



Los Angeles Aqueduct **Briefing Book**

Water Operations Division | Aqueduct Section



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LIST OF ACRONYMS AND ABBREVIATIONS

AF	acre-feet	ICWD	Inyo County Water Department
AFY	acre-feet per year	LAA	Los Angeles Aqueduct
Agreement	Inyo/Los Angeles Long-Term Water Agreement	LAAFP	Los Angeles Aqueduct Filtration Plant
AMSL	Above Mean Sea Level	LADWP	Los Angeles Department of Water and Power
AOP	Annual Operations Plan	LORP	Lower Owens River Project
ASR	Aquifer Storage and Recovery	MBOP	Mono Basin Operations Plan
BACM	Best Available Control Method	MGD	million-gallons-per-day
BLM	Bureau of Land Management	MOA	Memorandum of Agreement
Brine BACM	Brine with BACM Backup	MOU	Memorandum of Understanding
CDFW	California Department of Fish and Wildlife	NAAQS	National Ambient Air Quality Standard
CDWR	California Department of Water Resources	NHD	North Haiwee Dam
CEQA	California Environmental Quality Act	NHD2	North Haiwee Dam No. 2
cfs	cubic-feet-per-second	NDHSIP	North Haiwee Dam Seismic Improvement Project
City	City of Los Angeles	NHR	North Haiwee Reservoir
CSD	Community Service District	OLDMP	Owens Lake Dust Mitigation Program
CSLC	California State Land Commission	OLGDP	Owens Lake Groundwater Development Program
CDFW	California Department of Fish and Wildlife	OLGEP	Owens Lake Groundwater Evaluation Project
CDWR	California Department of Water Resources	OLSAP	Owens Lake Scientific Advisory Panel
DRP	Drought Recovery Policy	OVGA	Owens Valley Groundwater Authority
DSOD	Division of Safety of Dams	OVGB	Owens Valley Groundwater Basin
DWM	Dynamic Water Management	Policy	Owens Valley Tribal Engagement Policy
EIR	Environmental Impact Report	RPP	Resources Protection Protocol
ESE	Eastern Sierra Environmental Group	RY	Runoff Year
EPA	Environmental Protection Agency	SB-88	Senate Bill 88
FRP	Fiberglass reinforced plastic	SCADA	Supervisory Control Data Acquisition
Green Book	Inyo/Los Angeles Long-Term Agreement Technical Appendix	SCE	Southern California Edison
GLR	Grant Lake Reservoir	SWRCB	State Water Resources Control Board
GSP	Groundwater Sustainability Plan	TDS	Total Dissolved Solids
GSA	Groundwater Sustainability Agency	TM	Technical Memorandum
HMMMP	Hydrologic Monitoring, Management, and Mitigation Plan	TWB2	Tillage with BACM Backup
		UWCD	United Water Conservation District



water supply facilities in the Eastern Sierra, including the First and Second LAAs, several reservoirs, and hundreds of miles of canals and ditches. The Water Operations Division's Northern District has more than 300 employees, who work and live in Kern, Inyo and Mono Counties, to operate and maintain its facilities. The Water System has an administrative office in Bishop and construction yards in Bishop, Independence, and Keeler. There is also a construction yard in Mojave to maintain the southern portion of the LAA that passes through Kern and Los Angeles Counties.

LADWP, on behalf of the City, owns and maintains more than 314,000 acres of land in the Eastern Sierra and protects the City's watershed. Much of the land is leased out for a wide variety of activities ranging from ranching and grazing, to campgrounds and golf courses, and from local businesses to individual houses. In addition to its engineering, construction, operations, and maintenance forces, Water System's interests in the Eastern Sierra are also attended-to by a Real Estate Section based in Bishop to administer leases and to handle other land use activities in Inyo and Mono Counties. A Watershed Resources Section, also in the Bishop office, is staffed with biologists, botanists, a soil scientist, and other technical and administrative personnel that monitor Eastern Sierra watershed ecosystems.

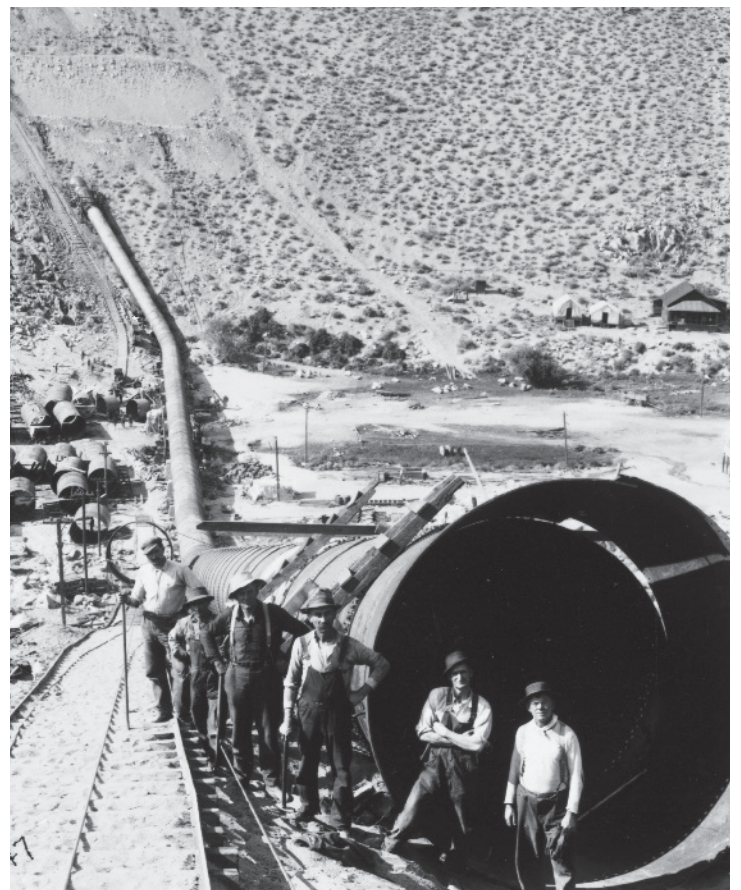
Following is the development of the current issues facing the LADWP in the Owens Valley.

HISTORICAL BACKGROUND

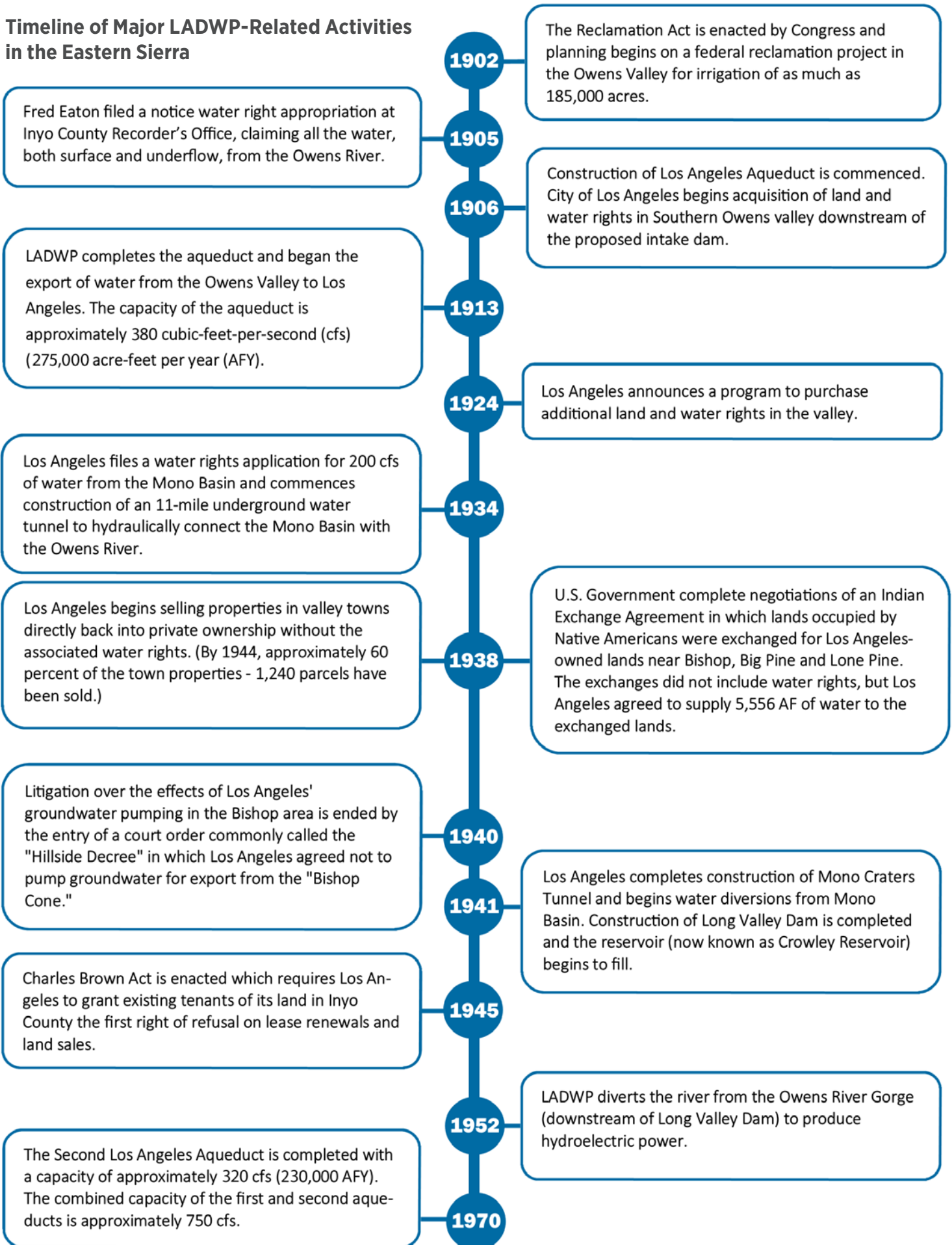
Overview

For over 100 years, the Los Angeles Department of Water and Power (LADWP) has had a significant presence in the Owens Valley. Since the early 1900s, when the City of Los Angeles (City) began purchasing land in the Owens Valley to secure water rights, the City has been the single largest landholder on the valley floor. Since construction of the First Los Angeles Aqueduct (LAA) in 1913, the majority of the City's water supply has come from the Owens Valley. In 1970, the Second Los Angeles Aqueduct was completed, increasing the amount of water that can be delivered to Los Angeles from the Eastern Sierra region by sixty percent.

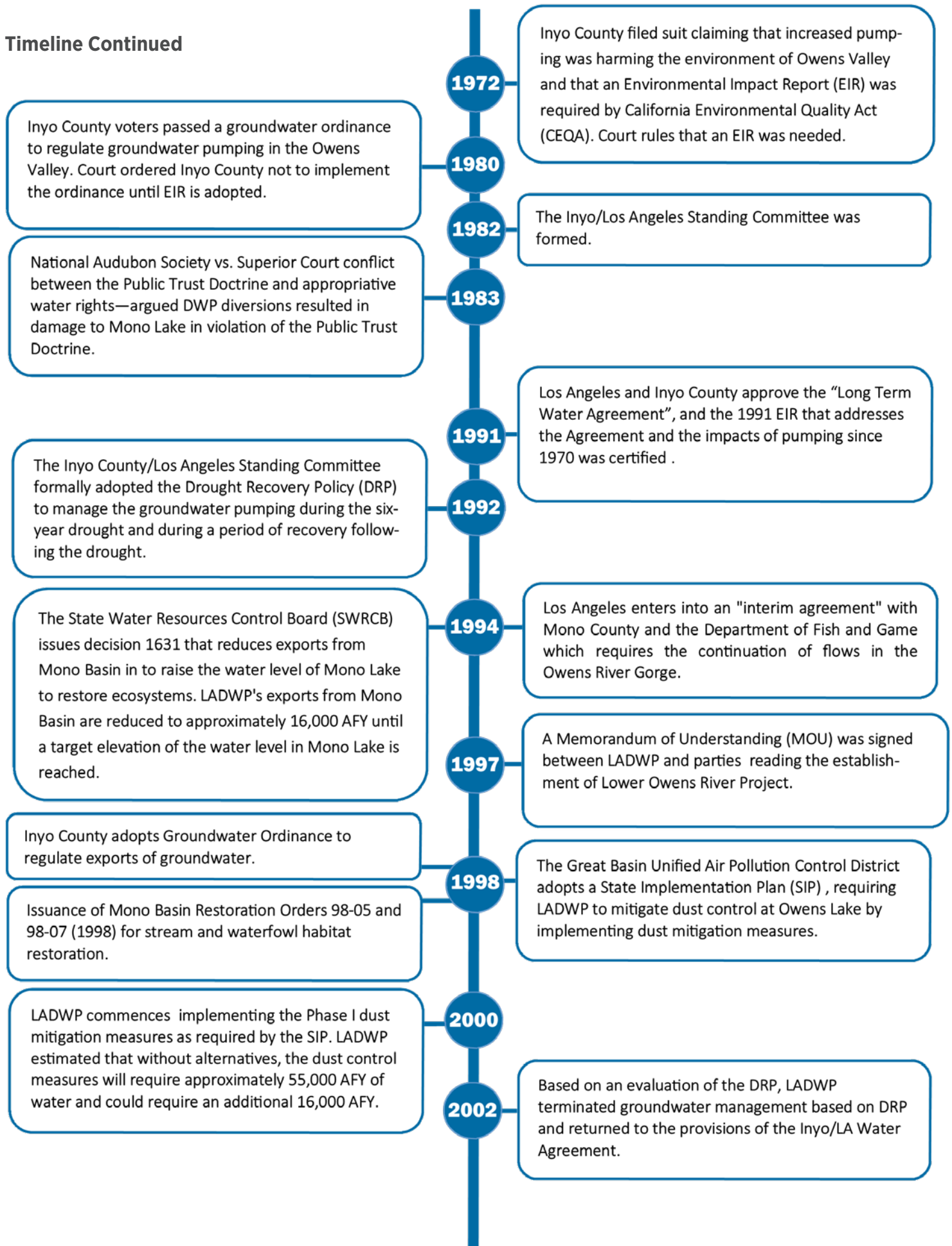
The Water System operates and maintains a number of



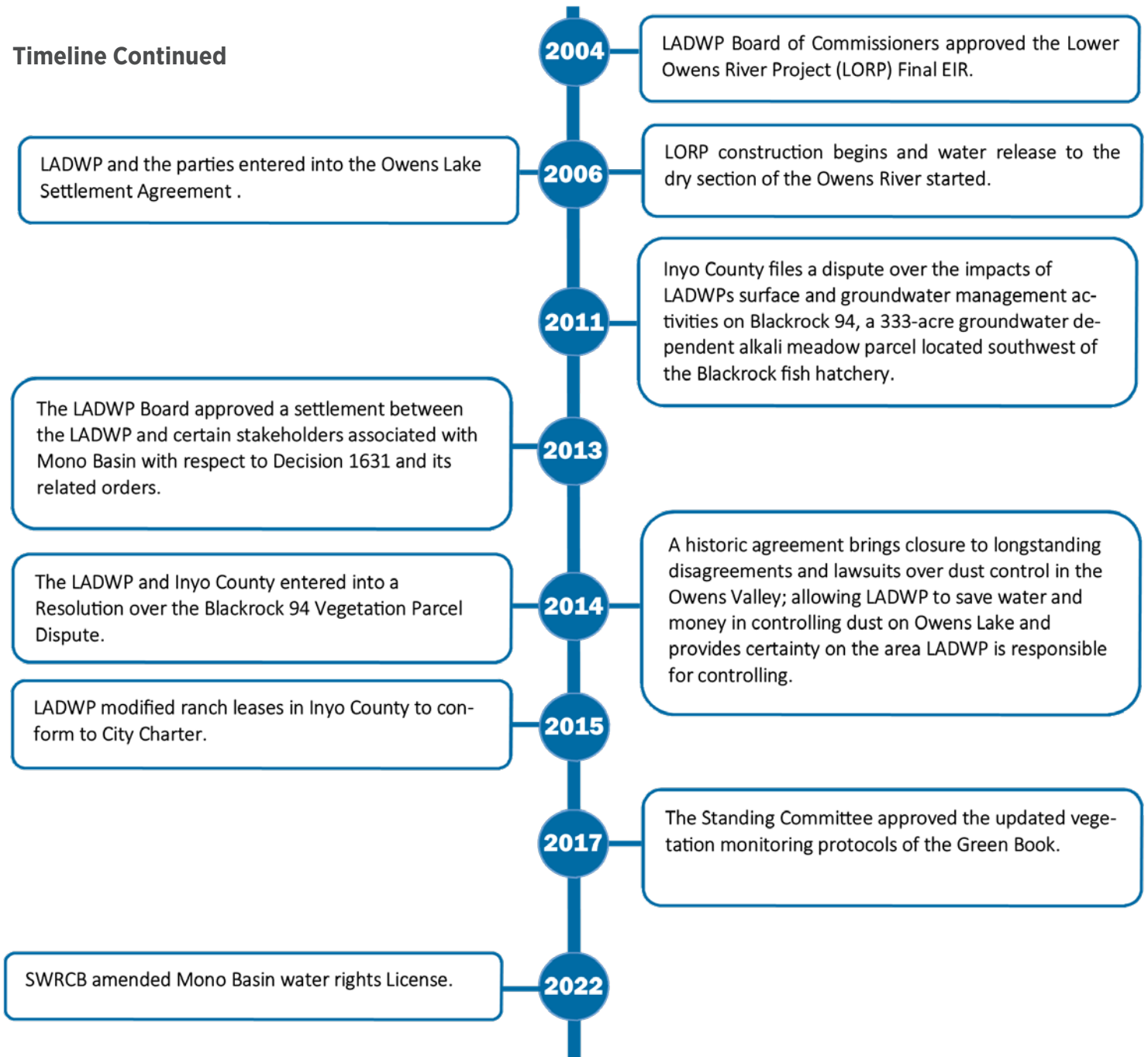
Timeline of Major LADWP-Related Activities in the Eastern Sierra

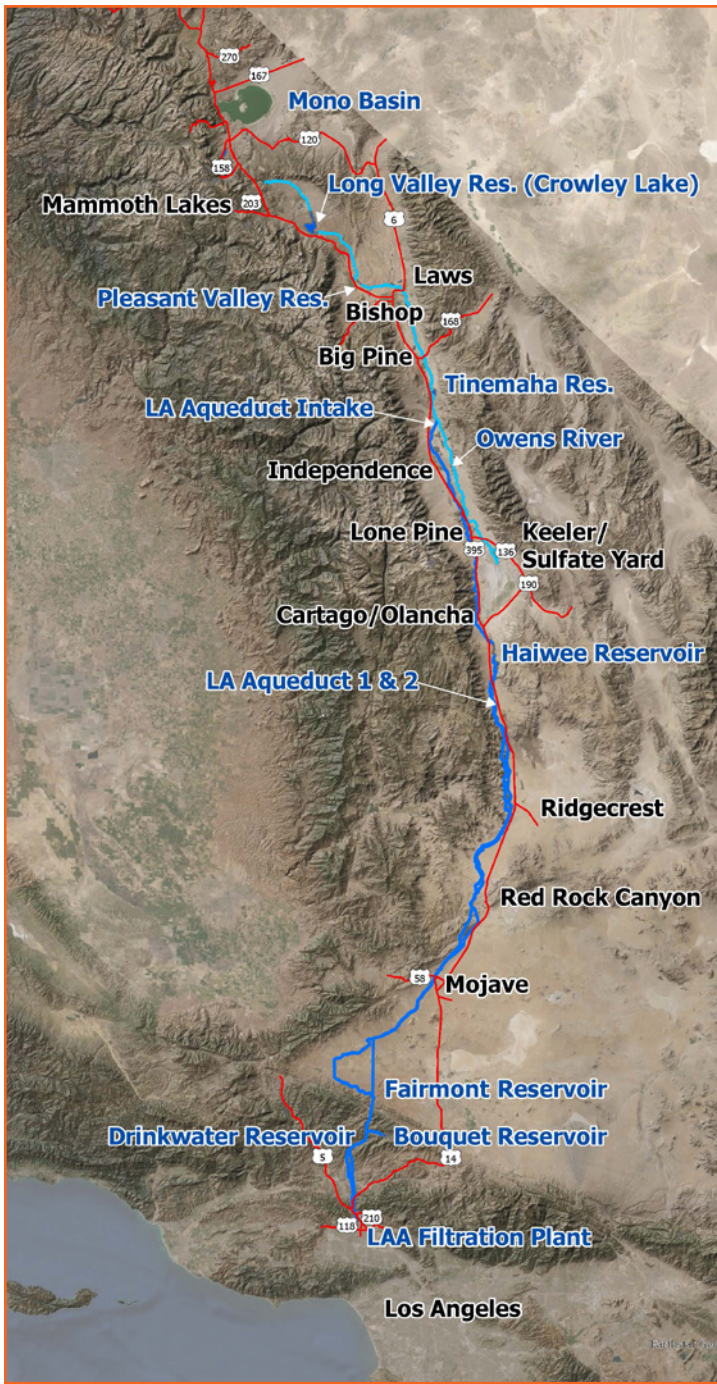


Timeline Continued



Timeline Continued





AQUEDUCT OPERATIONS & FACILITIES

Infrastructure and Organization

Due to a decision by the State Water Resources Control Board (SWRCB) in 1994 (Decision D1631), LADWP's withdrawals from the Mono Basin have been capped to a maximum of 16,000 AFY since 1997. Previously, about 90,000 AFY was exported from Mono Basin to the Owens River. Deliveries from the LAA to the City have averaged about 300 cfs (200 MGD) in recent years due to the increasing Owens Valley environmental demands of the Owens Lake Dust Mitigation Project, the Lower Owens River Project, and the previously mentioned Decision by the SWRCB.

First Aqueduct

Constructed:	1907-1913
Length:	223 miles
Type:	Open, covered, tunnels, pipelines
Capacity:	380 cfs (275,000 AFY)
Source:	Owens River

Second Aqueduct

Constructed:	1966-1970
Length:	139 miles
Type:	Predominantly pipeline
Capacity:	320 cfs (230,000 AFY)
Source:	Owens River (South Haiwee)

Mono-Craters Tunnel

Constructed:	1934-1941
Length:	11 miles
Type:	Underground tunnel
Capacity:	300 - 420 cfs (217,000-304,000 AFY)
Source:	Five Mono Basin streams

Reservoirs and Hydro-Electric Plants

The LAA System has 9 reservoirs and 9 hydroelectric plants. Three of the reservoirs are principally used for water storage: Long Valley Reservoir (Crowley Lake, 183,000 AF), South Haiwee Reservoir (28,000 AF), and Bouquet Reservoir (32,500 AF). Snowmelt is stored in these reservoirs during spring and delivered to the City in the summer months to offset purchased import from MWD. Bouquet Reservoir is the only reservoir in the LAA System with significant storage south of the San Andreas Fault.

Construction Yards, Patrol Stations, and Employees

The Aqueduct Section has about 350 full-time positions divided into two districts: Northern and Southern Districts. Each District is divided into Construction and Engineering Groups.

Northern District, headquartered in Bishop, has a large administrative staff devoted to such functions as property management, budget management, human resources management, and environmental monitoring and control. The Engineering Group consists



San Francisquito Power Plant No. 1

of hydrography, surveying, and SCADA functions in addition to planning, design, project management, and inspection functions. The Watershed Management Group includes environment specialists and biologists that ensure compliance with federal and state regulations and the terms of Inyo/Los Angeles Water Agreement. The Construction staff of Northern District has Construction Yards in Bishop and Independence, and patrol stations (used to house Aqueduct and Reservoir Keepers) at Cain Ranch (currently unoccupied), Long Valley Dam, Tinemaha Reservoir, Alabama Gates, and North and South Haiwee Reservoirs. Northern District also has a construction yard in Keeler dedicated to operation and maintenance of Owens Lake dust control measures. New housing and staffing is being planned.

Southern District Construction is headquartered in Mojave with a satellite yard at Dry Canyon in the Santa Clarita Valley. Its patrol stations are located at Little Lake, Freeman, Jawbone, Bouquet Reservoir, and Dry Canyon. Southern District Engineering along with the Northern District Operation group is responsible for Aqueduct Operations and water forecasting in addition to planning, design, project management, and inspection functions with staff in Mojave, Dry Canyon, and Los Angeles John Ferraro Building.

Challenges Facing the Aqueduct System

LAA Storage

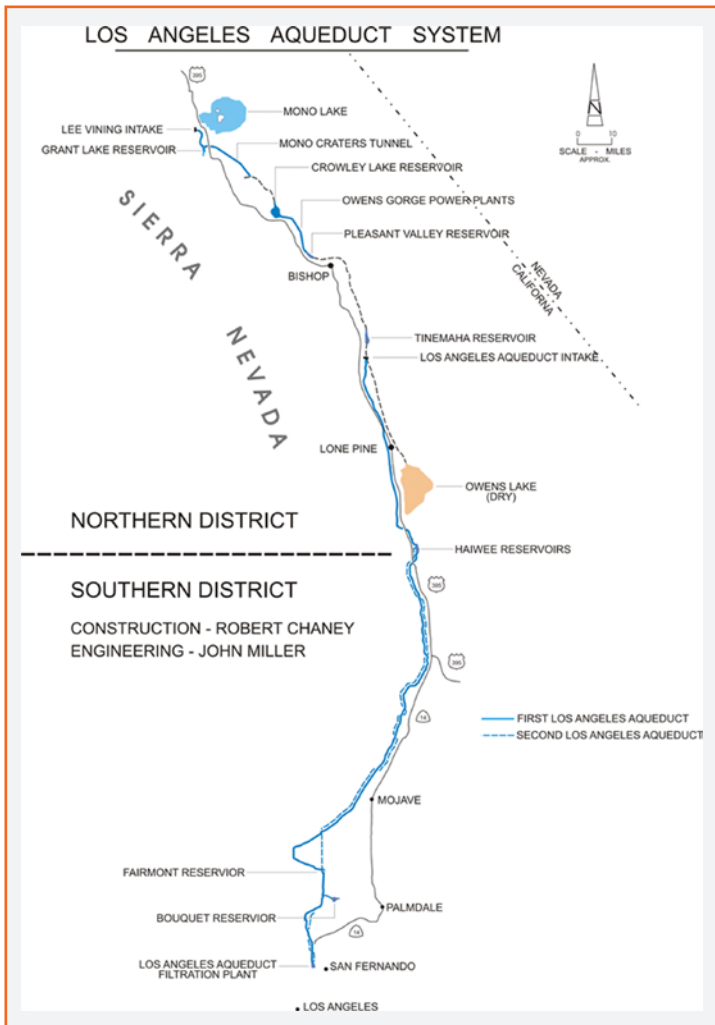
Aqueduct Reservoirs have gradually lost 31,000 AF of storage over the past several decades due to restrictions imposed by the State of California, Department of Water Resources, Division of Safety of Dams (DSOD)

after advanced geotechnical analysis revealed flaws in the dams at Tinemaha, and North and South Haiwee Reservoirs. Capital improvements have been budgeted over the next 15 years for three of these reservoirs while South Haiwee is conceptually planned to be replaced. However, implementation of the retrofit has taken more time than initially planned due to the restrictive environmental requirements. The loss of storage crimps operations, and leads to water losses during years of surplus water supply.

Water Storage Along Los Angeles Aqueduct

In light of the 2017 high runoff year in which approximately 214,000 AF of excess water from the Owens Valley could not be immediately used or stored, the Eastern Sierra Environmental Group (ESE) began investigating water storage opportunities along the LAA in the form of water banking. The options explored included standalone and partnership projects with local agencies in the Rose Valley, Indian Wells, Willow Springs, and Antelope Valley/Kern County areas. Operational methods may consist of direct storage and recovery (“Aquifer Storage and Recovery” or ASR) or a water exchange project, in which banked water is exchanged for future extraction rights.

After consideration of the technical and administrative aspects of the different project options, LADWP is conducting further evaluations of a standalone Rose Valley ASR project with the potential to store 5,000-10,000 AF, Standalone Antelope Valley ASR project with potential 50,000-80,000 AF storage, and a potential partnership with Antelope Valley/East Kern Water Authority with the potential to store 50,000 AF of water.



channel section of the First LAA north of the Haiwee Reservoir Complex) to reduce the loading of suspended solids, arsenic, phosphorus-bearing compounds, and disinfection-byproduct precursors to the LAA Filtration Plant at the LAA terminus in Sylmar. Consequently, the sediment has been accumulating near the inlet of North Haiwee Reservoir creating a berm impeding flow entering North Haiwee Reservoir. Removing this sediment will be a major capital project costing approximately \$100 million. In 2016, the Aqueduct Section relocated a portion of the berm in accordance with regulations, creating a channel through the sediment berm to eliminate the hydraulic restriction without posing any adverse water quality in the reservoir. The sediment relocation was successful and at a low cost.

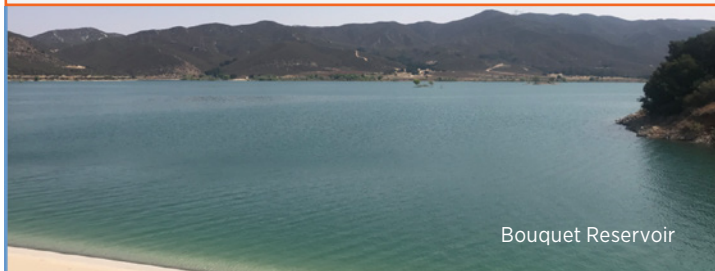
North Haiwee Dam Seismic Improvement Project (NHDSIP)

The North Haiwee Reservoir (NHR) is an integral part of the LAA. A seismic hazards investigation conducted by LADWP determined that the original North Haiwee Dam (NHD) is seismically deficient and may settle up to nine feet during a major seismic event. Failure would be catastrophic for the inundation area around and downstream of NHD and for the City's water supply. As a result, the dam is currently operating at a restricted elevation of 3,757.5 feet above mean sea level (AMSL) (from 3,760 feet), reducing the capacity from 11,533 AF to 9,572 AF, until the NHDSIP is complete.

When the construction is completed, the new North Haiwee Dam No. 2 (NHD2) 1,900 foot long embankment dam 800 feet north of the existing NHD as mandated by DSOD, creating a 25-foot deep basin in-between the old and new dam in order to return NHD to its optimal operating capacity. The three major components of the project are:

- Phase I—Cactus Flats Road Realignment
- Phase II—LAA Realignment
- Phase III—New dam construction

The project team has completed the bidding process and the LADWP Real Estate Group has acquired a Bureau of Land Management (BLM) right-of-way and with Inyo County regarding the Cactus Flats Road realignment right-of-way. The EIR was adopted in July 2018 and the project construction started in September 2021, the planned completion in 2025.



LADWP is currently in the process of acquiring real estate in Antelope Valley to develop an ASR program.

Aging Infrastructure

The First LAA has completed its first century of service. A complex capital program to extend the life of this facility for future generations is being implemented over the next several decades at over \$18 million dollars per year. This capital improvement program is primarily focused on rehabilitation of the covered conduit sections, relining of the open channel section, the rehabilitation of external and internal lining systems on pipes, and replacement of appurtenances such as piers, thrust-blocks, etc.

Arsenic Sediment in North Haiwee Reservoir

In 1995, LADWP began full-time operation of its Cottonwood Treatment Plant (located along the open



Annual Cycle of Activities

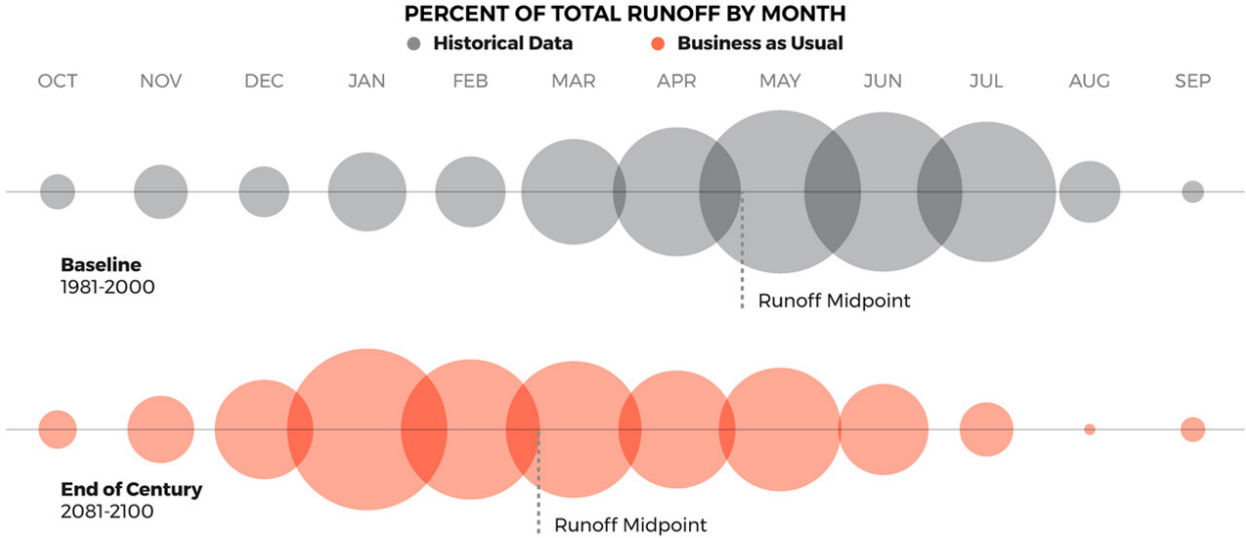
The Capital and Operations and Maintenance programs operate in annual cycles. The benefit of having two aqueducts allows for taking one aqueduct out of service for maintenance and improvements without interrupting the City’s water supply. Maintenance activities are typically performed in the winter months to ensure that sufficient supply is available to meet the high demands of the summer season.

Climate Change Considerations

Water Resources Division has been working with an outside consultant on identifying potential impacts to the LAA System’s hydrology and water supply resulting from climate change. Research conducted by Aqueduct Section indicates that the principal impact will be greater precipitation and more runoff earlier in the year. Based on this initial assessment, the Aqueduct Section anticipates adjusting its operations. However, the evaluation of climate change is still in progress and may indicate additional impacts. The UCLA Center for Climate

Study completed a project which analyzed historic conditions with predicted conditions under the scenario which greenhouse emissions continue on a rising trend, termed “Business as Usual”, first mentioned on page 5 of The UCLA Center of Climate Science Study, Climate Change in the Sierra Nevada. The UCLA Center of Climate Science updated this study, focusing on climate change projections for the Eastern Sierra. The study clearly indicated that the Eastern Sierra will see warmer temperatures and less snow. Additionally, they found several references along with some newer themes:

- Projected increases in extremes of precipitation and aridity (well supported by simulations and physical arguments based on thermodynamics)
- Insight into circulation shifts that could lead to stronger storms in Southern California (remains uncertain)
- Projected intensification of the most extreme atmospheric rivers (quite certain), which produce more rain relative to snow, compared with the historical period



Source: Climate Change in the Sierra Nevada, UCLA Center for Climate Science, April 2018

LONG TERM WATER AGREEMENT

In a lawsuit filed in 1972, Inyo County claimed that increased groundwater pumping to supply the Second Los Angeles Aqueduct was harming the environment of the Owens Valley and that the practice should be analyzed in an EIR in accordance with the provisions of the CEQA. In 1973, the Third District Court of Appeals ruled that LADWP must prepare the EIR. LADWP prepared two EIRs, one in 1976 and another in 1979, but the Appellate Court found both to be inadequate.

In 1980, the Inyo County Board of Supervisors drafted, and the Inyo County voters passed, a groundwater ordinance to regulate groundwater pumping in Inyo County through a groundwater management plan. The City legally challenged Inyo County on the ordinance. In 1983, the Court ruled that the groundwater ordinance was unconstitutional, invalid, and preempted law, and that the implementation of the ordinance should be enjoined.

In 1983, following the Superior Court's decision invalidating the groundwater ordinance, Inyo County and the City began an attempt to develop a groundwater management plan. In 1982, the Standing Committee was formed, consisting of representatives from the governing bodies of Inyo County and the City. In 1984, while working on the groundwater management plan, Inyo County and Los Angeles approved a five-year interim agreement.

In 1989, Inyo County and the City reached a preliminary agreement on a joint groundwater management plan known as the Inyo/Los Angeles Long-Term Water Agreement (Agreement) and accompanying Technical

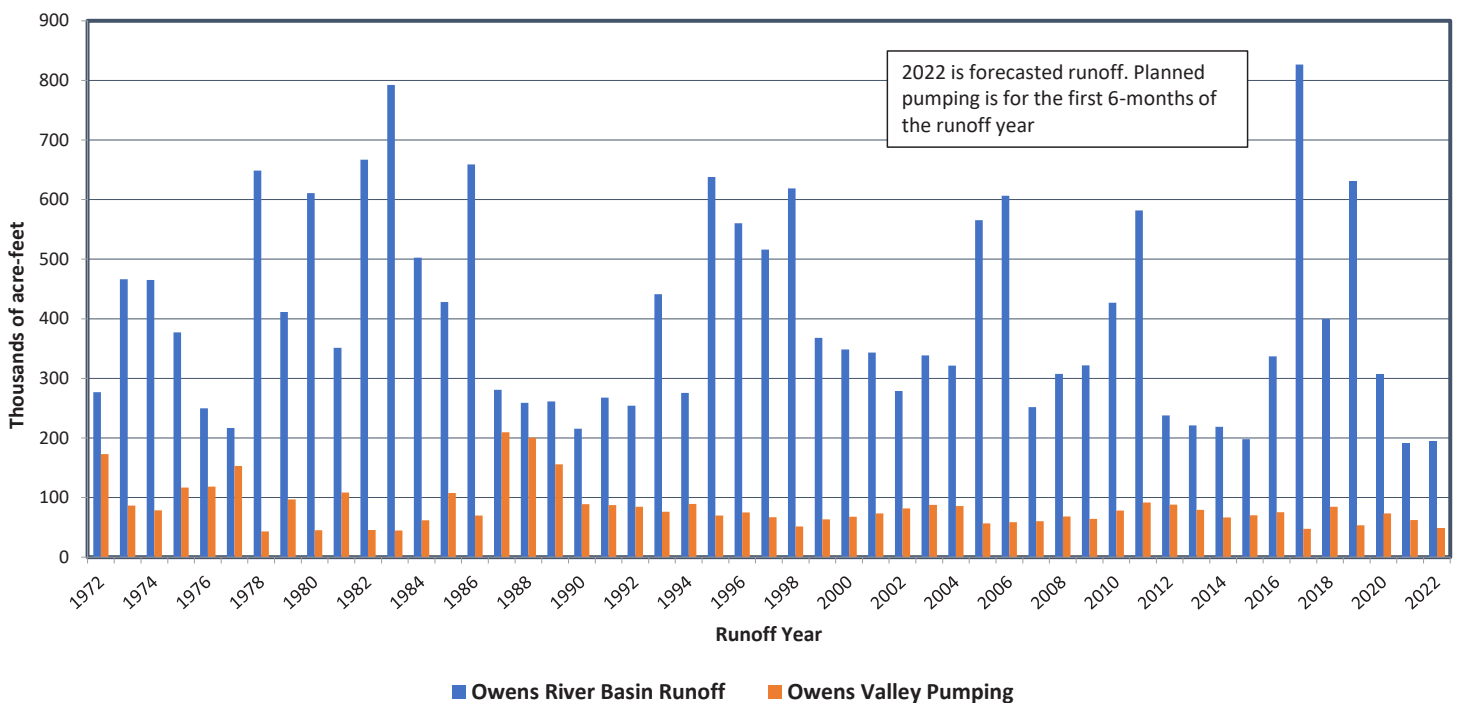
Appendix (Green Book). The Agreement, 1991 EIR, and MOU were accepted by the Court in 1997 and vacated the 1972 lawsuit.

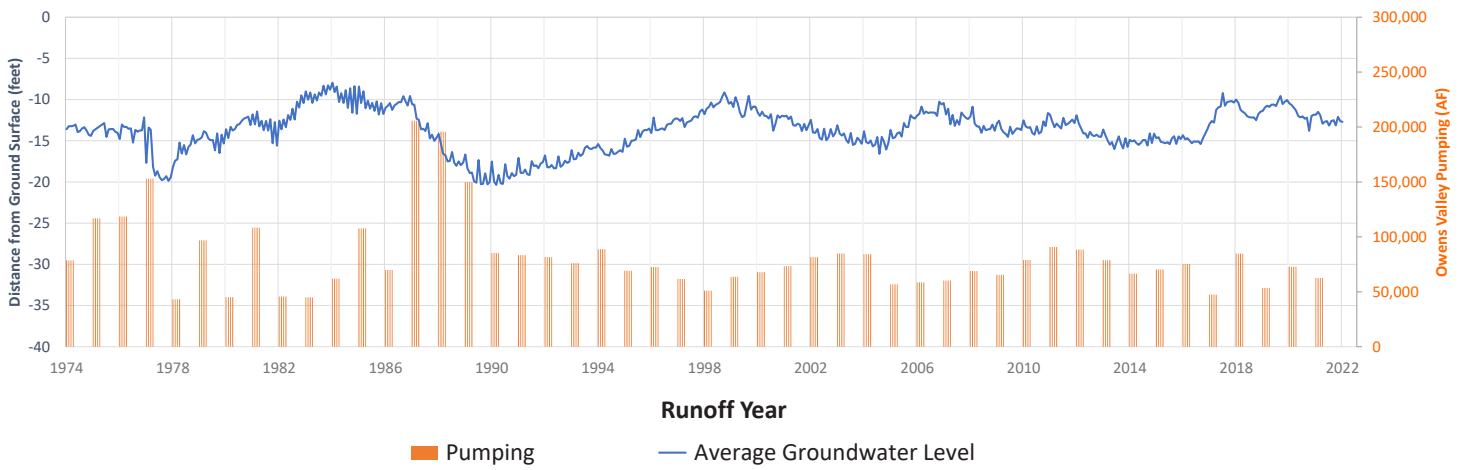
Groundwater Pumping

Beginning in 1987, LADWP started implementing the provisions of the Agreement and the Green Book that regulated groundwater pumping using vegetation water demand and the available soil moisture at each vegetation monitoring site. These provisions determine whether wells associated with each monitoring site can be operated. Soon after, a significant drought began as these provisions were being implemented.

Consequently, an additional interim agreement, the Drought Recovery Policy (DRP), was entered in 1991 to allow recovery from drought conditions by controlling pumping more conservatively than what the Water Agreement provisions allowed. The DRP provisions greatly reduced groundwater pumping for export to Los Angeles until 2002, when based on an evaluation of vegetation conditions, the DRP was terminated and groundwater management was returned to the provisions of the Inyo/LA Water Agreement as the basis of groundwater management in Owens Valley. As a conservative approach to groundwater management in Owens Valley, LADWP has pumped only about 50 percent of what is allowed under the term of Water Agreement. (See previous figure). All of the pumped water by LADWP is directly or indirectly provided to in-valley uses within Owens Valley.

LADWP is utilizing groundwater from nine Owens Valley wellfields and runoff to supply water for both in-valley uses and export to Los Angeles starting in 1970 after the completion of the second LAA. The average pumping





from 1991 to 2020 has been approximately 72,000 AF compared to 107,000 AF from 1971 to 1990 as shown in the previous figure.

Due to LADWP’s conservative groundwater management in Owens Valley, groundwater levels have remained relatively stable since 1991 (See Figure) with the implementation of Inyo/LA Water Agreement, with fluctuation mainly due to changes in runoff. With the actual pumping less than 50% of what is allowed under the terms of Water Agreement, the groundwater level fluctuations have been mainly in response to the Owens Valley runoff conditions. While the extended drought and high pumping in late 1980s resulted in large groundwater declines, during a similar extended drought of 2012-2016, the average Owens Valley groundwater levels remained relatively stable.

Water Use in Owens Valley

The Inyo County/Los Angeles Long-term Water Agreement commits LADWP to supply water for certain

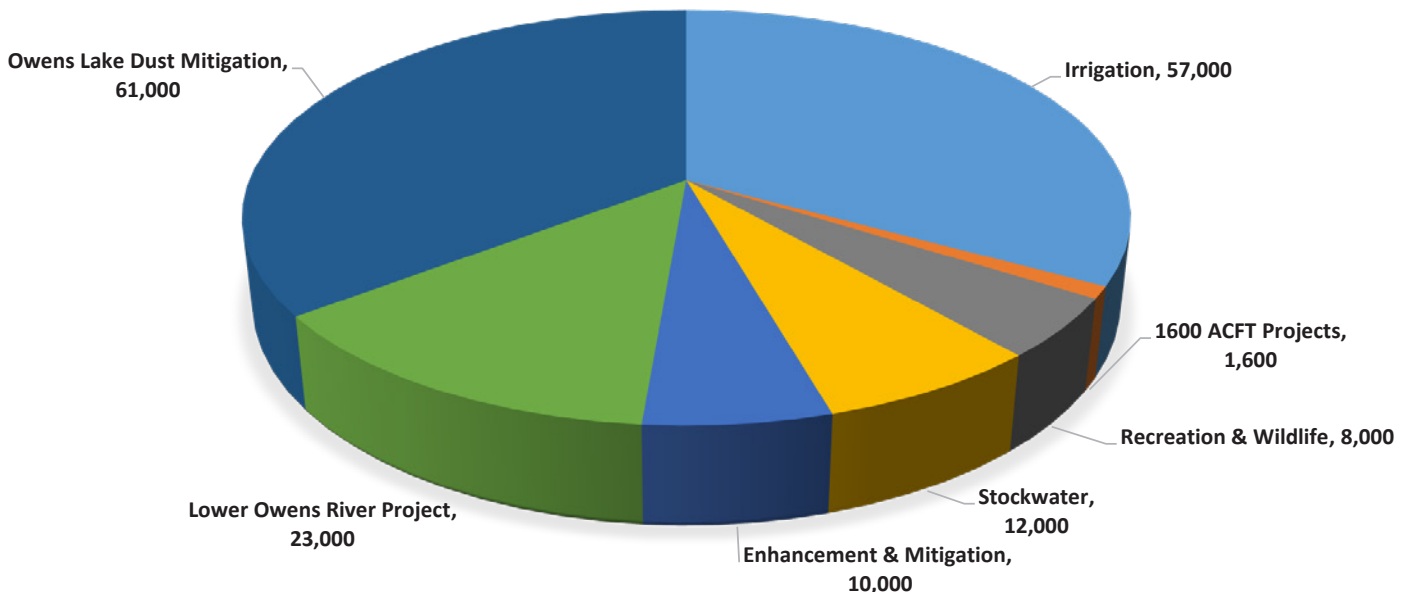
uses in the Owens Valley on City-owned land. The uses include irrigation and stock water, town water system, enhancement/mitigation project, Lower Owens River Project, 1,600 AF projects and recreation and wild life. The Water Agreement requires LADWP to supply water to irrigated lands that were irrigated as of the 1981 irrigation season.

In addition to water uses on City-owned lands in Owens Valley, LADWP is obligated to perform dust mitigation on Owens Lake. As a result, LADWP provides approximately 61,000 AFY for the OLDMP.

Green Book Revision

Inyo County and the City recognized deficiencies exist in the groundwater pumping provisions of the Agreement, however, efforts to resolve the problems had not been collaborative. Inyo County’s efforts were focused on a depth-to-water based management while the LADWP was focused on long-term sustainable management.

2012-2021 AVERAGE TOTAL USES = 173,000 AFY



In November 2006, the Standing Committee endorsed the Framework and Procedures for Developing the Revisions to the Green Book which initiated a joint revision effort. As a result of this framework, 11 work plans have been developed to guide revisions, a major one being to develop a new or improved operational trigger mechanism for pumping. This work is not complete yet.

In February 2017, updated vegetation monitoring provisions of the Green Book were approved by the Inyo/Los Angeles Standing Committee. At this point Inyo County and LADWP must start the work on the remaining work plans.

LADWP Mitigation Projects and Other Obligations

LADWP began exporting water from the Owens Valley (Inyo County) for municipal use through the First LAA in 1913. Exports from the Owens Valley increased when the Second LAA came online in 1970. At this time, surface water exports were supplemented with water supplied from groundwater pumping. Some environmental impacts occurred from these exports in the way of vegetation dieoff from groundwater pumping, cessation of irrigation through abandoned agriculture, and related air quality concerns. As a consequence, a series of mitigation projects and management activities were developed to mitigate for past impacts and help maintain and manage the City's water exports from the Owens Valley into the future.

Beginning in 2016, LADWP and Inyo County Water Department (ICWD) staff reviewed all pertinent guiding documents in an effort to determine a complete list of environmental mitigation and other commitments and an evaluation of the status of these projects. In total, 113 commitments (64 mitigation projects and 49 other obligations) were identified as required under the 1991 EIR, Inyo/Los Angeles Water Agreement, 1997 MOU, and other related legal documents. The 64 mitigation projects include a broad range of environmental mitigation efforts, including the Lower Owens River Project (a large scale river restoration project that rewaters 62 miles of the Owens River, enhances off river wetlands for wildlife, and prescribes land management activities for 78,000 acres of City property in the Owens Valley); several spring and wildlife habitat enhancement projects, 1,100 acres of native revegetation projects, and various recreation and other community-based projects (i.e., wood lots, sports complex). These are listed in Table 1. The 49 other commitments include financial assistance to the County of Inyo and local communities for various county services, park rehabilitation and maintenance, water and environmental activities; the release of City-owned lands for public purposes; and various plans for managing City lands for agricultural, recreational,

commercial, and habitat purposes (Table 2). The status of these commitments is grouped into the following categories:

- Complete: Project has no additional commitments required (no water allotment or other financial or environmental mitigation, no continual monitoring and reporting),
- Ongoing as Necessary/Required: These measures are only applied when necessary (monitoring and reporting for mitigation measures for new projects, construction, etc.),
- Implemented and Ongoing: Project is fully implemented and is currently meeting goals; however, there may be ongoing water or financial commitments or monitoring and reporting requirements,
- Fully Implemented but is not meeting goals: Project is fully implemented but has not yet met prescribed goals or success criteria,
- Not fully Implemented: Project under development or construction, but not fully implemented.

Presently, of the 64 required environmental mitigation projects (Table 1), LADWP reports:

- 8 are complete,
- 43 are implemented and ongoing,
- 13 are fully implemented but not meeting goals,
- 0 are not fully implemented.

To date, LADWP has invested over \$143,200,000 implementing, operating, and maintaining these 64 mitigation projects in the Owens Valley to comply with the City's legal commitments. This figure includes capital and operation and maintenance costs associated with the projects as well as other financial payments (if relevant). This figure does not include the cost of water committed to these projects.



Rawson Pond #2

These 64 projects commit an average of 38,000 AFY (12,380,000,000 gallons) of the City's water supply per existing legal agreements. This equates to approximately \$38,000,000 in annual costs for water for these projects (calculated using \$1000 per acre-foot for Tier 1 treated water).

Of the 49 other commitments (Table 2), LADWP reports:

- 18 are complete,
- 6 are ongoing as necessary or required,
- 23 are implemented and ongoing,
- 0 are fully implemented and not meeting goals, and
- 2 are not fully implemented (*new wells and LORP Recreation Plan – Inyo County Commitment).

As of October 2020, LADWP has spent \$128 million in fulfilling its financial and other commitments under

the Inyo/Los Angeles Water Agreement and related documents. This includes over \$115 million in financial assistance to the County and local communities for upgrades to local water systems, park rehabilitation, campground development, facility maintenance, and other water and environmental activities, in addition to funding the County Salt Cedar Eradication program. These financial contributions are in addition to the mitigation projects themselves.

LADWP continues to invest in ongoing environmental restoration projects in the region that have helped restore stream flows, revive vegetation and help to recreate a healthy environment for wildlife habitats to thrive. The total estimated cost of all of these efforts is over \$272,000,000 to date. In addition to this \$272,000,000, LADWP provides a volume of water to these projects valued at approximately \$38,000,000 annually.



Lower Owens River

1991 EIR	1991 EIR Environmental	1991 EIR E/M	Revised Project	1997 MOU	Table 1. LADWP MITIGATION PROJECT COMMITMENTS (October 2020)	Completed	Implemented 2	Implemented 3	Implemented 5	Not Fully Implemented 5
				X	Aberdeen Ditch Project (Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3))			X		
X	X				Big and Little Seely Springs (1 acre pond near Well W349; EIR Impact 10-14, EIR Table 5-2)			X		
X			X		Big Pine Area Revegetation Project (160 acres; EIR Impact 10-19)				X	
X			X		Big Pine Area Revegetation Project (20 acres; EIR Impact 10-19)				X	
X					Big Pine Ditch System (EIR Impact 10-19)			X		
X		X	X		Big Pine Northeast Regreening (30 acres; EIR Impact 10-11, EIR Table 5-3)			X		
X			X		Bishop Area Revegetation Project (124 acres; EIR Impact 10-16)				X	
X			X		Blackrock 16E Revegetation Project (EIR Impact 10-11)	X				
X	X				Blackrock Hatchery (EIR Impact 10-14)			X		
X	X				Buckley Ponds (EIR Impact 10-5 and 11-1, EIR Table 5-2)			X		
X	X				Calvert Slough (EIR Impact 10-5, EIR Table 5-2)			X		
X	X			X	Diaz Lake (EIR Table 5-2, Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3))			X		
X		X			Eastern California Museum (EIR Tables 4-3 and 5-3)			X		
X	X				Farmers Pond (EIR Impact 10-5, 10-18, 11-1, EIR Table 5-2)			X		
X	X				Fish Springs Hatchery (EIR Impact 10-14)			X		
X			X		Five Bridges Area Revegetation Project (300 acres; EIR Impact 10-12)	X				
				X	Freeman Creek Project (Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3))			X		
X				X	Hines Spring (1 to 2 acres, EIR Impact 10-14), implemented as the Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3)			X		
X			X		Hines Spring South (EIR Impact 10-11)				X	
				X	Hines Spring Well 355 Project (Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3))			X		
				X	Homestead Project (Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3))			X		
X			X		Independence 105 (EIR Impact 10-13)	X				
X			X		Independence 123 (EIR Impact 10-13)	X				
X			X		Independence 131 (EIR Impact 10-13)				X	
X		X			Independence Ditch System (EIR Table 4-3)			X		
X		X			Independence East Side Regreening Project (23 acres; EIR Impact 10-11, EIR Table 5-3)			X		
X		X			Independence Pasturelands and Native Pasturelands (610 acres; EIR Impact 12-1, EIR Tables 4-3 and 5-3)			X		
X		X			Independence Roadside Rest Area (0.5 acres; EIR Tables 4-3 and 5-3)			X		
X		X			Independence Springfield (286 acres; EIR Impact 12-1, EIR Tables 4-3 and 5-3)			X		
X		X			Independence Woodlot (20 acres; EIR Impact 10-11, EIR Table 4-3)			X		
X	X	X			Klondike Lake Aquatic Habitat (160 acres; EIR Impact 10-5 and 11-1, EIR Tables 4-3, 5-2, and 5-3)			X		

Table 1. LADWP MITIGATION PROJECT COMMITMENTS (October 2020) Continued

1991 EIR	1991 EIR Environmental	1991 EIR E/M	Revised Project	1997 MOU		Completed	Implemented 2	Implemented 3	Implemented 5	Not Fully Implemented 5
					Klondike SSHA (Big Pine Ditch System MND)			X		
			X		LAWS 118 (19 acre portion) (Laws Type E Transfer MND)				X	
			X		LAWS 129 (Laws Type E Transfer MND)				X	
			X		LAWS 27 (Native Seed Farm) (Laws Type E Transfer MND)				X	
			X		LAWS 90 (Laws Type E Transfer MND)				X	
			X		LAWS 94 (Laws Type E Transfer MND)				X	
			X		LAWS 95 (Laws Type E Transfer MND)				X	
X			X		Laws Area Revegetation Project (140 acres; EIR Impact 10-18)				X	
X		X			Laws Historical Museum Pasturelands (21+15 acres; EIR Impact 10-18, EIR Table 5-3)			X		
X		X			Laws/Poleta Native Pasture (216 acres; EIR Impact 10-16, EIR Tables 4-3 and 5-3)			X		
X	X				Little Blackrock Springs (EIR Impact 10-14, EIR Table 5-2)			X		
X		X			Lone Pine East Side Regreening (11 acres; EIR Impact 10-16, EIR Table 5-3)			X		
X		X			Lone Pine-North Lone Pine Clean Up (EIR Table 4-3)	X				
X		X			Lone Pine Riparian Park (320 acres, EIR Tables 4-3 and 5-3)			X		
X		X			Lone Pine Sports Complex (EIR Table 5-3)	X				
X		X			Lone Pine West Side Regreening (8 acres; EIR Impact 10-16, EIR Tables 4-3 and 5-3)			X		
X		X			Lone Pine Woodlot (12 acres; EIR Impact 10-11, EIR Table 4-3)			X		
X	X	X		X	LORP Project (60 miles, perhaps more than 1,000 acres)/ Lower Owens Rewatering Project)			X		
X		X			McNally Ponds and Native Pasturelands (300 acres pasture, 60 acres ponds; EIR Impact 10-5 and 10-18, EIR Tables 4-3, 5-3)			X		
X	X	X			Millpond Recreation Area (EIR Impact 10-5, EIR Table 5-2 and 5-3)			X		
				X	North of Mazourka Canyon Road Project (Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3))			X		
X					Reinhackle Spring (EIR Impact 10-14)			X		
X		X			Richards Fields (160 acres; EIR Impact 10-16, EIR Table 4-3)			X		
X	X				Saunders Pond (EIR Impact 10-5, EIR Table 5-2)			X		
X		X			Shepherd Creek Alfalfa Field (198 acres; EIR Impact 10-11, EIR Tables 4-3 and 5-3)			X		
X		X			Shepherd Creek Potential (60 acres; EIR Impact 10-11, EIR Table 5-3)	X				
X					Steward Ranch (EIR Impact 9-14)	X				
X			X		Tinemaha 54 Revegetation Project (EIR Impact 10-11)				X	
X		X			Tree Planting along Roadways (EIR Table 4-3)			X		
X	X				Tule Elk Field (EIR Table 5-2)			X		
X		X			Van Norman Fields (170 acres; EIR Impact 10-16, EIR Table 4-3)			X		
				X	Warren Lake Project (Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3))			X		
				X	Well 368 Project (Additional Mitigation Projects Developed by the MOU Ad Hoc Group (MOU Section III.A.3))			X		
						8	0	43	13	0

Table 2. LADWP OTHER LEGAL COMMITMENTS (October 2020)					Completed 1	Ongoing as Necessary and Required 2	Implemented and Ongoing 3	Fully Implemented But Not Meeting Goals 4	Not Fully Implemented 5
Water Agreement	91 EIR	91 EIR E/M Project	Revegetation Project Other Agreement	97 MOU					
				X	Aerial Photo Analysis (MOU Section III.E)	X			
				X	Annual Report on the Owens Valley (MOU Section III.H)		X		
			X		Blackrock 94 Burns (2014 Stipulation)	X			
X					Cooperative Studies (Water Agreement Section IX)		X		
X					Dispute Resolution (Water Agreement Section XXVI)		X		
				X	Dispute Resolution and Litigation (MOU Section VI)		X		
X					Enhancement/ Mitigation Projects (Water Agreement Section X)			X	
X					Exchange of Information and Access (Water Agreement Section XVII)			X	
X					Financial Assistance-Big Pine Ditch System (Agreement Section XIV.E)			X	
X					Financial Assistance-General Financial Assistance to the County (Water Agreement Section XIV.D)			X	
X					Financial Assistance- Park & Environmental Assistance to City of Bishop (Water Agreement Section XIV.F)			X	
X					Financial Assistance- Park Rehabilitation, Development, & Maintenance (Water Agreement Section XIV.B)			X	
X					Financial Assistance- Salt Cedar Control (Water Agreement Section XIV.A)			X	
X					Financial Assistance-Water and Environmental Activities (Water Agreement Section XIV)			X	
				X	Financial Provisions (MOU Section IX)	X			
				X	Fish Slough (MOU Section IV)			X	
X					Groundwater Management (Water Agreement Section II)			X	
X					Groundwater Pumping on the Bishop Cone (Water Agreement Section VII)			X	
X					Groundwater Recharge Facilities (Water Agreement Section VIII)		X		
				X	Habitat Conservation Plan (MOU Section III.B)	X			
X					Haiwee Reservoir (Water Agreement Section XIII)	X			
				X	Inventory of Plants and Animals at Spring and Seeps (outside LORP Planning Area) (MOU Section III.C)	X			
	X				Laws Area Potential Mitigation-Consideration by Standing Committee (640 acres; EIR Impact 10-18)		X		
X					Legislative Coordination (Water Agreement Section XVI)			X	
				X	LORP Agency Consultation and Public Involvement (MOU Section II.D)	X			
				X	LORP EIR (MOU Section II.F)	X			
				X	LORP Implementation (MOU Section II.H)	X			
				X	LORP Monitoring and Adaptive Management Plan (MOU Section II.E)			X	
				X	LORP Permits Approvals and Licenses (MOU Section II.I)	X			
				X	LORP Plan (MOU Section II.A)	X			
				X	LORP Planning Area-Inventory of Plants and Animals at Spring and Seeps (MOU Section III.A.2)	X			
				X	LORP Pumpback System (MOU Section II.G)	X			
				X	Lower Owens Off River Lakes and Ponds (MOU Section II.C.3)			X	
X					Lower Owens River (financial commitment) (Water Agreement Section XII)			X	
				X	Lower Owens River Delta Habitat Area (MOU Section II.C.2)			X	
				X	Lower Owens River Project 1500-Acre Blackrock Waterfowl Habitat Area (MOU Section II.C.1)			X	
				X	Lower Owens River Riverine-Riparian System (MOU Section II.C.1)			X	

Table 2. LADWP OTHER LEGAL COMMITMENTS (October 2020) Continued					Completed 1	Ongoing as Necessary and Required 2	Implemented and Ongoing 3	Fully Implemented But Not 4	Not Fully Implemented 5
Water Agreement	91 EIR	91 EIR E/M Project	Revegetation Project Other Agreement	97 MOU					
				X	Lower Owens River Delta Habitat Area (MOU Section II.C.2)			X	
				X	Lower Owens River Project 1500-Acre Blackrock Waterfowl HHabitat Area (MOU II.C.4)			X	
				X	Lower Owens River Riverine- Riparian System (MOU Section II.C.1)			X	
				X	Mitigation Plans for Impacts Identified in the 1991 EIR and the Water Agreement (MOU III.F)			X	
X					New Wells & Production Capacity (Water Agreement Section VI)				X
X					Owens River Recreational Use Plan (Water Agreement XV.B)				X
				X	Owens Valley Land Management Plans (MOU Section III.B)			X	
X					Release of City Owned Lands -Lands for Public Purposes (Water Agreement Section XV.D)		X		
X					Release of City Owned Lands-Bishop (Water Agreement Section XV.B)	X			
X					Release of City Owned Lands-Inyo County (Water Agreement Section XV.A)	X			
X					Release of City-owned lands-Additional Sales (Water Agreement Section XV.C)	X			
				X	Technical Group Meetings (MOU Section III.G)		X		
X					Town Water Systems (Water Agreement Section XI)	X			
				X	Type E Vegetation Inventory (MOU Section III.D)	X			
				X	Yellow-billed Cuckoo Habitat (MOU Section III.A.1)			X	
						18	6	23	0 2



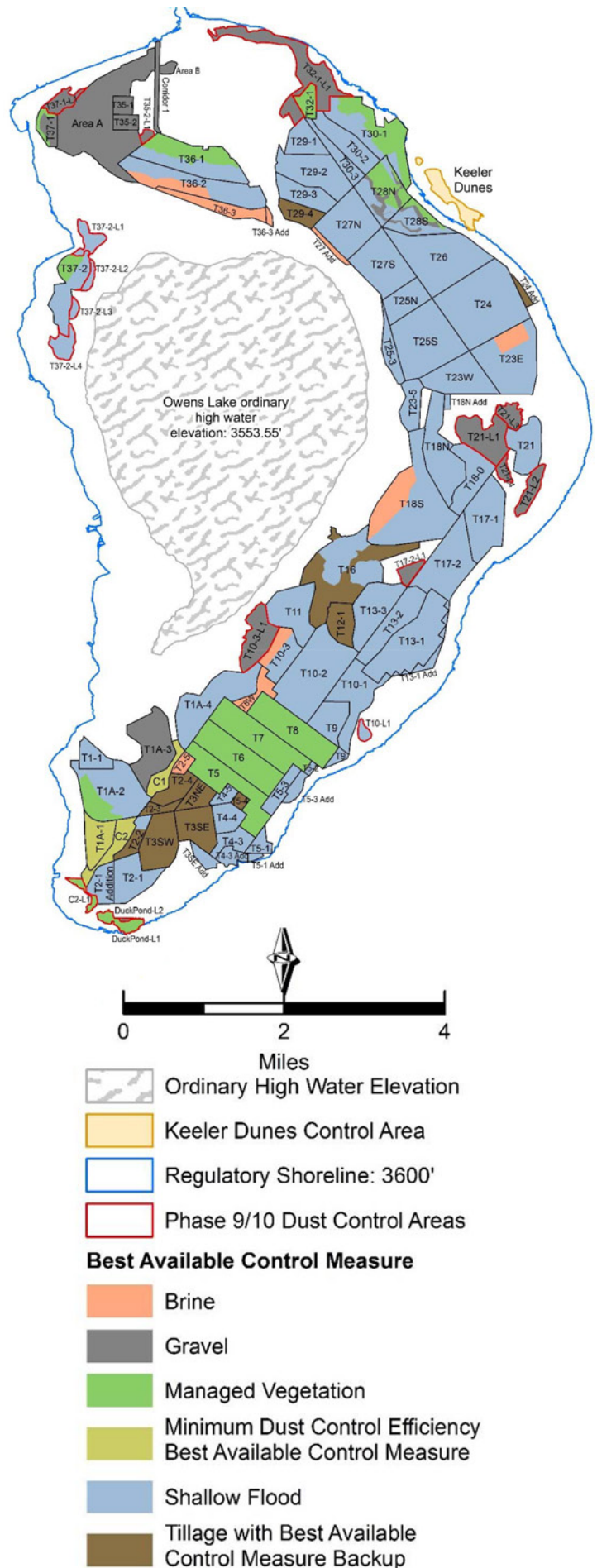
OWENS LAKE DUST MITIGATION

Owens Lake is the remnant of a large prehistoric freshwater lake which extended some 60 miles up and down the Owens Valley and was over 300-feet deep. Gradually, as the climate of the area changed from post-glacial to semi-arid, the lake began to dry up. By the time settlers entered the valley in the mid-19th century the lake had become a shallow saline desert sink, only a fraction of the size it had been in prehistoric times. Dissolved minerals and salts in the water, which had flowed into Owens Lake over many millennia, had concentrated through evaporation to the point where only a few primitive organisms could survive in the waters of the lake such as algae, brine shrimp, and brine flies. By 1905, diversion of water by farmers in the Owens Valley, coupled with drought in the region, had shrunk the lake even further to approximately 60% of what it was in the mid-1800s. By 1913, the City had purchased much of the water rights in the Owens Valley and had completed the First LAA to divert most of the remaining water in the Owens River south to Los Angeles. As a result, the lakebed has been essentially dry since the late 1920s. Dissolved minerals and salts in the water crystallized into an alkali salt crust as the lake dried up. This crust used to cover much of the lakebed.

High winds on Owens Lake have the potential to cause erosion of the salt crust and develop wind-blown dust. Dust is measured as PM10, or particulate matter less than 10 microns in diameter. These particles are extremely small, approximately one-tenth the diameter of a human hair, and when inhaled can cause a variety of health problems. Federal regulations have set health-based PM10 standards to prevent concentrations of suspended particles in the air that are injurious to human health. Prior to implementation of dust control measures by LADWP, dust originating from the lakebed was the major contributor to violations of the dust standard in the southern Owens Valley, and was the dustiest place in the United States. Today, LADWP operates approximately 48.6 square miles of dust control including Best Available Control Measure (BACM) with 99% reduction of dust emissions as part of the Owens Lake Dust Mitigation Program (OLDMP). Owens Lake PM10 emissions were estimated at 62,377 tons/year in the year 2000 and 355 tons/year in 2019.

LADWP's Responsibility

The Great Basin Unified Air Pollution Control District (District) is the local agency responsible for developing and implementing a plan for Owens Lake to meet National Ambient Air Quality Standards (NAAQS) for PM10. In 1998 the City signed a historic Memorandum of Agreement (MOA) with the District and accepted the responsibility to reduce dust emissions from Owens



SIP 2015 Dust Control Map 20151116.mxd



Lake to meet the NAAQS for PM10 and began the OLDMP to install and operate dust control measures on the lake bed. The MOA was incorporated into a formal air quality SIP developed and adopted by the District, and approved by the EPA in October 1999. The District prepared subsequent SIP revisions in 2003, 2008, and most recently in 2016. The purpose of the 2016 SIP was to provide a plan to attain the NAAQS for PM10, as required by the Clean Air Act and its 1990 amendments, by the end of 2017, and to implement provisions of the 2014 Stipulated Judgment between the District and the City which included continued operation of existing dust control measures and additional control measures, up to a total of 53.4 square miles, on the lakebed to attain compliance with air quality standards.

Dust Control Measure Implementation

Beginning in 1980, the District and other researchers studied the lake environment and the mechanisms that caused Owens Lake's severe dust storms. This research yielded three PM10 dust control measures: Shallow Flooding, Managed Vegetation, and Gravel Cover. Shallow Flooding involves flooding the area to be controlled until it is either inundated with a few inches of water or the soil becomes thoroughly saturated to the surface with water. Managed Vegetation involves growing native vegetative cover that will hold the shifting and emissive lakebed in place, locking up the dust. The gravel laid on the surface forms a non-erodible surface when the size of the gravel is large enough that the wind cannot move the surface.

After a prolonged 5-year drought, three water-saving variations of Shallow Flooding were approved by the 2014 Stipulated Judgment, 2016 SIP, and/or District Rule 433: Tillage with BACM Backup (TwB2), Brine with BACM Backup (Brine BACM), and Dynamic Water Management (DWM). Each variation may be ordered for re-flood if performance standards are not met. TwB2 is an adaptation of Shallow Flood that controls dust by roughening the lakebed surface with a combination of furrows and ridges. Brine BACM is a version of Shallow Flooding that controls dusts utilizing evaporate and

capillary salt crusts and flooding with brine water solution. DWM is an adaptation of Shallow Flood that allows for delayed start dates and/or earlier end dates for shallow flooding in areas that have historically had low PM10 emissions within the modified time periods.

The first phase of OLDMP dust control implementation was completed in December 2001. Most recently, Phase 9/10 was completed on December 31, 2017, bringing the total area of dust mitigation on Owens Lake to approximately 48.6 square miles at a total cost of \$2.5 billion. The price tag includes capital, O&M, regulatory fees, and replacement water costs.

2006 Settlement Agreement

In 2006, LADWP and the District entered into an agreement to settle their disputes arising from the District's intent to order implementation of additional dust control measures. Under the 2006 Settlement Agreement, the parties agreed to a schedule for implementation of 13.2 square miles of supplemental BACM control measures on the dried Owens Lake bed by April 2010, and revisions to the 2003 SIP. The District developed and adopted the 2008 SIP and Board Order 080128-01 (2008 Board Order) to reflect the relevant terms of the agreement.

LADWP successfully constructed 9.2 square miles of shallow flooding and 0.5 square miles of controls in an area of the lake known as the "Channel Area". On the remaining 3.5 square miles, pursuant to the 2008 Board Order, the City was allowed to implement Moat & Row, a waterless control measure characterized by an array of earthen berms (rows) topped with sand fence, flanked on each side by slope-sided ditches (moats). However, the California State Lands Commission (CSLC) expressed concerns regarding the moat and row dust control measure and requested additional environmental studies to be performed.

LADWP requested and was granted a variance from the District extending the deadline for completion of Moat & Row to October 1, 2010, in exchange for LADWP's agreement to implement two additional square miles of dust control beyond what was identified in the 2008 SIP. In December 2009, CSLC issued a lease for only 0.4 square miles of Moat & Row, which allowed construction of sand fence. In April 2010, CSLC denied LADWP's lease application for the use of moat and row on the remaining 3.1 square miles. In 2011, the District subsequently issued Board Order No. 110317-1 to install BACM in lieu of Moat & Row on the 3.1 square mile area hence known as the "Phase 7a" dust control areas by December 31, 2013. Areas controlled by Managed Vegetation BACM required compliant vegetation cover by December 31, 2015.



Owens Lake—Shallow Flood Dust Mitigation

Due to the discovery of cultural resource areas in the Phase 7a dust control areas, the District Governing Board issued a modified Stipulated Order for Abatement No. 130819-01 on August 19, 2013 that excluded California Register of Historical Resources – eligible areas from Phase 7a and delegated them to Phase 7b for continued District monitoring. The 2013 SOA also extended the deadline to implement BACM on the Phase 7a areas to December 31, 2015, and areas controlled by Managed Vegetation BACM required compliant vegetation cover by December 31, 2017. As part of this abatement order the City made a \$10 million public benefit contribution to the District to control PM10 emitted from the Keeler Dunes.

City of Los Angeles and District Settlement Agreement

Following the disagreement by LADWP and the District on additional dust mitigation ordered in 2011, 2012, 2013 and 2014, the Parties entered into a settlement agreement on the need for additional effective dust control measures that do not rely on water and can be substituted in areas currently under control or applied in areas ordered to be controlled. The Parties further acknowledge the need to balance the requirements to control dust emissions and conserve water with the requirements to minimize impacts to cultural and biological resources. The settlement agreement terms included:

By December 31, 2017, the City shall construct a dust control project to complete the Phase 9 and Phase 10 dust controls by selecting and installing BACM on 3.62

square mile. The Phase 9/10 project shall bring the total area of the City’s dust controls on the Owens Lake bed to 48.6 square miles.

Upon completion of the Phase 9/10 project, and any additional BACM Contingency Measures, the City shall permanently operate dust controls with approved BACM on those areas and all other existing areas, where the City has installed and operates dust controls on the dried Owens Lake bed, except as provided by a SIP for BACM testing and development.

To provide the emission reductions necessary, the District may order the City on or any time after January 1, 2016 to implement additional BACM contingency measure controls on up to 4.8 square miles of the dried Owens Lake bed, for a total of 53.4 square miles of dust controls on the Owens Lakebed.

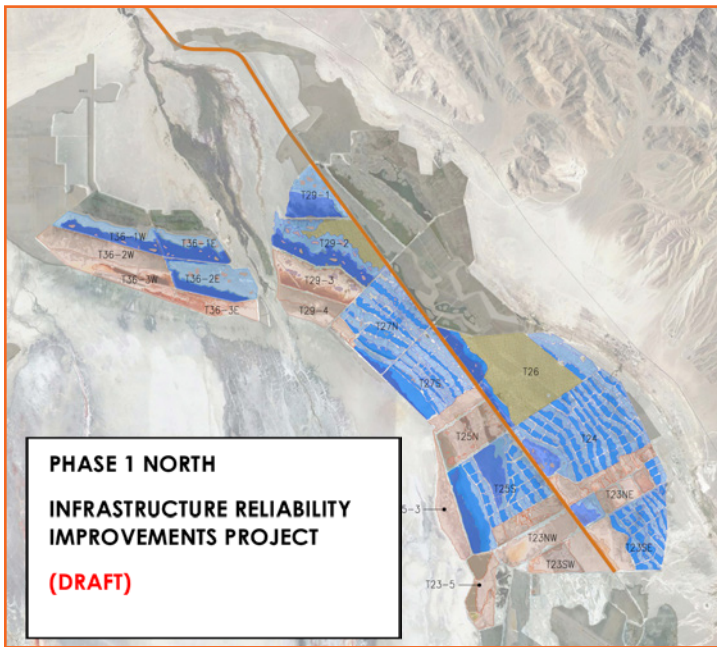
Except for the 4.8 square mile BACM Contingency Measure area, the District shall not issue any further orders for mitigation measures to the City under Section 42316 or any other law, requiring the City to control windblown dust emissions (including PM 10, PM 2.5 or any speciated components or products of PM) from any areas on the dried Owens Lake bed beyond the combined 53.4 square miles.

The BACM Contingency Measures provided under this paragraph will be limited to the Owens Lake bed below elevation 3,600.00 feet AMSL and above the natural brine pool at 3,553.55 feet AMSL.

In May 2016, the BLM issued a right of way grant for the Phase 9/10 project that excluded an 11-acre portion of the area within the T2-1c dust control area. After two years of working with BLM and the District, on March 15, 2019, BLM issued a right of way amendment to LADWP for the 11-acre area. On July 31, 2019, LADWP completed installation of alternative dust control measures approved by both BLM and the District. Compliance of the areas is due by July 31, 2024.

Phase 1N Infrastructure Reliability Improvements Project

The Owens Lake Dust Mitigation Program - Phase 1 North Project was completed in 2001 and was the first dust mitigation project constructed on Owens Lake. The project included 9 miles of 32 to 48-inch diameter fiberglass reinforced plastic (FRP) mainline pipe, and 12 square miles of shallow flood dust controls. Since its installation, most of the existing infrastructure within the Phase 1N DCAs has remained in place and in operation without interruption. However, due to the highly corrosive saturated soils and extreme environmental conditions at Owens Lake, corrosion-related issues



are increasing and leading to the dust mitigation infrastructure nearing the end of its useful service life. This increases the risk of failure. In addition, technological advances, availability of replacements and spare parts, and changes in performance and safety standards have rendered some of the existing infrastructure obsolete.

In early 2020, in-depth condition and performance assessments were performed on all dust mitigation infrastructure. Based on the assessment results, a risk analysis was conducted, allowing the planning team to prioritize rehabilitation and replacement of mitigation infrastructure with the greatest likelihood and consequences of failure.

Although the primary goal of the Phase 1N Infrastructure Reliability Improvements Project (Phase 1N Project) is to reduce the likelihood and consequence of failure posed by an aging infrastructure and improve long-term reliability, the project will also optimize operability, improve dust control effectiveness, maintain habitat value, and conserve water through operational efficiencies and technological innovation. The project goals and objectives are consistent with Board Resolution 016 21 – “Owens Lake Water Use Policy”, and recommendations made by the Owens Lake Scientific Advisory Panel (OLSAP).

Owens Lake Asset Management

Over the past 20 years, LADWP’s OLDMP has successfully completed a total of 10 capital projects which cover approximately 48.6 square miles of Owens Lake playa. The dust mitigation infrastructure installed under these projects is necessary to achieve compliance with National Ambient Air Quality Standards established and enforced by the District under Health and Safety Code 42316.

Although much of the Owens Lake infrastructure is routinely maintained, refurbished, and replaced by LADWP Operations and Maintenance personnel stationed at Owens Lake, an Asset Management Program is needed to improve the long-term reliability, resiliency, sustainability, and safety of dust mitigation infrastructure through strategic and actionable business decisions and investments that balance cost, innovation, regulatory and environmental requirements, operator knowledge, safety by design, performance & condition of assets, and water conservation. This program is under development and will be in place by the end of 2023.

Owens Lake Groundwater Development Program (OLGDP)

LADWP and Inyo County agreed to conduct a joint study to explore the feasibility of utilizing groundwater beneath Owens Lake to supply a portion of water demand for dust mitigation measures in a 2007 Interim Management Plan. The purpose of Owens Lake Groundwater Evaluation Project (OLGEP) was to perform an independent evaluation of groundwater under Owens



Owens Lake Maintenance

Lake that can be responsibly used to augment the water supply portfolio for the Owens Lake Dust Mitigation Program. The study performed by LADWP's consultant, MWH Americas, Inc. completed in 2012 and concluded that it is feasible to use groundwater for the lake for dust mitigation activities and determined that between 9,000 AF and 15,000 AFY of water could be available for dust mitigation activities on Owens Lake.

Based on the conclusions of the OLGE, and as a component of Owens Lake Master Project, LADWP proposed the OLGDP in 2014. The proposed OLGDP includes three implementation phases. During Phase 1, LADWP is/has:

- Conducting additional studies to better understand the role of faults in Owens Lake as groundwater barriers and/or conduits.
- Collecting data to establish a baseline for groundwater-dependent resources including: non-LADWP owned wells, land surface elevation, and the habitat.
- Developing Resources Protection Protocols (RPPs) for groundwater-dependent resource, and potential for additional dust emission when LADWP starts using groundwater for dust mitigation on Owens Lake.

- Installed additional monitoring wells 14 monitoring wells along alluvial fans surrounding the Lake and on representative springs locations that support wetland habitats on the shores of Owens Lake.
- Installed two testing wells and one monitoring well on Owens Lake, near Owens Valley and Owens River faults to conduct pumping tests to evaluate the effectiveness of faults as groundwater barriers and/or conduits.

Currently, LADWP is preparing a Hydrologic Monitoring, Management, and Mitigation Plan (HMMMP) as part of a planned EIR for the OLGDP. The environmental documentation will be a part of the application to CSLC for a lease to implement the OLGDP.

Operational Testing

LADWP installed two testing wells to improve the understanding of Owens Lake hydrogeology including the role of faults on groundwater movement. Initial 24-hour test were conducted on both wells that showed strong artesian condition. To understand the effect groundwater pumping on groundwater-dependent resources and to update the conceptual and computer models of Owens Lake, LADWP plans to conduct an operational test of one of the two testing wells located near Owens River Fault, called TW-E.

A permit application to conduct the test was submitted to CSLC. As part of the application, LADWP prepared a draft CEQA documentation, published for public review, and received a number of comments primarily from regulatory agencies. Due to current operation priorities, LADWP has postponed the operational test of TW-E. Meanwhile, comments received are being addressed, which are mainly related to the protection of groundwater-dependent resources. Specifically, LADWP and the District are cooperating to address the protection vegetated dune areas around the lake. Once current studies and updating the conceptual model Owens Lake are completed and concerns expressed by agencies on the protection of groundwater dependent resources are addressed, LADWP will resubmit the application for the operational test of TW-E to CSLC.

Groundwater Banking

A goal of LADWP is to optimize groundwater management in Owens Valley. Several groundwater banking projects in Owens valley and around Owens Lake are in the investigation phase.

The northern areas of the lake appear to be an optimal hydrogeologic setting for an Aquifer Storage and Recovery project, which would involve construction of injection wells that would inject excess LAA water, when available, into the confined aquifer. The water will then be





recovered at the start of the subsequent dust season or the during the following years for dust mitigation use.

An area along the alluvial fans west of Owens Lake and near Cottonwood Creek appear to be a prime location for groundwater banking when excess LAA supply is available. Similar to groundwater banking north of Owens Lake, excess water supply will be stored in underground aquifer through spreading in the area west Highway 395, and later pumped back when needed.

To maintain a 40 cfs flow in the Lower Owens River Project (LORP) at all times, LADWP releases up to 100 cfs at the LAA intake during the summer season with high losses along the project. LADWP is evaluating banking water when excess supply is available through an existing 15-mile long canal located east of the river and recover it during the summer months and discharge to the river to maintain the 40 cfs flow instead of releasing water from LAA.

These projects are currently in the evaluation phase as a number of technical and regulatory factors still need to be investigated. Preliminary water quality testing of the surface water and groundwater at varying depths has so far shown that an ASR project will not be detrimental to the quality of the existing groundwater in the aquifer.

Owens Lake Asset Management

The dust mitigation infrastructure installed under these projects is necessary to achieve compliance with National Ambient Air Quality Standards enforced by the District under Health and Safety Code 42316. Due to the highly saline and corrosive environment at Owens Lake, much of the dust mitigation infrastructure has corroded or is nearing end of its useful life, resulting in increased maintenance and at risk of failure. In addition, advances in communication technology and standardization instrumentation and control systems on Owens Lake have rendered the existing systems obsolete, and difficult to find replacement parts necessary for repairs and maintenance.

Although, much of the Owens Lake infrastructure is routinely maintained, refurbished, and replaced by LADWP Operations and Maintenance personnel stationed at Owens Lake; an Asset Management Program designed to mitigate the likelihood-of-failure and the consequences-of-failure is currently not in place. Failure of a critical asset, such as the fiberglass section of mainline pipe installed during the first dust control project, would jeopardize compliance with regulatory ambient air quality standards. As such, by 2022, LADWP engineers will develop an actionable risk-based Asset Management System that prioritizes the enhancement of dust mitigation infrastructure.



REAL ESTATE

The City owns approximately 314,000 acres located in the Eastern Sierra (252,000 acres in Inyo County and 62,000 acres in Mono County). City land ownership is generally located on the valley floor and extends from Haiwee Reservoir north to Mono Lake.

Management of City land is conducted by the Owens Valley Real Estate Group with oversight from Water System Management. The management objectives for these lands are to be consistent with the safe and reliable production and delivery of water to the City and to promote the conservation of water resources.

Secondary land uses on City property are administered through the issuance of lease agreements, use permits, licenses, and sales as described hereafter.

Business Lease/Use Permits/License Agreements

Standard real estate agreements:

- Business leases are agreements for commercial, recreational, and public uses. Commercial uses typically include retail, food and beverage, service stations, telecommunication sites, aggregate pits and other related uses that support the economic needs of the local communities. Recreational and public uses include airports, campgrounds, equestrian centers, landfills, parks, fish hatcheries, sport fields, community centers, museums, and research facilities for universities.
- Use permits are agreements for private use. Private uses include additional yard space to create a fire break, horse pastures, gardens, and private clubs such as the Boys and Girls Scouts, Saddle Club, Lions Club, etc.
- License agreements are for the granting right-of-way and do not grant a possessory right over the property being used. Uses include power and telephone lines, underground cables, ingress and egress points, water lines, bike paths, etc.

The City owns a significant amount of all the privately-owned property located in Inyo and southern Mono Counties. This has created a need for LADWP to lease property in and around the City of Bishop and other local communities. These properties are more likely to be considered surplus to the needs of LADWP and are typically leased or sold at public auction. Over the decades, LADWP has had a policy of leasing or divesting of in-town properties that are no longer needed for LADWP purposes and that, if leased or transferred into private ownership, would contribute to the betterment of the local communities.

Sale of Property

LADWP has had a long-standing policy of divesting of in-town property located in Inyo County that is no longer

required for operational purposes. This policy has existed since the 1930's and was reaffirmed by the LADWP Board of Commissioners in 2012. Changes to the 2012 policy for property located in Inyo County were approved by the Board in 2019. Significant changes to the policy include processing direct sales to current lessees. California Law provides an exemption to LADWP's competitive bidding requirements by providing that LADWP give lessees the first right of refusal to purchase the property they lease at a reasonable price.

There are provisions in the Inyo/Los Angeles Long-term Water Agreement, where LADWP and the City of Los Angeles committed to work in good faith to support the sale of property for public purposes and for the orderly expansion of existing communities. LADWP regularly negotiates with public agencies for the sale of real property for public purposes and public projects. Public projects typically include the transfer of real property rights for public transportation, government business, affordable housing, and school purposes. LADWP reserves all water rights on property it sells to protect the City's interests.

Ranch Leases

Ranches located in Inyo and Mono Counties were purchased in the early 1900s by the City to secure the water rights associated with the ranch lands. By acquiring these lands, the City was better able to control the water used for irrigation and, in turn, increase the flow of water into the Owens River which ultimately ends up in the LAA system. Many of the ranches that were purchased by the City were leased back to the previous owners for the purpose of:

- Having the ranch lessees serve as stewards of the land and to monitor and manage the property consistent with LADWP land management plans that are designed to promote the conservation of water, land and watershed resources.
- Continuing the tradition of ranching and agriculture in the Eastern Sierra.

LADWP currently administers 59 ranch leases. Their operations and presence on City property facilitate LADWP's land management obligations while allowing for productive use of the property and public access to open lands with minimal oversight and maintenance expenses to LADWP.

Range Management

The 1997 MOU states that LADWP will manage livestock grazing consistent with the other goals of the LORP. During the preliminary development of the grazing management plans for areas within the LORP project

area, LADWP gathered information from the ranch lessees and combined it with technical expertise in grazing management to develop applicable management strategies for the LORP area. Management and monitoring methodologies derived from this process are being applied to non-LORP lands within Inyo County. Non-LORP meadows/pastures are currently monitored through utilization standards, irrigated pasture condition scoring and/or range trend monitoring, as described in the LORP EIR for LORP area leases. This monitoring is used to understand current use patterns, and guide proper management in the future. Future management of these meadows/pastures will consider and prioritize riparian areas, seeps and springs, the integrity of the meadows, and sensitive plant and animal habitats, while still sustaining this important and historical use of City lands.

Eastern Sierra Land Protection

In the late 1990s, then LADWP General Manager S. David Freeman began discussions with the Wildlands Conservancy regarding the preservation of City-owned lands in the Eastern Sierra from future development by placing a conservation easement over City lands. The Board of Water and Power Commissioners at that time was opposed to this idea. Most people who live, work, and recreate in the Eastern Sierra are in favor of preserving the rural landscape, but some are concerned about restricted use and control of the City lands that may result from such protection.

The method by which preservation of these lands should be accomplished has been discussed over the years. Some possible options are:

- Conservation Easement: Extinguishes development rights on the majority of City lands while allowing LADWP to manage the lands as it has done in the past and permitting some development of City land in and

around communities. The Conservation Easement would be held and monitored by a third party.

- Charter Amendment: Does not allow development on City lands unless certain criteria, yet to be determined, were met. The amendment to the Charter would be monitored through the Board of Water and Power Commissioners and the Los Angeles City Council.
- Williamson Act: Enables local governments to enter into contracts with private landowners for the purpose to restrict specific parcels of land to agricultural or related open space. In turn, the private property owners receive property tax incentives from the local governments. Local governments receive an annual subvention of foregone property tax revenues from the State via the Open Space Subvention Act of 1971. Typically, Williamson Act contracts are for 20 years, continually renewing periods.

While not in the City's best interest, there continues to be interest by certain parties to preserve City-owned lands in the Eastern Sierra. The only recent discussions have been the idea of implementing a conservation easement on a smaller portion of City-owned land in Mono County that could be used as a model for future conservation easement efforts.

Crowley Reservoir

The largest reservoir in LADWP's water system, Crowley Lake was built by the City for water storage purposes and is open to the public for recreational purposes. In 1945 the Los Angeles Department of Recreation and Parks began operating a lake recreation concession (boat registration for fishing and water sports, Quagga Mussel inspection, campsites, boat rental and fueling facility). In 1991, the concession was awarded to Crowley Lake Fish Camp which has been the successful bidder for the concession since then.



Crowley Lake Fish Camp

NATIVE AMERICAN TRIBAL DISCUSSION

1938 Land Exchange

The City entered into an agreement with the Federal Government in 1938 exchanging seven parcels of land previously owned by the Federal government with three parcels of land previously owned by the City. The four Paiute Tribes involved with the land exchange were Benton, Bishop, Big Pine, and Lone Pine. The three parcels transferred to the Federal Government are located adjacent to the city of Bishop and the towns of Big Pine and Lone Pine. The properties traded by the City are near streams and are far more suitable for farming. Each side retained water rights associated with the land they owned because of the restriction of the City Charter requiring a two-thirds majority vote of voters in the City to relinquish the water rights. Instead of exchanging water rights, the City agreed to deliver 5,556 AFY to the City lands that were exchanged. This allotment included the combination of both surface water provided for irrigation, and groundwater pumping on the Reservations for domestic use. As the population of the Tribes has grown, they have been seeking additional land and water from the City.

Assembly Bill No. 52

In 2014, Governor Jerry Brown signed AB 52 into law. The goal of AB 52 is to promote the involvement of California Native American Tribes in the decision-making process when it comes to identifying and developing mitigation for impacts on resources of importance to their culture. AB 52 mandates that LADWP follows certain defined rules to comply with CEQA when it pursues a proposed project. The bill establishes a formal role for tribes in the CEQA process. LADWP, as Lead Agency under CEQA, is required to consult with tribes that are traditionally or culturally affiliated with the geographic area of a proposed project about potential tribal cultural resources in the project area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared.

Owens Valley Tribal Engagement Policy

From both formal and informal tribal consultation through AB 52, the relationship between the Tribes and LADWP stemming from the 1938 Land Exchange, and as the largest private land holder in Payahuunadü (Land of Flowing Waters; Owens Valley) LADWP has committed to meaningful engagement with the Tribal Sovereign Nations of the Owens Valley. LADWP is working to create open engagement based on communication, respect, understanding, and confidentiality.

In 2019 the Owens Valley Tribal Engagement Policy (Policy) was adopted by the LADWP Board of Commissioners to serve as the guiding document for LADWP managers and staff. The goal of the Policy is to develop long-term communication and meaningful partnerships with the tribes. LADWP has appointed a Tribal Liaison to implement the policy, and assist and facilitate communication, consultation, and engagement with the tribes.

LADWP takes a multi-tiered approach toward Tribal Engagement:

1. High-level policy engagement ensuring consistent communication between the highest-level decision makers within LADWP and the California Native American Tribes.
2. Project-specific consultation policy that complies with AB 52 and enables LADWP technical staff to consult with designated tribal representatives in a timely manner with an eye toward protection of specific cultural and tribal resources implicated by a specific proposed project.
3. Mutually beneficial partnerships between the Tribes and LADWP.
4. Board also established a Board liaison with the Tribes.

Collectively, LADWP's goal is to establish trust that satisfies the needs of both parties in the future and enables us to find mutually beneficial ways to interact through the combination of engagement and consultation.

Engagement

- From the LA Basin to Mono Lake, LADWP is in regular consultation with tribes who have cultural affiliation with CEQA projects where LADWP is the lead agency.
- LADWP in partnership with the Tribes has developed a Monitoring Compensation Agreement aimed at minimizing overhead costs and streamlining the reimbursement process of Tribal Monitors working on LADWP projects.
- Patsiata (Owens Lake) was nominated as a Historic District under Criterion C (unique cultural landscape) by the California State Historical Resources Commission. LADWP is working with local tribal representatives on how to best conduct dust control operations given the new designation.
- LADWP Managers are meeting quarterly with Lone Pine Paiute-Shoshone Tribal Council members on a

project to improve the water quality of irrigation water used on the reservation.

- LADWP partnered with the Fort Independence Tribe to protect the historically significant Camp Independence site adjacent to the Fort Independence Reservation.
- LADWP entered into a partnership with the Fort Independence Tribe where the Tribe recycles LADWP cardboard in exchange for a power drop to their recycling center.

- LADWP is working with the Big Pine Paiute Tribe of Owens Valley to resolve outstanding issues related to water deliveries to the Tribe.
- LADWP Real Estate is working with the Bishop Paiute Tribe on a land sale to allow for the expansion of the Tribe's cemetery.
- LADWP is assisting the Mono Lake Kutzadika'a Tribe and CalFire on the Numu Tuna'e burn on City property in the Mono Basin to generate high-quality basket weaving material.



FINANCIAL COMMITMENTS

Monetary Support

LADWP's commitments in the Inyo County include:

- \$5.6M in annual direct payments as part of the Agreement provisions to fund the Water Department, park operations, general financial assistance, and environmental maintenance assistance.
- \$20M annually in property taxes (about 50% of the county's total tax revenue).
- 180,000 AF of water annually (over \$124M value) to Owens Valley environmental projects, agriculture, tribal lands, and Owens Lake dust mitigation project:
- Owens Lake Dust Mitigation, 70,000 AFY (\$48M)
- Irrigation and Stock water, 66,500 AFY (\$46M)
- Environmental Projects, 38,000 AFY (\$26M)
- Indian Lands, 5,500 AFY (\$3.8M)
- Approximately 2,000 acres of land leased to Inyo County for parks, equipment yards, landfills, and other uses at an average monthly cost of \$2.5 per acre per month.
- 200,000 acres of land leased in Inyo County for agricultural enterprises at an average monthly rate of \$5.24 per acre per year.
- Water supplied to the towns of Big Pine, Independence, Lone Pine, and Laws at no charge.
- Subsidized wastewater treatment for Independence (currently undergoing revision).
- Tens of thousands of dollars annually in financial support to Inyo County schools, hospitals, community groups, youth organizations, etc.
- About \$6M annually on local purchases and an annual Owens Valley payroll of about \$60M.
- Labor and equipment to fight fires and maintain fire breaks around towns, maintain roads, flood protection, and other public services.
- Providing both funding and labor to support other projects and programs such as off-road vehicle management planning, fish and wildlife management programs, noxious plant control, mosquito abatement, local concerts and events, the Bishop Creek Water Association, and the Big Pine Water Association.

The financial assistance to Inyo County is the result of Inyo/LA Water Agreement. LADWP doesn't provide any financial assistance to Mono County.

Economic Development

As the largest taxpayer in both Inyo and Mono Counties, the City owns about 314,000 acres of land in the Eastern Sierra Watershed, administered by LADWP.

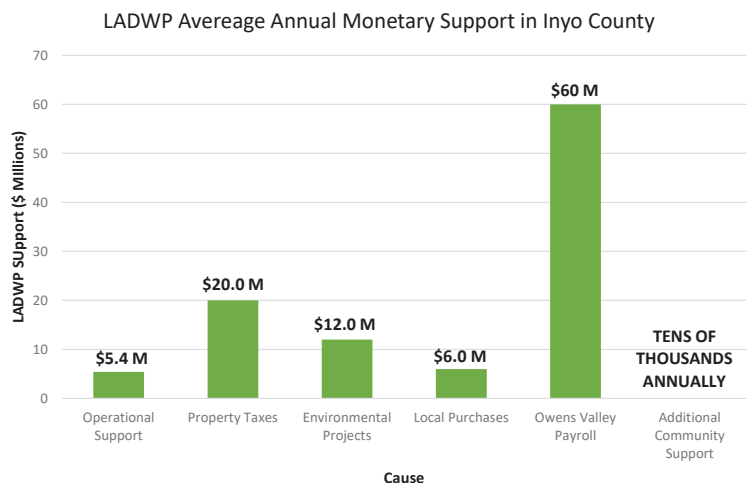
Over the past seven decades, it has been the policy of LADWP to make its lands available for use by local farm and ranch operators, pack outfits, businesses, schools, city and county governments, state and federal agencies, and college and university researchers, as well as the many thousands of tourists who visit the Eastern Sierra each year.

LADWP property is leased for livestock grazing and alfalfa farming with the agreement that at least 75 percent of the property remain open for public access, such as hunting, fishing, water sports, hiking, bike riding, photography, painting, bird watching, wildlife viewing, etc. Overnight camping is restricted to developed campgrounds.

LADWP also leases property for airports, fair grounds, public golf courses, city parks, campgrounds, museums, visitor centers, parking lots, and radio, television, and telecommunication facilities (cell towers, relay stations, microwave stations, etc.).

In addition to leases, LADWP has sold numerous land easements to the Counties for roads, pipelines, and facilities; to the State of California for highway improvement projects; and to the City of Bishop for road drainage, water, and sewer facilities. Property has also been sold to Inyo County for a Senior Citizens Mobile Home Park, a low-income housing project, light industrial uses, school and pre-school expansion, a hospital skilled nursing facility and expansion of the existing hospital, and for sewer ponds for the local Indian Reservation.

Additionally, permits are issued to film companies for the production of commercials, documentaries, and feature-length films, creating an economic boost for the local communities.

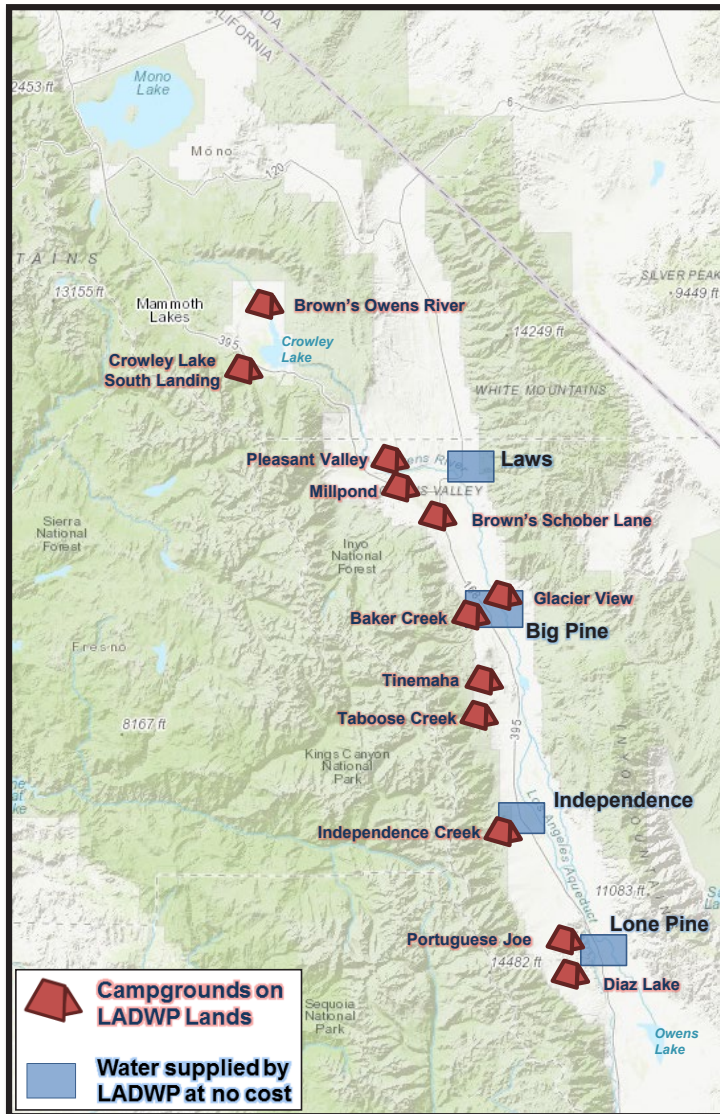


Following is a short list of public benefits provided by the LADWP in Inyo and Mono Counties:

Campgrounds on LADWP lands:

- Diaz Lake Campground
- Portuguese Joe Campground
- Independence Creek Campground
- Taboose Creek Campground
- Tinemaha Campground
- Baker Creek Campground
- Glacier View Campground
- Brown's Schober Lane Campground
- Millpond Recreation Area and Campground
- Pleasant Valley Campground
- Crowley Lake South Landing Campground

- Brown's Owens River Campground
- Bishop Golf Course
- Mt. Whitney Golf Course in Lone Pine
- Whitmore Sports Complex
- Land for Black Rock and Fish Springs Fish Hatcheries leased to Dept. of Fish and Game for hatcheries
- Water released into Buckley Ponds east of Bishop for fishery and wildlife habitat
- Land in Independence and Laws provided for museums
- Land leased in Bishop, Big Pine, Independence Lone Pine and other locations for parks
- Woodlots placed on LADWP land in Lone Pine and Independence
- Land for the Lone Pine Sports Complex, as well as workers, equipment and materials for complex construction



In 1993, LADWP implemented a cooperative project between the DWP, Mono County, and Department of Fish & Game, which provides managed flow releases to restore the riverine-riparian ecosystem in the Owens River Gorge, between Crowley Lake and Pleasant Valley Reservoir.

LADWP staff biologists take lead in efforts to control an invasive noxious plant, tall whitetop (*Lepidium latifolium*). Control efforts are coordinated with the Inyo-Mono Agricultural Commissioner.

In 1996, fifteen miles of fence, with walk-in fisherman access points, constructed along the upper Owens River above Crowley Lake for the protection of the river bank and enhancement of river-bank vegetation.



WATER RIGHTS

Background

The City of Los Angeles has water rights on the majority of streams flowing from the Eastern Sierra Nevada Mountains. In October 1905, Fred Eaton filed a notice of water appropriation at Inyo County Recorder's Office, claiming all the water, both surface and underflow, from Owens River in the amount of 1,250 cfs. Eaton later transferred this water right to the City of Los Angeles to divert the flow from Owens River to the Los Angeles Aqueduct for export to the City of Los Angeles for municipal purposes.

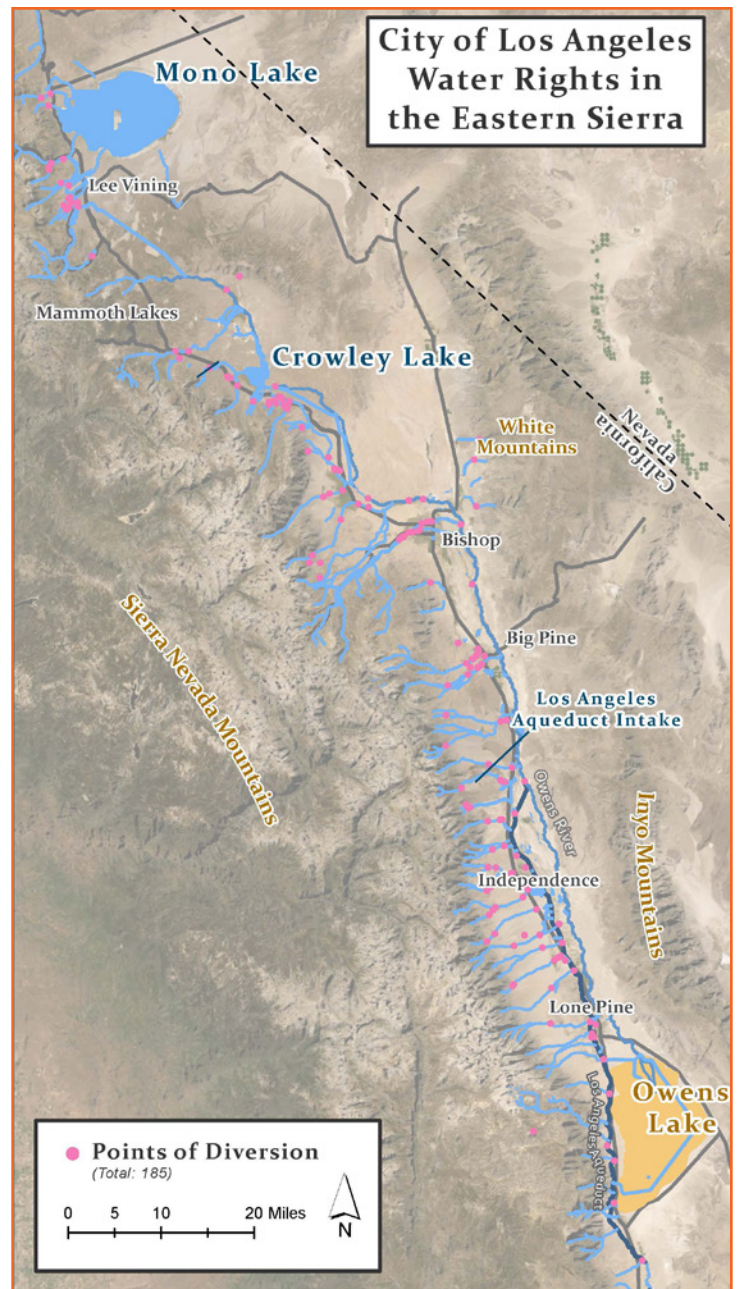
LADWP is responsible for protecting and administrating the City's water rights including water rights in the Eastern Sierra. Of the total 186 water right holdings in the Owens Valley and Mono Basin, 169 are pre-1914 water rights, and 17 are post-1914 licenses. The pre-1914 water rights holdings precede the formation of the state agency that later became the SWRCB and therefore under court jurisdiction. All post-1914 licenses must comply with SWRCB's license requirements. The table below lists the City's water rights in the Eastern Sierra including Mono Basin, Long Valley, and in Owens Valley upstream and downstream of the Los Angeles Aqueduct intake from Owens River. According to Section 673-b of the Los Angeles City Charter, any sale, lease, or disposal of water rights requires the consent of two-thirds of the registered voters of the City.

County	Basin	Pre-1914 Acre-Feet per Year	Post-1914 Acre-Feet per Year
Mono	Mono	79,700	29,300
	Long Valley	157,900	0
Inyo	Round Valley	85,200	120
	Owens Valley (North of LAA Intake)	272,000	120
	Owens River (at LAA intake)	905,000	-
	Owens Valley (South of LAA Intake)	461,800	120
Total		1,962,000	30,000

Mill Creek

Mill Creek, located north-west of Mono Lake, is a part of the Lundy Reservoir watershed. The average Mill Creek runoff is 21,000 AFY (average monthly flow rate of 30 cfs).

Southern California Edison (SCE) currently owns and operates the Lundy Power Plant to generate



hydroelectric power. Water released from the tailrace of the power plant can either be returned to Mill Creek via a return ditch or be diverted to Wilson Ditch.

A 1914 Decree by the California State Superior Court adjudicated the flow in Mill Creek among various water right holders. The main water right holders are Mono County (Conway Ranch) and the City of Los Angeles (Thompson Ranch).

Due to the facility's limitations, SCE was unable to release water to water rights holders according to the 1914 Decree. In 2019 SCE completed upgrades to the return ditch, which allowed it to follow the Decree when releasing water from Lundy Plant. In a letter to LADWP, United States Forest Services (USFS), and BLM, dated November 2020, the Mono County Board of Supervisors express concern about the operation of flows to Mill Creek, and requested that some flows instead be



Mill Creek Return Ditch

diverted flow back to Mill Creek, allow more flow to Wilson Creek. LADWP responded in January 2021 stating that LADWP disagrees with some of the facts stated in the letter but is evaluating the requests.

Illegal Diversions

Illegal diversions have been an issue with the City's water rights in the past. Two such incidents include diversion from Pine Creek, a fully allocated creek in which LADWP owns all water rights on. In 2007 LADWP filed a complaint with SWRCB against the 40 Acres Home Owner's Association, who believed they have a pre-1914 right to divert 2.5 cfs off Pine Creek. During that time LADWP's security around its diversion structure was being regularly vandalized, resulting in approximately \$550,000 in annual replacement costs and a loss of 800 AFY. LADWP and 40 Acres Home Owner's Association are now on better terms and the vandalism has ceased.

A second illegal diversion is on Pine Creek with the Vogets, owners of a 120-acre Ranch located west of Round Valley. In 2007, LADWP filed a protest against the Vogets, owners of a 120-acre ranch located West of Round Valley, who were diverting approximately 2.9 cfs off Pine Creek. This amount of water is equivalent to 2,000 AFY. LADWP owns the majority of riparian water rights on Pine Creek, though the Vogets claim to have an existing pre-1914 water right. There has yet to be a finding on the protest to SWRCB.

Annual License and Permit Fee and Reporting

Every year LADWP is responsible for the payment of the annual license and permit fees for all post-1914 water rights. The invoices for the payment of fees are received every November and LADWP must make the payment within 30 days or additional late fees and penalties may be incurred. SWRCB is responsible for sending the bill; however, payments are made to the Department of Tax and Fee Administration.



40 Acres Diversion Structure

In addition, LADWP is responsible for filing Annual Water Diversion and Use Reports. LADWP has 17 Licensee Reports and 169 Supplemental Statements, both due annually, on February 1. Each report requires monthly flow diversion data, calibration data of measuring station used, type of diversion, if any water conservation efforts were made, and other historical data regarding the diversion point. SWRCB changed the reporting schedule in 2023, so that reports would be made for the previous hydrological year (October 1 – September 30) versus calendar year as done previously. The deadline was also moved up from April 1 for Licensee Reports and July 1 for Supplemental Statements, to everything being due February 1.

Bouquet Reservoir

LADWP operates Bouquet Reservoir as a regulatory

reservoir along the LAA since 1932 as it transports water from the Eastern Sierra to the City of Los Angeles. LADWP releases runoff from the watershed upstream of the reservoir downstream according to an agreement with United Water Conservation District (UWCD).

A 1978 Agreement, replacing the original 1932 Agreement allowed for more recreational use of water during the summer months for cabins and residences along Bouquet Canyon, as well as USFS campgrounds. LADWP and UWCD agreed to schedule water releases for the summer months to provide significant streamflow for public recreational use, for fish stocking by the California Department of Fish and Wildlife (CDFW), and for fire protection. Based on this Agreement, releases were exchanged to be 1 cfs (2 acre-feet per day) October 1 through March 31, and 5 cfs (10 acre-feet per day) April 1 through September 30.

In 2005, LADWP informed UCWD that it would reevaluate the appropriateness of 10 acre-feet per day flow release from Bouquet Canyon Reservoir to Bouquet due to the releases causing flooding on Bouquet Canyon Road. UCWD acknowledged this change in a letter dated March 22, 2015. LADWP changed operations to continue releases but not to the agreed amounts of Agreement No. 10162. Currently, LADWP operates Bouquet Canyon Reservoir to ensure public safety. When water starts to accumulate on the Bouquet Canyon Road, LADWP field staff decreases releases into Bouquet Creek to avoid flooding of the road. Once road conditions improve, water release is increased again. This practice is continued today.

In September 2017, LADWP received a letter from SWRCB whereby LADWP was directed to implement



a change, within 30 days of receipt of the letter. In response, LADWP filed a new water rights application to hold runoff water from Bouquet Canyon watershed in Bouquet Reservoir before releasing downstream. SWRCB is currently reviewing LADWP's application.

In February 2019, a couple of well owners in the area filed protests against LADWP's application. Subsequently, in March 2019, the California Department of Fish and Wildlife (CDFW), also filed a protest against the application. LADWP has been working with the Trusts and CDFW to resolve their protests. LADWP is keeping SWRCB informed of the progress. In May 2022, LADWP provided SWRCB with an update to the water availability analysis needed for its water right application. LADWP is waiting to hear back from SWRCB on the progress of the application.

Emergency Regulation for Measuring and Reporting the Diversion of Water (SB-88)

Senate Bill 88 (SB-88) was enacted in 2015 and authorized the SWRCB to adopt a regulation imposing requirements for water rights holders and claimants who divert 10 AFY. The SWRCB adopted an emergency regulation in 2016 and notable provisions include:

- Licensee Reports of water diversion and use are due annually by April 1st (formerly due by July 1st).
- Supplemental Statements of water diversion and use must be filed annually by July 1st (formerly filed triennially, for 3-preceding years).
- Protocols for Measurement Method (to measure water diversions, other than through a measuring device at each authorized point of diversion), Alternative Compliance Plan (where strict compliance is not feasible), and Request for Additional Time (not to exceed 24 months, subject to approval).
- Accuracy standard, measurement frequency, and effective date dependent on the amount of authorized



diversion (January 1, 2017, is the deadline applicable to most LADWP-held water rights). A Report of Water Measuring devices, including certification of accuracy, has been incorporated into the annual water diversion and use report.

- Telemetry requirements to provide telemetered diversion data via a public website, on at least a daily basis by January 1, 2020, apply to diverters under certain circumstances.
- 5-year renewals, at minimum, are required for measurement device calibration, Alternative Compliance Plans, and adopted Measurement Methods.

LADWP has a vast portfolio of water rights and assessed approximately 300 existing measurement stations

generally used to compile data for water diversion and use reports. Reporting guidelines have been updated for conformance to the new requirements and LADWP has adopted Measurement Methods when needed. Alternative compliance plans were developed for diversions where strict compliance with the new requirements is not feasible, such as spreading diversions, which are infrequent and typically remotely located. Requests for Time Extensions were filed last year for fourteen water rights that were not able to be addressed by the original July 1, 2017 deadline. LADWP has calibrated two measuring stations and is working on installing and calibrating the remaining twelve water rights that have not yet been addressed.



Snow Survey at Rock Creek Basin

SUSTAINABLE GROUNDWATER MANAGEMENT ACT

SGMA was enacted in 2014 to create a framework intended to prevent groundwater basins from experiencing undesirable effects to include decreasing groundwater levels, storage reduction, seawater intrusion, degraded quality, land subsidence, and surface water depletion.



As part of SGMA, adjudicated basins are prioritized as California Department of Water Resources (CDWR) as very low, low, medium, or high risk based on eight criteria relevant to the sustainability of the basin in question. Basins prioritized as medium or high are required to form a Groundwater Sustainability Agency (GSA) and develop and adopt a Groundwater Sustainability Plan (GSP). Basins were prioritized in 2015 and are reassessed when Bulletin 118 is updated.

To ensure Water Code requirements are met in high and medium priority groundwater basins, GSAs were required to be formed by July 1, 2017. GSAs are required to develop and implement Groundwater Sustainability Plans (GSPs) or Alternatives to GSPs by January 2022 to meet long-term groundwater basin sustainability goals.

The CDWR initially prioritized OVGB as a medium-risk basin in 2015. All California groundwater basins were reassessed in 2019 by CDWR in response to requests from agencies to the 2018 draft prioritization that was performed due to the 2016 interim update of Bulletin 118. The re-assessment of the basin priority was finalized in 2019 and designated the OVGB as a low priority groundwater Basin.

It is codified in SGMA that portions of the Owens Valley Groundwater Basin (OVGB) that are managed by the Water Agreement areas treated as an adjudicated basin and therefore NOT subject to SGMA (CWC §10720.8). The areas in OVGB which are not managed under the terms of the LTWA, however, are subject to SGMA and prioritization, by the CDWR.

Inyo County, Mono County, City of Bishop, and 10 other entities formed a GSA, namely the Owens Valley Groundwater Authority (OVGA). OVGA received a \$715 grant from CDWR to prepare a GSP for OVGB and subsequently hired Daniel B. Stephens & Associates to prepare the GSP.

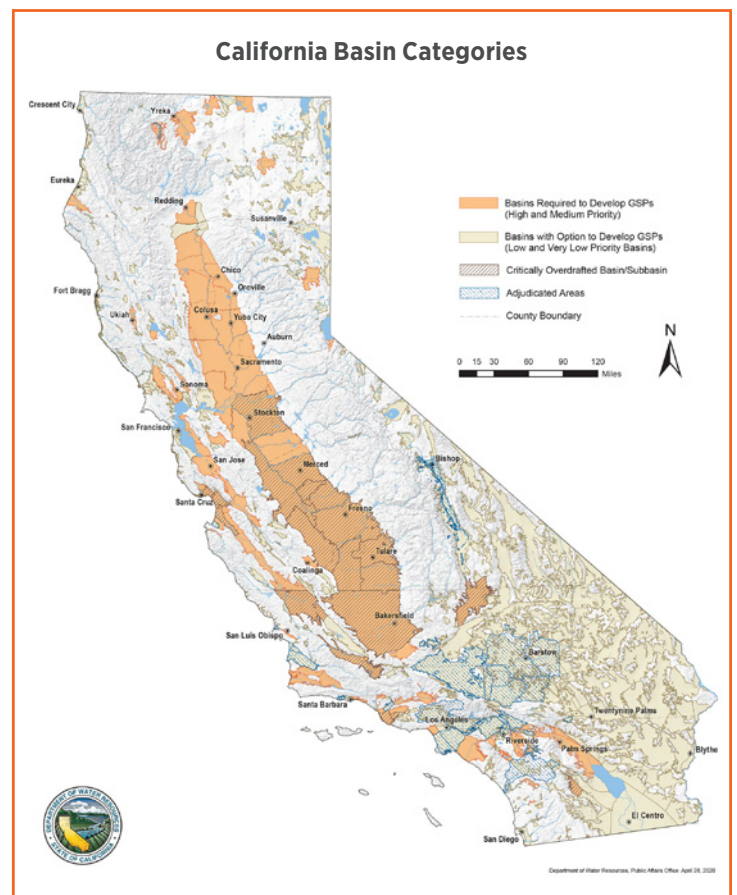
LADWP's primary interest in the non-adjudicated portion of the OVGB is Owens Lake. Groundwater development at Owens Lake is being assessed as part of the Owens

Groundwater Development Program, currently under development. Any future groundwater pumping by LADWP at Owens Lake would probably be subject to SGMA and the GSP developed by the OVGA.

While the existence of a GSA and development of a GSP are no longer required because of the low priority of the OVGB, the OVGA has chosen to move forward with the development of a GSP for the basin, which will be adopted and enforced by agencies that choose to remain as members of OVGA. However, so far, several of the Community Service Districts have decided to terminate their membership to the OVGA.

OVGA membership has been in flux, with Starlite CSD withdrawing in March 2019, Keeler CSD in October 2019, Tri-Valley GWMD, Sierra Highlands CSD, and Wheeler Crest CSD withdrawing membership in February 2020, Eastern Sierra Community Service District in July 2020, and Mono County in July 2022. Currently, the members are Big Pine CSD, County of Inyo, and Indian Creek Westridge CSD.

The OVGA adopted the final GSP for OVGB in January 2022. In August 2022 the OVGA Board approved the Owens Valley Groundwater ordinance, requiring registration of all extraction wells within Owens Valley and the OVGA boundary. The OVGA also requested Inyo County to submit all well drilling permits to OVGA for review.



Mono Lake Elevation (feet)		Allowable Export (AFY)
Transition Phase (until Mono Lake Elevation reaches 6,391 ft. amsl)	<6,377	0
	6,377 - 6,380	4,500
	6,380 - 6,391	16,000
Post - Transition Phase (begins when Mono Lake Elevation reaches 6,391 ft.)	<6,388	0
	6,388 - 6,391	10,000
	> 6,391	All available water in excess of the amount needed to comply with the requirements of the Amended License

MONO LAKE

Mono Basin Restoration Program

In 1941, LADWP extended the LAA into the Mono Basin, allowing access to up to additional 100,000 AFY. By diverting four of Mono Lake’s tributaries, Lee Vining, Parker, Walker, and Rush Creeks, into the expanded Grant Lake Reservoir, LADWP was able to export an average of approximately 91,000 AFY from 1970 until 1985 when a temporary restraining order requiring a minimum in-stream flow of 19 cfs in Rush Creek reduced the amount of water available for export. These diversions and exports dried-up the four lower reaches of the tributaries and caused the elevation of Mono Lake to drop approximately 40 feet.

During the litigation period of 1990-95, LADWP did not export any water from Mono Basin. By 1994, after several lengthy litigations between the LADWP and several environmental advocacy groups, the SWRCB adopted Decision 1631 and Orders 98-05 and 98-07. In addition to requiring restoration of the Mono Basin ecosystem, Decision 1631 severely curtailed the LADWP’s exports to a maximum value of 16,000 AFY. Ecosystem restoration in the Mono Basin includes improving and monitoring waterfowl habitat, riparian areas, and the fisheries within the four tributary streams.

The restoration and monitoring program, defined through a compilation of documents, details specific provisions for hiring outside consultants to monitor the Mono Lake limnology, the four streams tributary to Mono Lake from which LADWP diverts water, and the fresh water fisheries in those same tributaries. Additionally, LADWP was ordered to improve the Mono Basin operational facilities and perform some “on the ground” activities to improve the Mono Basin ecosystem. LADWP is also required to monitor waterfowl

populations, and the SWRCB allows this work to be performed by LADWP staff.

Major Issues/ Current Status

Stream Management & Settlement Agreement

LADWP is working closely with stream scientists, the SWRCB, and other interested parties to restore the streams and maintain them in a healthy and sustainable condition. In addition to raising and maintaining the elevation of Mono Lake to 6,391 feet AMSL, the parties are interested in other factors including Grant Lake elevation, the Upper Owens River fishery, and flood control that all hinge on how the streams are managed. This process needs to be considered in a comprehensive manner as each item is interrelated.

Pursuant to the SWRCB Order 98-05 (after 12 years of studies and monitoring funded by LADWP), in April 2010, the SWRCB appointed Stream Scientists submitted their analysis and recommendations for new flow and monitoring requirements in the Mono Basin. In response, in July 2010, LADWP submitted a “Feasibility Report” analyzing the feasibilities of implementing the recommendations with respect to technical and financial impacts as well as reasonableness.

The discussions related to the Report continued from February 2011 until September 2013 resulting in a settlement agreement between the parties. The settlement agreement specified flows in the streams that provide hydrologic variation which advances geomorphic and other ecological processes necessary for stream restoration. Although these flows may also incidentally cause adverse impacts to the channel form, water quality, fisheries, or other resources of a given creek, such impacts are found to be non-significant under CEQA, and LADWP will not be liable for any additional



Mono Basin Fish Monitoring



requirement, including the release of flow or monetary expenditure, to remedy such impacts under any of the authorities that the Board administers.

Through the development of the settlement agreement described above, the legal assurances in the settlement agreement provided legal assurances that LADWP would not be responsible for the impact of flows. These assurances were one of the requirements for the City during the settlement discussions.

License Amendments

In 2018, after extensive discussions with the SWRCB and Mono Basin Parties, SWRCB agreed that LADWP's path to an adequate CEQA document would incorporate analysis of the proposed flows in the license amendments. LADWP agreed to conduct extensive flow studies and incorporated the findings into a degradation analysis memo included as an attachment to the updated MND, which now describes the entirety of the project as the "Mono County Streams License Amendments Project".

At the April 27, 2021 Board Meeting, the LADWP Board of Commissioners approved the above Project and adopted the MND in accordance with CEQA. Under the proposed Project, LADWP will implement the proposed Amended Water Rights Licenses 10191 and 10192 (licenses) under the guidance of the SWRCB in the Mono Basin. SWRCB issued the licenses on October 1, 2021.

In addition to the Grant Lake Outlet Project, the amended license stipulates additional LADWP financial commitments of a one-time \$775,000 payment for the Stream Restoration and Waterfowl Habitat Restoration Programs, and an annual payment of \$575,000 for stream, waterfowl, and limnology monitoring. LADWP shall also provide \$15,000 when photographic surveys are performed. These payments are to be made to the Monitoring Administration Team via the National Fish and Wildlife Foundation. The amended license also requires LADWP complete and distribute the Mono Basin Operations Plan (MBOP), Annual Operations Plan (AOP), a monthly report, and a quarterly report.

Grant Lake Reservoir Outlet Modification Project

The project to increase the capacity of the Grant Lake Reservoir (GLR) spillway initially began planning in 2010 but was stalled by the License Amendments process. The project was revitalized once the parties reached an agreement on the amendments. The license issued in 2021 stipulates the project is to begin within 12 months of the completion of the CEQA document. Construction scheduled to begin early 2024.

The modification will allow GLR to reliably deliver the stream ecosystem flows to downstream waterways. Currently, the GLR outlet is an uncontrolled gravity-flow spillway with the intake at 7,130 ft AMSL and a capacity of 380 cfs, though it has carried up to 620 cfs. The upgrade will increase operational flexibility and capability by adding two 10-ft wide gates capable of operating between 7,130 and 7,118 ft AMSL.



PUBLIC OUTREACH

As a member of the Eastern Sierra community, LADWP is dedicated to giving back to the region through economic development, community investments, and focusing on environmental stewardship. While doing this, we ensure that we engage directly with our partners and communicate our investments in the community through public outreach. Over the last several decades, LADWP increasingly grew our partnership with almost 100 organizations annually in Inyo and Mono counties by supporting their events, community programs, educational activities, and workforce development opportunities.

To support economic development in the region, LADWP continues to build our workforce in the Owens Valley by providing hundreds of jobs. To promote our employment opportunities, we conducted our fourth virtual job fair for Owens Valley residents in spring 2022 to attract qualified employees.

In 2020, we launched the “LADWP in the Eastern Sierra” website, ladwpeasternsierra.com. The site is a resource for information about LADWP operations, projects, and programs in the Eastern Sierra. Residents, customers,



and visitors now have access to news, facility, and land updates as well as information for Owens Valley electric customers.

Following the website launch, in 2021 we released the first “LADWP in the Eastern Sierra” community newsletter, that brings information to subscribers about LADWP operations, projects, and programs in the Eastern Sierra. Residents, customers, and visitors have more access to news, and timely facility and land updates than ever before.



LADWP partners with six schools in the Owens Valley from Round Valley down to Lone Pine through our Adopt-A-School program. Adopt-A-School is a special educational partnership program based on “people to people” relationships between LADWP employees and Owens Valley School Districts. During the program, LADWP employees volunteer at schools in activities ranging from garden clubs, nature walks, water quality testing in the field, and career days. This year the schools and LADWP employees finally met in person during outdoor field trips and presentations.

When the COVID-19 pandemic forced closures of indoor facilities for entertainment and exercise, the Eastern Sierra saw an uptick in visitors and local residents taking advantage of safer outdoor activities. The aftermath of the increase in recreation left some areas in poor condition. To help keep the region safe and clean, LADWP partners with local groups to host safe clean-up events in the Upper Owens River and the Lower Owens River. The 3rd Annual Upper Owens Stewardship event will take place in Spring 2023.







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