program of predictive and preventative maintenance that ensures optimal condition/performance of Water Authority property, right-of-way, infrastructure and assets throughout their life cycles. These maintenance activities can include inspection, testing, calibration, brush management, operation, lubrication, and parts replacement/rehabilitation/upkeep. In addition to routine maintenance work, the O&M Department undertakes additional Asset Management projects and “major” projects that fall outside the scope of routine maintenance. Some of the activities undertaken during fiscal year 2019 included:

- First full year of operation and maintenance functions of the Lake Hodges Hydroelectric Pumped Storage Facility, including 3-week major annual scheduled maintenance shutdown
- Completed installation of new Sipos electric valve actuators as part of the Flow Control Facility Electric Actuator Replacement CIP Project
- Decommissioned Valley Center 4 Flow Control Facilities
- Repurposed Helix 2 Flow Control Facility into Helix 8 Turnout Structure
- Replaced Vallecitos 2 Flow Control Facility outlet piping
- Repaired and encased two joints on the La Mesa Sweetwater Extension Pipeline
- Replaced San Vicente Pump Station’s main electrical transformer
- Completed visual inspection of Pipeline 4 relining project and Olivenhain Pipeline
- Phase 1 of Pipeline 1 and 2 comprehensive non-destructive condition assessment commenced



Figure 13 – La Mesa Sweetwater Extension Pipeline Repair and Pipeline 1/2 Condition Assessment with Acoustic Leak Detection

The Asset Management and major maintenance activities planned by the O&M Department for fiscal year 2020 include:

- Continue comprehensive non-destructive condition assessment of Pipeline 1 and 2 (1st Aqueduct)
- Install permanent chlorine boosting system at Mission Trails Flow Regulatory Structure
- Enhance online water quality monitoring on treated water pipelines with the installation of four new analyzers
- Develop a major maintenance and replacement plan for major mechanical and electrical components of the Lake Hodges Hydroelectric Pump Storage Facility
- Replacement of two ultrasonic flow meters
- Replacement of emergency stand-by generators at the Escondido Operations Facility
- Perform access road improvements at Santa Luz, Carmel Valley, Miramar Vents, San Diego 10 Flow Control Facility, and Camp Elliott road sections
- Demolition of Poway 2 and Escondido 2 Flow Control Facilities



Figure 14 – Mission Trails Flow Regulatory Structure Electrical PM