Laguna Beach County Water District

2020 Urban Water Management Plan & Water Shortage Contingency Plan

June 2021

Karen E. Johnson, Water Resources Planning

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LAGUNA BEACH
COUNTY WATER DISTRICT

2020 Urban Water Management Plan and Water Shortage Contingency Plan

June 2021

Prepared by
Karen E. Johnson, Water Resources Planning

Contact Sheet

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Date of Public Hearing:	June 17, 2021
Plan Adoption Date:	June 17, 2021
Resolution Number:	864, 865, 866
Plan Submitted to Department of Water Resources:	by July 1, 2021
The water supplier is a:	Special District – retailer
Utility services provided by the water supplier include:	Water
Public Water System Number:	3010017
Is the agency a Bureau of Reclamation Contractor?	No
Is the agency a State Water Project Contractor?	No
Plan Preparer:	Karen E. Johnson, Water Resources Planning kejwater@aol.com

Laguna Beach County Water District

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Laguna Beach County Water District

2020 Urban Water Management Plan and Water Shortage Contingency Plan

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Acronyms and Abbreviations

Act	Urban Water Management Planning Act
afy	acre-feet per year
AMI	Advanced Metering Infrastructure
Basin	Orange County Groundwater Basin
Bay-Delta	San Francisco Bay – Sacramento River-San Joaquin River Delta
BEA	Basin Equity Assessment
BMP	Best Management Practices
BPP	Basin Production Percentage
CalWEP	California Water Efficiency Partnership
CDR	Center for Demographic Research, Cal State University Fullerton
CMWD	Coastal Municipal Water District (precursor to LBCWD)
CVP	Federal Central Valley Project
Delta	Sacramento River-San Joaquin River Delta
DMM	Demand Management Measures
DRA	Drought Risk Assessment
DWR	California Department of Water Resources
EBSD	Emerald Bay Service District
ETWD	El Toro Water District
ERP	Emergency Response Plan
ESA	Endangered Species Act
FY	fiscal year
gpcd	gallons per capita per day
gpm	gallons per minute
GWRS	Groundwater Replenishment System
HMP	Hazard Mitigation Plan
IRWD	Irvine Ranch Water District
IWRMP	Integrated Water Resources Management Plan
LAFCO	Orange County Local Agency Formation Commission
LBCWD	Laguna Beach County Water District
mgd	million gallons per day
MWDOC	Municipal Water District of Orange County
MOU	Memorandum of Understanding
MWD	Metropolitan Water District of Southern California
OCSD	Orange County Sanitation District
OCWD	Orange County Water District
PFAS	per- and polyfluoroalkyl substances
RA	Replenishment Assessment
SB X7-7	State Water Conservation Act of 2009
SCADA	Supervisory Control and Data Acquisition System
SCWD	South Coast Water District
SOCWA	South Orange County Water Authority
SWP	State Water Project

SWRCB	California State Water Resources Control Board
UWMP	Urban Water Management Plan
WSAP	MWD's Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WSDM	MWD's Water Surplus and Drought Management Plan
WTP	water treatment plant
WUE	water use efficiency

Laguna Beach County Water District

Urban Water Management Plan & Water Shortage Contingency Plan

Executive Summary

Background and Purpose

The Urban Water Management Planning Act (UWMP Act) requires water suppliers that provide over 3,000 acre-feet per year or have over 3,000 connections to prepare and submit to the State Department of Water Resources (DWR) an Urban Water Management Plan (UWMP) every five years. Laguna Beach County Water District's (LBCWD or District) UWMP has been prepared in accordance with the UWMP Act, as defined by the California Water Code Sections 10610 through 10656, and the Water Conservation Act of 2009. There are very specific requirements for the UWMP and Water Shortage Contingency Plan (WSCP) provided in DWR's *Urban Water Management Plan Guidebook 2020* (Guidebook); this report has been structured for compliance with the UWMP Act and Guidebook.

Significant legislative changes to the Act since the 2015 UWMP include the addition of or modification to the following requirements.

- Five consecutive dry year water reliability assessment instead of three years
- Drought risk assessment for years 2021 through 2025
- Seismic risk to water system facilities and mitigation plan
- Readily obtainable information on energy use for the water system
- Five years of water loss audit reports
- Water Shortage Contingency Plan (WSCP) with greatly expanded requirements including a new Annual Assessment and the District's ability to respond to six supply shortage levels
- Consistency between the UWMP and the Sustainable Groundwater Management Act
- Provision of a lay description of the UWMP and WSCP which this Executive Summary provides

In addition to compliance with the State mandate, this document can serve as a foundational document and primary source for integrating water and land use planning at the District and the City of Laguna Beach within the District. This is accomplished in developing Water Supply Assessments and a Written Verification of Water Supply for new development in compliance with SB 610 and SB 221. Laguna Beach can use the UWMP as they update its general plan just as the District incorporates the general plan in the development of its water demand forecast.

This 2020 UWMP presents a description of historical and projected water use, conservation targets and water use efficiency activities to maintain and further reduce water use, water supply sources, a comparison of water supplies and water demands during normal, single dry, and multiple dry years, contingency planning for water shortages, and UWMP coordination and adoption details.

The WSCP, which is a stand alone product located here as Chapter 8, provides for an Annual Assessment of supply availability. It also identifies shortage response actions the District would take in response to six standard water shortage levels.

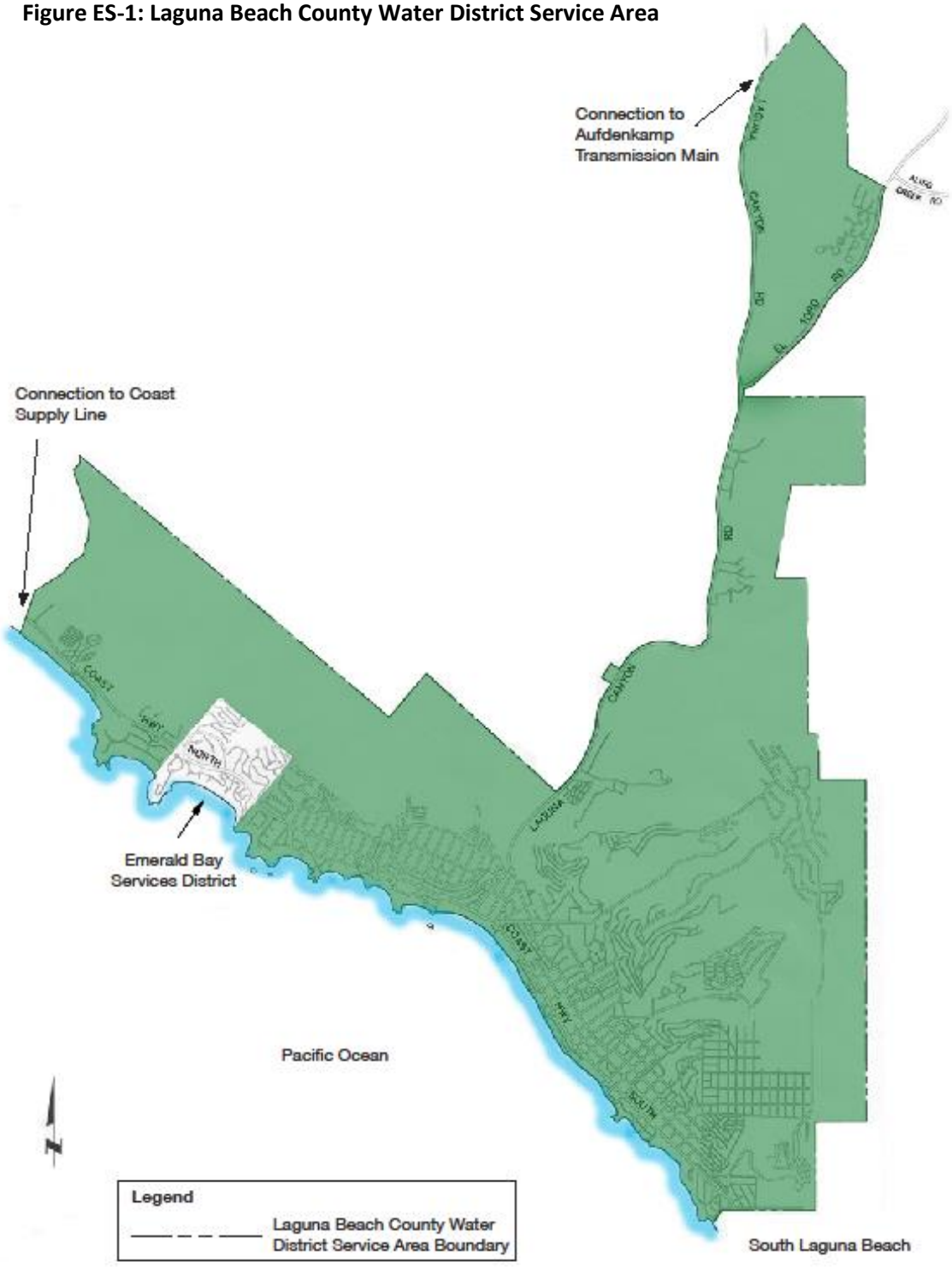
Service Area Description

The Laguna Beach County Water District (District or LBCWD) was incorporated as a County Water District in 1925 and operates as a Special District under the Water Code Section 30000 et. seq. The Laguna Beach City Council members are sworn into office as the Ex-Officio Board of Directors (Board). A five-member Water Commission is appointed by the Board to serve in an advisory capacity.

The District serves potable water to a year-round population of 18,401 people within the City of Laguna Beach, including small areas of unincorporated lands, through 8,703 service connections. The population in the summer months is significantly higher. The population in 2045 is projected to be 18,410. The service area is presented on Figure ES-1. The District service area is largely built out with primarily single family homes, multi-family homes and vacation rentals. The service area has a vibrant downtown business district, neighborhood commercial uses along Coast Highway, and professional office buildings and additional retail uses scattered throughout the service area. The District does not serve the southern portion of Laguna Beach. The District sells potable water and provides contract services to Emerald Bay Service District (EBSD), a community services district, under a service contract.

The District's service area of almost 8.5 square miles includes northern Laguna Beach with a portion of Crystal Cove State Park, the main urbanized area of Laguna Beach not including the south end of the city, and along Laguna Canyon Road north to Sycamore Hills neighborhood off El Toro Road. The service area is characterized by gently rolling areas to steep hillsides climbing from sea level to 1,000 feet above sea level. The service area is edged to the north and east by the Laguna Greenbelt, which encompasses 10,000 acres of largely undeveloped lands, separating the service area from other communities in the county.

Figure ES-1: Laguna Beach County Water District Service Area



Climate plays an important role in the demand for water within the District's service area. Temperature, rainfall, and wind are typical of the Mediterranean climate characterized by mild winters, warm summers, moderate rainfall and general year-round sun (with the exception of coastal morning fog during the spring and summer months). Temperatures in Laguna Beach average 62° Fahrenheit year-round, 69° Fahrenheit during summer months, and 55° Fahrenheit in the winter. The annual standard average evapotranspiration rate is 47.56 inches. Rainfall in the service area impacts water demands but it does not influence the imported water supplies which originates in northern California. Climate change is anticipated to result in higher temperatures overall in the service area with greater and more extreme weather fluctuations and events such as droughts and heat waves.

Water Demand

Table ES-1 presents water demand projections through 2045 for the District service area and sales to EBSD. Minor increases in water demands are anticipated based on the most recent Laguna Beach general plan land uses and demographic data from the Center for Demographic Research at California State University Fullerton. The projected change in population within the District service area between 2020 and 2045 is nine; development potential in the service area is very limited.

Historical annual sales to EBSD do not vary greatly. Year 2020 sale of 272 acre-feet was assumed for the future. Municipal Water District of Orange County (MWDOC), the wholesaler providing imported water to LBCWD, has incorporated into its water demand forecast for imported water users an increase of six percent during a dry year to reflect climate change.

Table ES-1: Water Demand, Actual and Projected

	2020	2025	2030	2035	2040	2045
Laguna Beach CWD	3,215	3,405	3,458	3,431	3,415	3,392
Emerald Bay Service District	272	272	272	272	272	272
TOTAL	3,487	3,677	3,730	3,703	3,687	3,664

NOTE: Data from UWMP Tables 4-1 and 4-2. Demands provided by MWDOC

Conservation Targets

In 2009, the Water Conservation Act (SB X7-7) set a statewide goal of a 20 percent reduction in per capita water use by 2020. To help the State achieve the 20 percent reduction in water use, each urban water retailer adopted an interim per capita water use target for its service area for 2015 and a final target for 2020. The District customers responded positively to the call for

conservation, achieving its 2015 and 2020 targets. The baseline per capita and the 2015 and 2020 gallons per capita per day (gpcd) water use targets are as follows.

- 10-year baseline daily per capita water use was 202 gpcd
- 2015 target was 182 gpcd and actual water use was 169 gpcd
- 2020 target was 162 gpcd and actual water use was 156 gpcd

Variable weather, drought conditions, increased cost of imported water, and economic conditions play a role in the year-to-year demand fluctuations, however, the overall decline in water use can largely be attributed to active demand management, water efficiency programs, and customer response to drought. The 2020 water use was significantly less than that required to meet the target. The District remains committed to its conservation program to maintain and further reduce water use.

Water Supplies

The District provided 3,487 acre-feet of water in its service area in 2020. The District's current water needs are met by a combination of recently reacquired groundwater and imported water from MWDOC. Groundwater is pumped from the Orange County Basin under normal conditions and conveyed through the City of Newport Beach to the northwestern service area along the coast. Due to water quality regulations regarding per- and polyfluoroalkyl substances (PFAS), groundwater production was greatly reduced starting in early 2020 affecting Newport Beach's ability to convey this supply to the District.

Imported water is provided by Metropolitan Water District of Southern California (MWD) through MWDOC. MWD's water supply originates from two principal sources - the Colorado River via the Colorado River Aqueduct and the Feather River watershed/Lake Oroville in Northern California through the State Water Project (SWP) which travels through the Sacramento River–San Joaquin River Delta (Delta). Imported water purchased by LBCWD is treated at MWD's Diemer Water Treatment Plant in Yorba Linda. Table ES-2 presents the water supplies available to the District.

Table ES-2: Water Supply Availability

Supply	Reasonably Available Volume
Groundwater	2,025
Purchased Surface Water from MWD	2,920
Total	4,945
NOTES: Groundwater based on entitlement. Surface water reflects past 10-year average use.	

Water Supply Reliability and Drought Risk Assessment

Constraints on water sources and expected water service reliability for a normal year, single dry year, and five consecutive dry years projected for 2025 through 2045, were analyzed to determine the reliability of the District's water supplies. The newly required Drought Risk Assessment (DRA) offers an opportunity to test the District's near-term supply reliability by assuming the next five consecutive years are dry.

Supply Reliability

Although the District's supplies are very reliable, various factors have the potential to affect the availability and reliability of the imported supplies such as Delta challenges and hydrological water supply conditions. About 30 percent of Southern California's water supply moves from Northern California through the Delta to pumps in the south Delta. Endangered species protection and conveyance needs in the Delta have resulted in operational constraints to pumping. The Delta's declining ecosystem and the difficulties operating the SWP system has led to factors that can result in export reductions from the Delta, releases of additional water from storage, other operational changes associated with endangered species, or water quality requirements. In addition, new litigation, listings of additional species under the Endangered Species Act, or new regulatory requirements imposed by the State Water Resources Control Board could adversely affect SWP operations in the future by requiring additional export reductions, releases of additional water from storage, or other operational changes impacting water supply operations.

Dramatic swings in annual hydrologic conditions have been evident recently with its impacts being felt most severely on the SWP supply. The Colorado River swings in variability are buffered by its extensive storage capabilities, however the river basin appears to be experiencing declining amounts of precipitation in its watershed over the last 21 years (MWD, 2021). Climate change is expected to shift precipitation patterns and affect reliability of water supplies, which will make water supply planning even more challenging. The general trend with climate change is of less water-storing snowpack and greater precipitation in the Sierras, more precipitation earlier in the year when it cannot be readily utilized, and more extreme and more frequent drought and flooding events. Rising sea levels resulting in impacts to coastal groundwater basins and levee failure in the Delta due to seawater intrusion, and increased risk of damage from storms, high-tide events, and the erosion of levees; and potential pumping cutbacks on the SWP due to salinity levels at the pumps.

To analyze the reliability of the different sources of supply due to climate, hydrologic conditions for imported and local supplies were identified that define three-year types: average, single dry year, and multiple dry years. MWD has determined and stated in its 2020 UWMP that it is able to meet the current and projected full service demands of its member agencies under all three

hydrologic conditions through 2045 by developing and implementing water resources programs and activities through its preferred resource mix. As presented in Table ES-3, water supplies will be available to meet District demands during a normal water year.

Table ES-3: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals	5,015	6,015	6,015	6,015	6,015
Demand totals	3,487	3,747	3,800	3,773	3,664
Difference	1,528	2,268	2,215	2,242	2,351
NOTES: Data from Table 7-2.					

For reliability planning, an increase in District demands associated with a single dry year was calculated. Water demands typically increase during the first dry year before it is apparent that it will be a dry year and before demand management outreach is implemented. Although additional supplies are available, supplies in Table ES-4 were matched to demands. The District can provide reliable water supplies under the single driest year hydrology with reduced supplies to meet dry year demands.

Table ES-4: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals	3,953	4,010	3,981	3,964	3,938
Demand totals	3,953	4,010	3,981	3,964	3,938
Difference	0	0	0	0	0
NOTES: Includes 272 AF sales to EBSD					

Water demands were also analyzed for the multiple dry year scenario. Projected water demands were increased during the first two years to reflect dry years before conservation outreach is expanded. Table ES-5 presents projected multiple dry year water supply availability over the next 25 years compared to increased water demands. This analysis demonstrates that the region can provide reliable water supplies under the multiple dry year hydrology with reduced supplies to meet increased demands. This was evident during the recent drought of 2012 through 2016 with year 2013 being one of the driest years on record; the District was able to meet its water demands

with an adequate supply. MWD and MWDOC have also determined that the region will be able to meet water demands during all hydrologic year types.

Table ES-5: Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	3,953	4,010	3,981	3,964	3,938
	Demand totals	3,953	4,010	3,981	3,964	3,938
	Difference	0	0	0	0	0
Second year	Supply totals	3,767	3,804	3,779	3,761	3,742
	Demand totals	3,767	3,804	3,779	3,761	3,742
	Difference	0	0	0	0	0
Third year	Supply totals	3,698	3,719	3,697	3,678	3,664
	Demand totals	3,698	3,719	3,697	3,678	3,664
	Difference	0	0	0	0	0
Fourth year	Supply totals	3,709	3,714	3,694	3,673	3,664
	Demand totals	3,709	3,714	3,694	3,673	3,664
	Difference	0	0	0	0	0
Fifth year	Supply totals	3,719	3,708	3,690	3,668	3,664
	Demand totals	3,719	3,708	3,690	3,668	3,664
	Difference	0	0	0	0	0

NOTES: Includes 272 AF sales to EBSD

Drought Risk Assessment

A Drought Risk Assessment was performed based on the assumption that the five driest consecutive years on record for the water supplier will occur over the next five years. This hydrologic sequence reflects the availability of MWD supplies during the 1988 to 1992 drought. Water demands were compared to supply availability.

Table ES-6 demonstrates supply reliability during a hypothetical five-year drought beginning in 2021. The imported supply was 100 percent reliable during the previous two multiple year droughts and can compensate for reduced local surface water supplies or reduced pumping until

Table ES-6: Five-Year Drought Risk Assessment Tables	
2021	**Total**
Gross Water Use	3,789
Total Supplies	3,789
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0
2022	**Total**
Gross Water Use [Use Worksheet]	3,639
Total Supplies [Supply Worksheet]	3,639
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%
2023	**Total**
Gross Water Use [Use Worksheet]	3,601
Total Supplies [Supply Worksheet]	3,601
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%
2024	**Total**
Gross Water Use [Use Worksheet]	3,639
Total Supplies [Supply Worksheet]	3,639
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%
2025	**Total**
Gross Water Use [Use Worksheet]	3,677
Total Supplies [Supply Worksheet]	3,677
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%
NOTE: Includes 272 AF sales to EBSD	

PFAS treatment is in place. MWD has stated that its supplies will be fully reliable during the next multiple year drought under most if not all conditions. This includes MWD's emergency supplies that have been accessed in the past and are a part of the supply portfolio.

Water Shortage Contingency Planning

The District has adopted a Water Shortage Contingency Plan as a separate stand-alone document. It addresses a newly required Annual Assessment, six mandatory shortage levels with response actions for each level, as well as many other shortage considerations such as communications, compliance, enforcement, legal authorities, financial consequences, monitoring and reporting, and refinement procedures.

Annual Assessment

Urban water suppliers are required to submit an annual water supply and demand assessment report (called Annual Assessment) to DWR, in compliance with Water Code Section 10632(a). The District's Annual Assessment is a written decision-making process used to determine an anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions in the current calendar years of 2021 and 2022, while assuming 2022 will be a dry year.

In the Annual Assessment model presented in Table ES-7, average service area unconstrained demands (before demand reduction activities) are assumed for 2021 while increased dry year unconstrained demands are assumed for 2022. For 2022, the dry year assessment scenario evaluation criteria (see second page of Table ES-7) are reviewed to determine if a supply shortage is projected to result. The operations plan identifies the prioritization of supply, if needed, and the quantities likely to be available by applying the evaluation criteria. It is anticipated that there will not be a supply gap for 2021 and 2022. However, in the future, if demands exceed available supplies, the amount of the gap will determine which WSCP supply shortage level is triggered. If a supply gap is anticipated, the water shortage stage would be based on the assessment scenarios presented in the WSCP which will determine the appropriate shortage response level and response actions for the District.

The Annual Assessment will be submitted to DWR by July 1 of each year. The Annual Assessment will document any anticipated shortage, any triggered shortage response actions, associated compliance and enforcement actions, and communication actions.

TABLE ES-7: LBCWD Annual Assessment		
ANNUAL ASSESSMENT REPORT SUBMITTED TO DWR:		7/1/2021
CURRENT YEAR		
Current year unconstrained demand (AF)	2021	3,525
Infrastructure constraints		No groundwater due to regulatory concern
Current year total available supply (AF)		
Groundwater (entitlement 2,025 AF)		0
Purchased imported water (available to meet demand)		3,525
Supply Availability		3,525
Supply shortage or surplus		**0**
Supply Shortage Level expected this year:		None
NEXT YEAR - Assumed Single Dry Year		
Second year unconstrained demands, assuming dry year	2022	3,830
2nd year infrastructure constraints		No groundwater due to regulatory concern
Groundwater (entitlement 2,025 AF)		2,025
Purchased imported water (available to meet demand)		1,805
Supply Availability		3,830
Shortage or surplus supply availability		**0**
Supply Shortage Level expected next year:		None
Anticipated Assessment Scenario		#2: Dry Water Year
NOTE: Demand in 2021, and 2022 as the 1st dry year, is from UWMP Table 7-5 inc. sales to EBSD		
Explanation of information provided above: Demand in 2021, and 2022 as the 1st dry year, is from 2020 UWMP Table 7-5. Sales to EBSD are included. See Assessment Scenario #2, Dry Water Year, for evaluation criteria to determine if a shortage in supplies will result.		

Table ES-7, continued

Assessment Scenario #2: Dry Water Year			
Hydrologic and Regulatory Conditions -Customer demands increase -SWP supply conditions measured in snow surveys -MWD's Colorado River supply availability -Regulatory conditions **Evaluation Criteria** -Monthly production data indicates above monthly average increases for December through March -MWD institutes Water Supply Allocation Plan (WSAP) -MWDOC's monthly Water Supply Condition update report June 1 -OCWD limits groundwater availability			
Unconstrained Demands: 2022 Single Dry Year, Increased Demand		**3,830**	
Scenario #2 Prioritization of Supplies Used	**Supply Sources**	**Available Quantity (AF)**	**Operations Plan**
1	Groundwater	2,025	Maximize use of groundwater
2	Imported	1,805	Augment with imported water as needed
Note: Purchased imported water available to meet demand.			
Shortage Response Actions Triggered Demand Reduction Activities: If a shortage results, see appropriate WSCP Shortage Level 2 through 5 Supply Augmentation Activities: See Operations Plan			

Water Shortage Levels and Response Actions

Six mandatory water shortage levels correspond to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than a 50 percent shortage from the normal levels of supply availability. Each of the shortage levels represent an ever-increasing gap between normally available supplies and normally expected customer water use. The District will implement the appropriate stage based on assessed water supply and demand conditions. Each stage consists of specific demand reduction actions including prohibitions, penalties, and/or rate structure modifications to be used as needed to encourage a reduction particularly in outdoor water demands. These response actions include public education campaigns, expanded outreach for water efficiency programs, and conservation penalties.

Supply augmentation responses have been integrated into the District's supply planning management for shortage conditions. Maximizing groundwater conveyed from the Orange

County Groundwater Basin is standard operating procedure. Purchasing additional imported supply from MWD could fill any gaps between projected water demands and the local groundwater supply during droughts. Each MWD member agency has a predetermined amount of water that can be purchased at the lower Tier 1 supply rate. Water can be purchased from MWDOC/MWD above a member agency's annual allocation amount but has an allocation surcharge at a Tier 2 supply rate.

Emergency Response Planning and Seismic Risk Assessments

A catastrophic interruption may lead to a proclamation of a water shortage and could be any event (either natural or human induced) that causes a water shortage severe enough to classify as a Stage 4 to 6 water supply shortage. To prepare for catastrophic events, the District is preparing an Emergency Response Plan (ERP) to address a variety of potential emergency situations that could affect the District's system. Procedures were developed for different water supply interruptions including, but not limited to power outages, water contamination, earthquakes, flooding, wildfire, loss of water supply, chemical spills, and terrorist events. The District's ERP will provide a framework for an organized response to an emergency.

Given the great distances that imported supplies travel to reach Orange County and within the county, the region is vulnerable to interruptions along hundreds of miles aqueducts, pipelines, and other facilities associated with delivering supplies to the region. The risk of earthquake damage to infrastructure from these active faults is manifested through different seismic hazards, including seismically induced ground shaking, seismically induced ground failure, and surface fault displacement. The District was a participant in the *Orange County Water and Wastewater Multi-Jurisdictional Hazard Mitigation Plan* development. The Hazard Mitigation Plan documents mitigation strategies for the District relating to seismic events.

Demand Management

Water conservation is not often thought of as a water supply but reducing one's water use by installing more efficient fixtures, for example, directly offsets the need for the District to purchase expensive imported water. On June 16, 2009, the District's Board of Directors approved Ordinance No. 100 establishing a Water Use Efficiency & Water Supply Shortage Program. This ordinance prescribes water conservation rules and regulations, as well as water conservation best management practices which shall be in effect at all times. The District relies on its ordinance for every day management as well as during droughts to manage demands and prevent excessive water use. The newly adopted WSCP can be enacted in times of drought and water shortage emergencies.

The District is committed to water use efficiency (WUE) as a means to maintain its reliable supply sources for its service area. The District's DMM activities, as well as programs administered by MWDOC's Water Use Efficiency Department to assist in promoting regional water use efficiency, include the following activities.

- Water waste prevention ordinances
- Metering
- Conservation pricing
- Public education and outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support
- Other demand management measures

WUE has become a major part of the District's current and future programs to reduce demand and increase water supply reliability. Because of the effectiveness of the programs, the District was able to exceed its 2020 water use target of 162 gpcd with average water use of 156 gpcd. Water conservation and demand management are an integral part of the District's water management strategy, integrating numerous and effective activities into long range planning for its supply needs. For example, the District has implemented conservation pricing: in 2014, the District's Board of Directors revised the Area Factor used to calculate customer's outdoor water allocations. The Board voted to reduce the Area Factor from an assumed 60 percent of the total property square footage as irrigated to 50 percent irrigated. By emphasizing efficient use, the rate structure motivates customers to partner with the District in its effort to maintain a reliable source of water.

To further its conservation efforts, in 2017, the District installed an Advanced Metering Infrastructure (AMI) system across its service area. The project included enhancing every residential and commercial water meter with new, state-of-the-art technology that wirelessly communicates usage data to the District. The new meters are able to collect multiple remote meter reads per day, allowing for better leak detection and improved customer service. The $2.6 million project was funded through water rates at no additional cost to customers and a $300,000 United States Bureau of Reclamation WaterSMART: Water and Energy Efficiency Grant, awarded to the District. In addition, a customer web portal, which uses data from the District's new AMI system, was launched that gives customers access to their own detailed water usage information, as well as allowing them to better manage and budget their water consumption. The ability to better understand and view

water use in near-real-time has a profound impact on water consumption and the District's conservation efforts.

Plan Coordination

The UWMP Act requires the coordination of the preparation of this UWMP and WSCP with other appropriate agencies and the public. A public notification was sent out to the City of Laguna Beach and the County of Orange at least 60 days prior to the public hearing to inform them of the preparation of the plan and the UWMP update process and schedule, and to solicit input for the plan update. A hearing notice was published twice in local public newspapers over the almost 30 days prior to the public hearing. A copy of the UWMP and WSCP were available for review at the District headquarters public counter. The hearing was held to discuss the draft UWMP and WSCP on June 17, 2021. Public hearings provide an opportunity for all District customers to become familiar with the plan and ask questions about the District's water planning efforts.

The Board of Directors adopted this 2020 UWMP and the WSCP on June 17, 2021. Within 30 days following plan adoption, the UWMP and WSCP were submitted to the California State Library, the County of Orange, and local wholesale and retail water providers. The report was submitted to DWR before July 1, 2021. Within 30 days of submitting the UWMP to DWR, a copy was made available during normal business hours at the District headquarters. It can also be obtained from the District website: www.lbcwd.org.

Chapter 1 – Introduction and Overview

1.1 Background

The Laguna Beach County Water District (District or LBCWD) was incorporated as a County Water District in 1925 and operates as a Special District under the Water Code Section 30000 et. seq. On June 3, 1998, the District and City of Laguna Beach filed an application with the Local Agency Formation Commission (LAFCO) of Orange County California for the District to operate as a subsidiary district of the city while continuing to exist as a special district with all the powers, rights, duties, obligations, and functions provided for by the Water Code.

A reorganization of the District became effective November 1, 2000 with the Laguna Beach City Council members sworn into office as the Ex-Officio Board of Directors (Board). The Board meets quarterly. A five-member Commission is appointed by the Board to serve in an advisory capacity. The Commission meets once per month.

The District serves potable water to a population of 18,401 people within a portion of the City of Laguna Beach, including small areas of unincorporated lands, through 8,703 service connections. Since the 1940's, the District has relied 100 percent on imported water from the Metropolitan Water District of Southern California (MWD) through the Municipal Water District of Orange County (MWDOC). However, in 2016, groundwater began augmenting the imported supply through the District's rights to groundwater to the Orange County Groundwater Basin.

The District's service area, shown on Figure 1, is largely built out with primarily single family homes and some commercial uses. This boundary is the same as the Orange County LAFCO designated Sphere of Influence for the District. The service area has a vibrant downtown business district, neighborhood commercial uses along Coast Highway, and professional office buildings and additional retail uses scattered throughout the City. The District does not serve the southern portion of Laguna Beach. The District also sells potable water and provides contract services to Emerald Bay Service District (EBSD), a community services district, under a service contract. The District works closely with the City of Laguna Beach as most of the District's service area is within the city.

This Urban Water Management Plan (UWMP) was prepared in response to the Urban Water Management Planning Act (Act), Water Code Sections 10610 through 10657, which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984. The Act requires that every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually prepare and adopt an

UWMP and submit the plan to the State Department of Water Resources (DWR) every five years demonstrating water supply reliability in normal, single dry, and multiple dry years. Sections of this UWMP that correspond to the Act are summarized in Appendix A - UWMP Checklist. The UWMP describes and evaluates sources of supply, reasonable and practical efficient water uses, and demand management activities.

Amendments have been added to the Act since its inception. In 2010, a change to the Act included the Water Conservation Act of 2009, also known as SB X7-7. This act required urban suppliers to establish water use targets for 2015 and 2020 for a reduction in per capita daily water consumption by 20 percent by December 31, 2020 and track its progress with an incremental goal of 10 percent by December 31, 2015. The District met and exceeded both the 2015 and 2020 targets.

The Act was significantly expanded since 2015. The major new requirements include the following, as described in the DWR UWMP Guidebook 2020.

Five Consecutive Dry-Year Water Reliability Assessment. The Legislature modified the dry year water reliability planning from a "multi-year" time period to a "drought lasting five consecutive water years" designation. This statutory change requires a supplier to analyze the reliability of its water supplies to meet its water use over an extended drought period.

Drought Risk Assessment. The California Legislature created a new UWMP requirement for drought planning in part because of the significant duration of recent California droughts and the predictions about hydrological variability attributable to climate change. The Drought Risk Assessment requires a supplier to assess water supply reliability over a five-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years.

Seismic Risk. The Water Code now requires suppliers to specifically address seismic risk to various water system facilities and to have a mitigation plan. An important aspect of this provision is the intersection of water supply infrastructure planning with a county or regional hazard mitigation plan.

Water Shortage Contingency Plan. In 2018, the Legislature modified the UWMP laws to require a Water Shortage Contingency Plan (WSCP) with specific elements. The WSCP is a document that provides an action plan for a drought or catastrophic water supply shortage. The new requirements are more prescriptive than previous versions. Many of these actions were implemented during the last drought, to successfully meet changing local water supply challenges. This is the most significant addition to the UWMP. This document, although presented here as Chapter 8, must be separately adopted by the Board of Directors and

maintained in practice as a stand-alone document which can be modified or updated at any time. Within it, the District's water shortage levels are now required to correspond to six standard water shortage levels in ten percent increments up to 50 percent water shortage, plus a shortage level over 50 percent shortage. Also now required in the WSCP is a water supply and demand assessment (Annual Assessment) with prescribed elements to be submitted annually to DWR starting with this WSCP.

Consistency with Groundwater Sustainability Plans. In 2014, the Legislature enacted the Sustainable Groundwater Management Act to address groundwater conditions throughout California. Water Code now requires suppliers' 2020 UWMPs to be consistent with Groundwater Sustainability Plans, in areas where those plans have been completed by Groundwater Sustainability Agencies.

Lay Description. The Legislature included a new statutory requirement for suppliers to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks. This section of the UWMP, provided here as an Executive Summary, could be viewed as a go-to synopsis for new staff, new governing members, customers, and the media, and it can ensure a consistent representation of the supplier's detailed analysis.

Sections of this UWMP that correspond to the Act are summarized in the DWR checklist located in Appendix A.

1.3 Utilization of Other Planning Documents

This 2020 UWMP was prepared by utilizing relevant planning documents prepared by the District and other entities within the service area and region. These include documents such as the District's Water Master Plan, City of Laguna Beach General Plan and Housing Element, Orange County Water District (OCWD) groundwater management plan, MWDOC 2020 UWMP and hazard mitigation plan, MWD 2020 UWMP, among others. District staff, with the assistance of a consultant – Karen Johnson of Water Resources Planning – prepared the 2020 UWMP. In preparing the UWMP, DWR's 2020 *Guidebook for Urban Water Suppliers*, released in March 2021, and related required tables were utilized along with other references listed in Appendix B.

Chapter 2 – Plan Preparation

2.1 District Public Water System

The District is a public water system regulated by the State Water Resources Control Board (SWRCB), Division of Drinking Water. Public water systems are defined as a system providing water for human consumption with 15 or more service connections or regularly serving at least 25 individuals daily at least 60 days out of the year. As described in Chapter 1, retail water systems with 3,000 or more connections or 3,000 acre-feet of water supplied are required to prepare an UWMP. Table 2-1 presents the system identification, number of connections, and amount of water supplied in 2020.

Submittal Table 2-1 Retail Only: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
3010017	Laguna Beach County Water District	8,703	3,253
	TOTAL	8,703	3,253
NOTES:			

2.2 Coordination

The District is a member of MWDOC. MWDOC is a member agency of MWD, the regional wholesaler of imported water. MWDOC serves all of Orange County except for the cities of Anaheim, Fullerton, and Santa Ana, which are member agencies of MWD. The District coordinated the development of this UWMP with MWDOC. In accordance with the Act, the District provided its imported water needs to MWDOC. MWDOC and MWD documented available quantities of imported supplies, including the reliability of those supplies for retailers in their respective regional UWMPs. References are made to these documents.

As a wholesale water supplier to its member agencies, MWDOC prepared an UWMP for its service area and developed a Regional Alliance to address the requirements of the SB X7-7 reporting requirements for the 2015 and 2020 water use targets. MWDOC purchases imported water from MWD and distributes the water to its member agencies, which provide retail water services to the public. Table 2-2 indicates that the District's UWMP is an individual plan, and it is a part of MWDOC's Regional Alliance.

An individual agency, such as Laguna Beach County Water District, can meet its urban water use target within its retail service area or through a Regional Alliance. Although the Orange County 20X2020 Regional Alliance reports the achievement of SB X7-7 targets and baseline estimates as a group, and thus compliance with the targets is adequate for individual agencies pursuing grants and loans, this document also presents the individual District compliance with targets.

Submittal Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable drop down list*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☑	Water Supplier is also a member of a Regional Alliance	Orange County 20x2020 Regional Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES:			

Table 2-3 indicates that the District is first and foremost a retail agency that also sells a small amount of water to EBSD. This UWMP presents water consumption and production data in calendar years ending with 2015. The quantities presented in this document are consistently presented in acre-feet.

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP (select from drop down)	
Unit	AF
NOTES:	

The District worked with MWDOC to provide consistency in its exchange of data and information, as presented in Table 2-4. Compliance with the coordination, noticing, and reporting requirements for the UWMP is presented in Chapter 10.

Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
Municipal Water District of Orange County (MWDOC)
Orange County Water District (OCWD)
NOTES:

Chapter 3 – System Description

3.1 District History

Until the early 1920's, the residents of Laguna Beach relied on a few privately owned shallow wells and intermittent rainfall for their water supply. By 1924, growth in Laguna Beach had been so rapid that the private water system could not produce an adequate supply. The heavy pumping exhausted the supply and soon saltwater intrusion and well failure forced the company to discontinue water service. Conditions were so bad that many residents drove to the old county well in Laguna Canyon for water; demand was so great in the summer that residents had to wait for hours before they could draw water.

By the fall of 1924, village residents formed a citizen's committee to search for a reliable water supply with the search pointing toward the Santa Ana River Basin. These pioneer leaders, pretending to be duck hunters, bought 120 acres in Huntington Beach to form a duck-hunting club, but really purchased the City's future water supply.

The Board of Supervisors called for an election on May 4, 1925, and residents went to the polls and approved the formation of the LBCWD by a vote of 359 to 0. One year later, District voters approved a bond issue to purchase the land in Huntington Beach and construct facilities required to pump and convey the water 20 miles south to the District's service area. The system was completed by spring 1927. The original bond was paid off in 1955.

Introduction of water from wells in the Lower Santa Ana River Basin solved Laguna's water problems for several years. However, other water producers in the Basin sued the District to prevent the groundwater production and export to Laguna Beach. In 1933, the Orange County Superior Court determined the right of the District to pump and export 2,025 acre-feet of groundwater from the Lower Santa Ana River Basin each year. Over time, pumping throughout the basin increased, groundwater elevations fell, and seawater intruded into the Lower Santa Ana River Basin. By 1941, Laguna's water supply had again become salty and unreliable.

Deterioration in the quality of the groundwater caused the District to assist in the formation of Coastal Municipal Water District (CMWD) and to purchase Colorado River water through CMWD from MWD in 1943. The District's well field in the Santa Ana River Basin remained in operation until 1948. The District then relied entirely on the imported supply purchased from CMWD through MWD. In January 2001, CMWD consolidated with MWDOC and the District continued to be 100 percent reliant on imported water from MWD through MWDOC. Recently, the District has clarified its rights to exercise its groundwater rights in the Lower Santa Ana River basin as a near term source of water and has utilized this supply since 2016. This is described under system supplies in Chapter 4.

3.2 Service Area Physical Description

The District's service area includes northern Laguna Beach with a portion of Crystal Cove State Park, the main urbanized area of Laguna Beach not including the south end of the city, and along Laguna Canyon Road north to Sycamore Hills neighborhood off El Toro Road. The service area is characterized by gently rolling areas to steep hillsides climbing from sea level to 1,000 feet above sea level. The service area is edged to the north and east by the Laguna Greenbelt, which encompasses 10,000 acres of largely undeveloped lands, separating the service area from other communities in the county. The greenbelt is primarily under the land use authority of the County of Orange and the State of California. To the north, the service area extends beyond the City of Laguna Beach into this greenbelt to include the Crystal Cove State Park. Laguna Canyon separates the Laguna Coast Wilderness Park from the Aliso and Wood Canyons Wilderness Park.

The service area, presented on Figure 1, covers almost 8.5 square miles and has 8,703 service connections for residents as well as businesses. The District provided 3,487 acre-feet per year (afy) or approximately three million gallons per day (mgd) of potable water to its service area and EBSD. Although the service area does not include the unincorporated community of Emerald Bay, the District wholesales water to EBSD; 272 afy was provided to EBSD in 2020. South Laguna, which was annexed to the City in 1987 but not the District, is served by South Coast Water District (SCWD). The service area boundary has not changed since the last UWMP.

There are 21 storage reservoirs with a total storage capacity of 33.5 million gallons within five pressure zones within the District. These reservoirs are used for daily fluctuations in demand while providing approximately ten days of water to the community in the event of an emergency. The District continues to further improve distribution reliability by increasing emergency water storage. The District's efforts have resulted in superior fire suppression and water supply ratings, which have benefited the community with reduced insurance costs.

District staff operates and maintains 36 pumps in 14 pumping stations. The distribution system includes 136 miles of pipelines ranging in diameter from 4 to 16 inches. Transmission lines bringing imported water to the District include the Aufdenkamp and Coast Supply transmission lines which range from 24 to 42 inches in diameter. The District is the lead agency in a joint powers partnership with SCWD, Irvine Ranch Water District (IRWD), the City of Newport Beach, and the Santa Margarita Water District to convey water from MWD in these jointly held facilities.

Figure 3-1: Laguna Beach County Water District Service Area

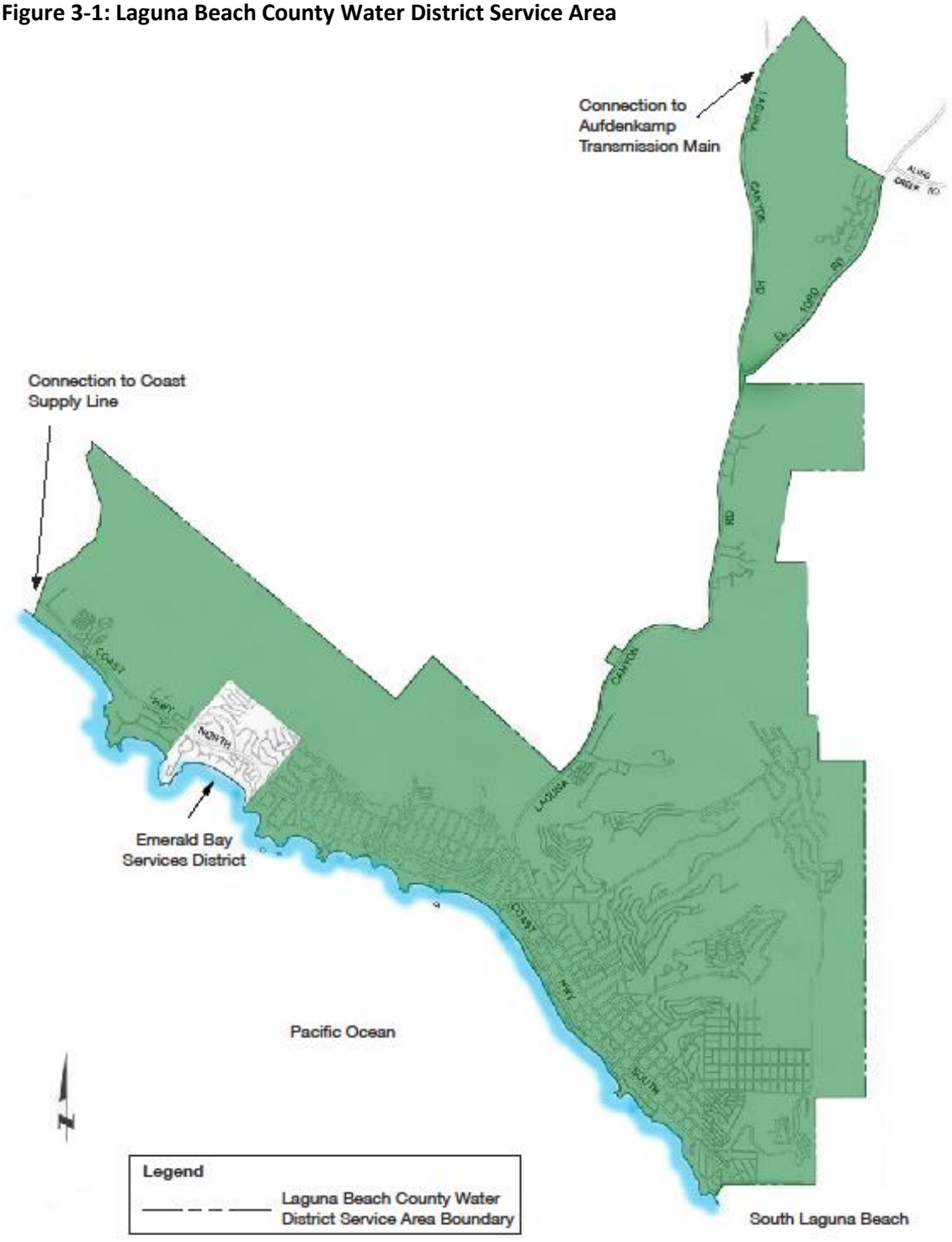


Figure 3-2. MWD Feeders and Transmission Mains

Source: MWDOC, 2016

Climate plays an important role in the demand for water within the District's service area. Temperature, rainfall, and wind are typical of the Mediterranean climate characterized by mild winters, warm summers, moderate rainfall and general year-round sun (with the exception of coastal morning fog during the spring and summer months). Temperatures in Laguna Beach average 62° Fahrenheit year-round, 69° Fahrenheit during summer months, and 55° Fahrenheit in the winter. The annual standard average evapotranspiration rate is 47.56 inches.

Average annual rainfall in Laguna Beach is 12 to 13 inches, depending on the location within the service area. Over 90 percent of the rainfall occurs between late October and early April. Higher elevations of the San Joaquin Hills generally receive an annual rainfall of 14 to 15 inches. Distribution of rainfall in the hills is extremely irregular and can vary by more than two inches per year. Torrential downpours can occur in one section of the hills, while another section receives only light showers. Much of the rain that falls on the crest and on the side slopes of the San Joaquin Hills emerges in wet years as springs and seepages near the foot of the northern slopes and generally at the base of the terrace deposits where impermeable rock is encountered. These springs remain active during most of the summer.

Wind, in combination with other climatic and geographic features, is a significant aspect of the District's physical setting. Prevailing winds in Laguna Beach are sea breezes that are generally low in velocity, attaining speeds of 10 to 20 mph. Typically, sea breezes are beneficial to the community because they propel air pollutants inland and provide a cooling effect during the warm summer months, thus keeping outdoor irrigation demands low. In addition to prevailing sea breezes, Laguna Beach occasionally experiences seasonal winds during the fall and winter months referred to as Santa Ana winds. Santa Ana winds are hot, dry northerly to northeasterly winds, which often attain velocities in excess of 40 mph. Santa Ana winds are particularly damaging because they frequently occur during the driest season of the year, increasing the risk of rapidly spreading fires. These wind driven fires cause damage to structures and natural vegetation in the canyon areas and along the edges of the District's service area adjacent to the greenbelt, and increase firefighting water demands.

3.3 Climate Change Impacts

Climate change and or greenhouse gas emissions are considered in city and county general plans, California Environmental Quality Act documents, and integrated resource management plans. By considering potential water supply impacts resulting from climate changes in its UWMP, the District integrates this UWMP with these documents and supports water management functions. The District is a member of the IRWMP for South Orange County Watershed Management Area; the South Orange County Watershed Management Area IRWMP document contains climate change objectives. Water conserved under the District's water use efficiency program has a direct

correlation with reduced greenhouse gas emissions as energy is required to convey, treat, and distribute water.

Information on the vulnerability of its water supplies and service area water demands is provided here to aid the District in preparing for and adapting to expected climate change impacts. By recently reducing reliance on imported supplies and relying more on the heavily managed Orange County groundwater basin to meet its water demands, the District is reducing its vulnerability to climate change.

Because climate change is such a gradual process, it can be difficult to distinguish the changes described below from the usual variability in supplies and demands. However, more intense storm events and the changing frequency and duration of drought years are becoming evident throughout the state. Therefore, MWD is increasing its water supply options to compensate for State Water Project (SWP) and Colorado River reductions due to climate change and other factors. The District will continue to adapt to changing conditions within its service area, as well as maintain its aggressive water use efficiency efforts to reduce greenhouse gas. Portions of this discussion of climate change impacts to the District's water supplies and demands are repeated in chapters 4, 6, and 7 of this UWMP.

3.3.1 Impacts to Imported Supply

According to the Public Policy Institute of California,

> "…Air temperatures are projected to increase throughout the state over the coming century. Sea level is expected to rise 39 to 55 inches by 2100, and the frequency of extreme events such as heat waves, wildfires, floods, and droughts is expected to increase. Higher temperatures will result in more rain and less snow, diminishing the reserves of water held in the Sierra Nevada snowpack." (PPIC, 2011)

At the present time, state-wide infrastructure to capture precipitation is limited because infrastructure in California was designed to capture slow melting snowpack not rapid stormwater runoff. The following impacts to the District's imported supply are anticipated, resulting in reduced SWP deliveries and supply outages. MWD is anticipating these impacts and is diversifying its supply portfolio and increasing groundwater banking to compensate for reduced SWP deliveries. The District, understanding its vulnerability, has reduced its reliance on imported supplies by developing its groundwater supply.

- An increase in average surface temperatures of 5.5 to 10.4 degrees Fahrenheit is anticipated by the end of the century, resulting in up to four times as many heat wave days in urban centers.

- Heat waves will increase in frequency, magnitude, and duration.
- Longer, drier, and more frequent periods of droughts anticipated with up to 2.5 times the number of critically dry years by the end of the century. Modest changes in precipitation can have a large impact on runoff. Lower inflows will make it more difficult to repel salinity in the Sacramento River - San Joaquin River Delta (Delta).
- About 25 to 40 percent of the Sierra snowpack may be lost by 2050. Higher temperatures increase the ratio of rain to snow, accelerate the rate of spring snowmelt, and shorten the overall snowfall season, leading to more rapid and earlier seasonal runoff.
- Over 55 percent increase in risk of large wildfires is anticipated. Fires result in changes in vegetation and eventually a reduction in water supply and storage capacity in the Sierras.
- More severe (e.g., frequency, intensity) and warmer winter storms are likely to occur, increasing runoff and flooding which could cause Delta levee failure.
- Increased tidal salinity intrusion to the Delta from sea level rise, lower inflows, and Delta levee failures. Without major changes to in-Delta facilities, more fresh water will be needed to repel seawater and maintain water quality standards, especially during drier years.
- Degraded water quality of Delta supplies is anticipated due to changing temperatures, flows, runoff rates and timing, and the ability of watersheds to assimilate wastes and pollutants. Lower Delta inflows during certain times of the year will degrade water quality by increasing temperatures and minimizing the dilution effects of runoff and wastewater discharges. Warmer water can accelerate some biological and chemical processes, increasing growth of algae and microorganisms. Higher winter flows will increase contaminant loadings from nonpoint sources. Intense rainfall following wildfires can degrade water quality.

Since winter snowpack in the Sierra Nevada functions as a major water storage system, this will have serious consequences to annual supply availability in all systems that rely on the runoff. These impacts to statewide water supplies originating from the Delta watershed, as well as current flood control practices on Sierra Nevada reservoirs, will reduce MWD's supplies from the SWP. In addition, flooding in the Delta could have devastating impacts on the reliability of Delta exports with supply outages anticipated for up to one year.

MWD also obtains water from the Colorado River. Colorado River flows are anticipated to decrease by 5 to 20 percent in the next 40 years, according to Brad Udall, director of the University of Colorado Western Water Assessment. Earlier runoff and lower flows from the Rocky Mountains later in the year are also anticipated.

3.3.2 Impacts to Groundwater Supply

Although climate changes does impact the natural recharge of groundwater basins, the likelihood of it affecting groundwater resiliency, augmented replenishment, and quality is low. Due to sea level rise, the District's groundwater supplies will have increased pressure on the seawater barriers, perhaps requiring more injection supply to prevent contamination of Orange County Basin groundwater supplies. OCWD's conjunctive use management of the Basin will take on even greater importance as increased quantities of imported surface water will likely be required to recharge the Basin, and as more frequent and more intense heat waves and extended dry periods deplete resources and increase demands for those resources. With the reduced Sierra snowpack, groundwater storage throughout the state will be more important as early thaws will require new storage facilities to be made available to accommodate the early flows.

3.3.3 Impacts from Sea Level Rise

The Pacific Institute analyzed impacts from sea level rise of 55 inches and indicated that the most serious impacts to Laguna Beach will be along Main Beach and downtown, just south of the El Moro Visitor Center/campground in Crystal Cove State Park, and south of the District service area along Aliso Creek and Country Club Road along the SOCWA Aliso Creek ocean outfall alignment. Flooding and/or erosion along the coast, depending on specific areas of impact, will affect water and sewer pipelines and pumping facilities.

3.3.4 Impacts to Water Demand

Climate change is anticipated to impact water demands through more frequent and more intense heat waves and extended dry periods, which will cause increases in demands in the District's service area. This is evident in demand patterns associated with the first dry water year. It is not known yet if changes in precipitation patterns will offset these increases. In addition, with drier conditions, wildfires in the San Joaquin Hills will likely be more frequent, thus increasing demands for District water supplies used to contribute to suppression.

MWDOC has determined that production requirements may increase by 9.7 percent during a dry year by 2040 and 10.8 percent by 2045 (MWDOC, 2021). On a positive note, perhaps with the changes to climate patterns more monsoon conditions may occur in Southern California, resulting in precipitation in the summer reducing outdoor landscaping demands.

3.4 Other Social, Economic, and Demographic Factors

The District has experienced continuous growth in population since its formation in 1925 until recently. In 1927, the population of the City of Laguna Beach approached 1,500 people; the City's total population in 2020 was 22,343; this population includes areas outside of the District service

area. Laguna Beach has changed from a rural agricultural, weekend and summer resort area to a permanent, year-round, urbanized area. The total permanent residential population in the District service area has been decreasing since 2010. According to MWDOC, population in the service area was 20,850 in 2010 and is currently at 18,401 residents, a 12 percent decrease. Because Laguna Beach is a popular vacation and recreation area proximate to Southern California metropolitan areas, the seasonal population can double or triple in the summer. During July and August, the resident population within the City of Laguna Beach increases to approximately 45,000 with a daily influx of visitors estimated between 25,000 and 35,000 people (Laguna Beach, 2010). During the current coronavirus pandemic, more residents are working from home and tourism was significantly curtailed. These significant changes, however, appeared to balance out with a somewhat consistent overall water demand between 2019 and 2020.

Historical population estimates prepared for MWDOC by the Center for Demographic Research at California State University Fullerton (CDR) indicate a 2020 District service area population of 18,401. This estimate does not include South Laguna. The community of Emerald Bay is also not included in the CDR population estimates; its separate population is estimated to be anywhere between 900 to 1,200. Emerald Bay was deannexed from the LBCWD in 2004. The EBSD is responsible for providing the community of Emerald Bay with water and is a District wholesale customer under contract to the District. Emerald Bay is a gated community with common facilities such as pool, tennis courts, and landscaping. It is fully built out with a high vacancy rate reflecting many homes used seasonally. The current and projected LBCWD service area population is presented in Table 3-1.

Submittal Table 3-1 Retail: Population - Current and Projected

Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	18,401	18,404	18,410	18,410	18,410	18,410

NOTES: Population from Center for Demographic Research, CSUF, 2018, provided by MWDOC, 2020. Does not include EBSD or South Laguna.

As supported in the Table 3-1 population projections, water usage due to new development is not expected to substantially increase over the next 20 years. In fact, through the District's encouragement of drought resistant landscaping, water use efficiency, and changes in behavior to limit urban runoff and improve the quality of ocean water, it is anticipated that existing water use will be relatively stable. With most of Laguna Beach developed and no change anticipated to the District's LAFCO Sphere of Influence for expansion, water demand projections were based on projections adapted to reflect developable lands consistent with the General Plan. Demand projections presented in Chapter 4 reflect the development of vacant parcels with some

increased densities of existing uses (e.g., accessory dwelling units, redevelopment or reuse of existing development in the downtown area, etc.).

3.5 Land Uses within the Service Area

The City of Laguna Beach provides the policy framework and land use planning for the majority of lands in the city that are within the District service area. The City is essentially built out, except for limited infill development of vacant legal parcels in the existing residential neighborhoods and commercial areas. Some increase in water demands is also anticipated for redevelopment of existing, underutilized lands with increased densities. The water demand projections provided in Chapter 4 reflect these limited opportunities. The majority of vacant land is constrained by steep terrain and access difficulties. Most open space around the City has been acquired by the City or the County with easements for park and open space uses. Information provided here represents the most up to date general plan. The general plan land use element was last updated in 2012 and the housing element was last updated in 2014.

Chapter 4 – System Water Use

The past, current, and projected water demands are discussed in this section, along with system losses, and projected water demands for planned low-income households.

4.1 Water Demand

The District has several billing classifications: single family residential, multi-family residential, commercial (which includes industrial, hotels, and institutional/government), landscape, and mixed uses. Mixed uses have a residential use along with commercial or other use. Table 4-1 presents the actual 2015 deliveries by water use sector including sales to EBSD and water losses. Losses are described in Section 4.3 and were approximately 6.8 percent in 2020.

The District wholesales potable water to EBSD by contract agreement and delivers it through District distribution system facilities. Actual water sales in 2020 to EBSD were 272 as presented in Table 4-1. The Agreement between the District and EBSD is located in Appendix C. The District administers all billings, connections, and disconnections. The source of supply can be either groundwater or imported water conveyed through the Coast Supply Line.

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable Water - Actual

Use Type *(Add additional rows as needed)*	2020 Actual		
Drop down list *May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool*	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Single Family		Drinking Water	1,905
Multi-Family		Drinking Water	455
Commercial		Drinking Water	371
Institutional/Governmental		Drinking Water	151
Landscape		Drinking Water	96
Sales/Transfers/Exchanges to other Suppliers	EBSD	Drinking Water	272
Losses			236
		TOTAL	3,487
NOTES: Commercial includes industrial and mixed uses. Losses based on total production minus use.			

4.2 Demand Projections

Total water use for the District is comprised of water deliveries, sales to EBSD, and unmetered uses and losses. Table 4-2 presents water demands through 2045 projected by MWDOC for the District service area. As presented in Table 3-1, the population is expected to remain the same through 2045 with a net increase of only six people. There is limited land available for new development but any increase in new commercial demands is offset by an aging population and passive conservation savings. MWDOC's projections were based on historical retail demands on a per housing unit basis focusing on future active and passive conservation associated with indoor and outdoor water use separately. Demographics were taken into account.

The 2020 sales to EBSD of 272 afy has not varied much over time. Water losses are assumed to remain at 6.8 percent for future conditions reflecting the improved water use efficiencies in the District.

Submittal Table 4-2 Retail: Use for Potable and Non-Potable Water - Projected

Use Type *(Add additional rows as needed)*	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
Drop down list *May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool*		2025	2030	2035	2040	2045 (opt)
Single Family		2,053	2,023	1,993	1,963	1,952
Multi-Family		448	437	426	425	414
Commercial		557	647	663	679	679
Landscape		113	113	113	113	113
Sales/Transfers/Exchanges to other Suppliers		272	272	272	272	272
Losses		234	237	236	235	233
TOTAL		3,677	3,730	3,703	3,687	3,664

NOTES: Commercial projections include industrial, mixed uses, institutional, and government. Projections provided by MWDOC. EBSD past usage assumed. System losses of 6.8% added.

Table 4-3 presents the total actual and projected water demands summed from Tables 4-1 and 4-2. Table 4-3 also includes current and projected recycled water demands discussed in Chapter 6.

Submittal Table 4-3 Retail: Total Gross Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable *From Tables 4-1R and 4-2 R*	3,487	3,677	3,730	3,703	3,687	3,664
Recycled Water Demand* *From Table 6-4*	0	70	70	70	70	0
Optional Deduction of Recycled Water Put Into Long Term Storage	0	0	0	0	0	0
TOTAL WATER USE	3,487	3,747	3,800	3,773	3,757	3,664
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES: Includes 272 AF for EBSD.						

4.3 Distribution System Water Losses

Losses presented in Table 4-1 reflect the physical water losses from the water distribution system and storage facilities, up to the customer meter. This difference between water production and billed consumption has been quantified for the District in accordance with a water system balance methodology developed by American Water Works Association. A placeholder was calculated for the most recent 12-month period of year 2020 until the analysis is completed and submitted as required. This estimate along with the previous four years are presented in Table 4-4. The audit worksheets are located in Appendix D.

Pursuant to Section 10608.34 of the Water Code, suppliers must show whether it met the distribution loss standards enacted by the SWRCB. However, the distribution loss standards have not been adopted by the SWRCB. The standards may go into effect after the 2020 UWMPs have been adopted. The audit reports are provided here, and all programs initiated by the District to reduce losses are described in Chapter 9. The Guidebook recommends that trending also be included here but without a long period of audit records the wide fluctuations in annual losses, which are typical, do not show a discernable pattern yet.

Submittal Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2016	340
01/2017	290
01/2018	166
01/2019	171
01/2020	236
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: 2020 losses of 6.8% based on difference between production and consumption. 2016-2019 from annual audits.	

4.4 Inclusion of Future Water Savings

As presented in Table 4-5, conservation savings other than passive savings were not included in the water demand projections in Table 4-2. The projected unconstrained demand accommodates the relatively flat population projection with some potential increase associated with redeveloped lands in the downtown area offset by an aging population.

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES: Low and very low income housing needs based on the City of Laguna Beach Housing Element, 2014.	

4.5 Water Use for Lower Income Households

SB 1087 requires water providers to grant priority service hook-ups to lower income housing developments. The District passed a resolution in October 2006 (Resolution No. 701) establishing written policy for the provision of water service to developments that include housing units affordable to lower income households. The resolution states that if there is any shortfall in the capacity of the District to provide water service, then it will reserve from its then uncommitted

water supplies, an amount equivalent to the demands of the planned housing units affordable to lower income households.

The UWMP Act requires documentation of future water demands associated with planned new lower income housing by the local land use planning jurisdiction. The City's updated Housing Element of the General Plan indicates the need for new construction of two total low- and very low-income units within the City by 2021. Water demands for planned low-income housing by 2021 were based on a ten percent reduction in existing per capita demands for 2021. New demands associated with planned low-income housing are less than one acre-foot by 2021 and, as indicated in Table 4-5, are included in the District demand projections.

4.6 Climate Change Considerations

As discussed in Chapter 3, climate change is anticipated to result in an increase in outdoor water demands due to the higher temperatures and more intense and frequent extreme weather conditions. MWDOC has increased its demand projections for uses relying on imported surface water by six percent to accommodate impacts from climate change. The drought risk assessment in Chapter 7 reflects an increase for the District of 8.1 percent.

Chapter 5 – Baseline, Target, and Compliance

The DWR Guidebook for Urban Water Suppliers describes the Water Conservation Act of 2009, also known as SB X7-7 and its reporting requirements (DWR, 2021). The driver behind the legislation was to reduce Statewide urban water use by 20 percent by the year 2020. Each retail urban water supplier determined its baseline water use then established a reduced target water use for the years 2015 and 2020. In this round of 2020 UWMP, retail agencies demonstrate compliance with their established water use target for the year 2020. Regional compliance is also available through the MWDOC Regional Alliance. Not only is LBCWD a member of the Orange County 20x2020 Regional Alliance which has met its overall target for 2020, but the District has exceeded its individual 2020 target with a lower per capita consumption.

Although the UWMP uses acre-feet as its unit of measurement throughout this document, gallons per capita per day (gpcd) is used frequently in this chapter. The gpcd is calculated by dividing total District water production, not just residential water use, by population.

5.1 Establishing Baseline

Table 5-1 presents the base period ranges for the District's 10-year (1995 through 2004) and five-year (2003 through 2007) periods. A 10-year base period range was used instead of a 15-year base period range because the District was not using recycled water in 2008. The baseline daily per capita consumption for the 10-year period was 202 gpcd. This is an important number as the targets are based on reducing this consumption level.

Submittal Table 5-1 Baselines and Targets Summary from SB X7-7 Verification Form
Retail Supplier or Regional Alliance Only

Baseline Period	Start Year	End Year	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1995	2004	202	162
5 Year	2003	2007	196	
*All values are in Gallons per Capita per Day (GPCD)				
NOTES:				

The five-year baseline is a target confirmation. It is needed to determine whether the 2020 target meets the legislation's minimum water use reduction requirements of at least a five percent reduction per capita for a five-year continuous period that ends no earlier than December 31, 2007 and no later than December 31, 2010. The baseline daily per capita consumption for the five-year period was 196. Ninety-five percent of the five-year base is 186 gpcd. The 186 gpcd is higher than the 2020 target for the District of 162 gpcd, thus the District target is greater than a five percent reduction per capita over the five-year period.

5.2 Establishing Target

Individual agency targets are needed to meet the goal of a 20 percent reduction in per capita use by 2020 as set forth in the Water Conservation Act of 2009 (SB X7-7). If the individual target is not met, then a regional alliance target can be used.

5.2.1 Individual District SB X7-7 Target

DWR provided four different methods to establish water conservation targets. Method 1, Baseline Reduction Method, was the most appropriate. Methodology 1 requires a straight forward technical analysis of reducing the baseline per capita consumption by the targets. The District baseline per capita consumption identified in SB X7-7 tables is 202 gpcd. A 20 percent reduction by 2020 would result in 162 gpcd by 2020. The worksheets to determine these targets are presented in the SB X7-7 certification tables submitted electronically to DWR upon the adoption of this UWMP and located in Appendix E.

The District has worked hard since the last UWMP in targeting conservation efforts to meet its per capita target. The 2020 demand of 156 gpcd is below the 2020 target of 162 gpcd, thus the District met its 2020 target individually. These numbers reflect District 2020 population of 18,401 and production without EBSD of 3,215 acre-feet. If EBSD population and water use were included, the 2020 demand of 160 gpcd is still below the target of 162 gpcd. The District's target in 2015 was 182 gpcd and it achieved the average use of 169 gpcd.

5.2.2 Regional Alliance

MWDOC formed a regional alliance for its member agencies – of which LBCWD is a member. Under the Orange County 20x2020 Regional Alliance, the entire region is able to benefit from local and regional investments, such as the Groundwater Replenishment System, recycled water, and water use efficiency programs that MWDOC and member agencies are implementing. MWDOC provides annual monitoring and reporting for its region on progress toward compliance with the regional target.

If the regional alliance meets its water use target, all agencies in that alliance are deemed compliant regardless of individual performance. If the regional alliance fails to meet its target, each individual supplier in Orange County, including LBCWD, will have to meet its individual target.

As presented in its 2020 UWMP, MWDOC calculated the regional target for the alliance as 158 gpcd by 2020. Because the gross 2020 water use for the alliance was 146 gpcd, the regional alliance target was met. With credits for indirect potable reuse and recycled water direct use, 2020 water use was further reduced to 109 gpcd, easily meeting the regional target. (MWDOC, 2021).

Submittal Table 5-2: 2020 Compliance From SB X7-7 Compliance Form
Retail Supplier or Regional Alliance Only

2020 GPCD			2020 Confirmed Target GPCD	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD	2020 TOTAL Adjustments	Adjusted 2020 GPCD		
156	0	0	162	Yes
**All values are in Gallons per Capita per Day (GPCD)*				
NOTES: MWDOC Regional Alliance, of which LBCWD is a member, also met its 2020 target.				

Chapter 6 – System Supplies

The District has historically utilized imported MWD treated water to meet all of its water needs. In 2016, the District introduced groundwater to its supply portfolio. Current and future water supplies are described in this chapter.

6.1 Purchased Imported Water

MWD imports supplies to the region for MWDOC to wholesale to the District. During the previous five years, the District purchased an annual average of 2,920 acre-feet of imported water, while the average amount purchased over the past 10 years was 3,570 acre-feet. The lower five-year average purchase is due to the introduction of the groundwater supply in 2016.

6.1.1 MWD Wholesale Supplies

Over 19 million Southern Californians rely on MWD for imported water. MWD wholesales imported water supplies to member cities and water districts in six Southern California counties. MWD has provided between 45 and 60 percent of the municipal, industrial, and agricultural water used in its nearly 5,200 square-mile service area. The remaining supply comes from local wells, local surface water, recycled water supplies, and other regional sources.

Historically, MWD has been responsible for importing water into the region through its operation of the Colorado River Aqueduct and its contract with the State of California for SWP supplies. The future reliability of these supplies is increasingly uncertain; however, MWD has been working to increase its ability to supply water, particularly in dry years. MWD increased supplies received from the SWP by developing flexible Central Valley/SWP storage and transfer programs to deliver additional dry year supplies that can be conveyed through the Delta during dry years and during times of Delta regulatory restrictions. The MWD 2020 UWMP provides detailed documentation of current and projected MWD supplies and deliveries to ensure supply reliability (MWD, 2021).

6.1.2 MWDOC's Role

MWDOC is a regional water wholesaler and resource planning agency, managing Orange County's imported water supply to 28 water purveyors. These MWDOC member agencies, comprised of cities and water districts, provide water to 3.2 million customers in a service area that covers all of Orange County except the cities of Anaheim, Fullerton, and Santa Ana. MWDOC is MWD's second largest member agency. To aid in planning future water needs, MWDOC works with its member agencies each year to develop a forecast of future water demand. The result of this coordination effort allows MWDOC to forecast the imported demand by subtracting total

demand from available local supplies. MWDOC then advises MWD annually on how much water MWDOC anticipates purchasing during the next five years (MWDOC, 2010).

6.1.3 LBCWD Imported Purchases

Historically, all of the District's supply needs were met by water imported by MWD and purchased from MWDOC. Lake Mathews is located in western Riverside County east of the Santa Ana Mountains, 10 miles southwest of the City of Riverside. Lake Mathews was constructed in the 1930's as the terminal reservoir for MWD's Colorado River Aqueduct. It also receives local runoff and has historically received about four percent from the SWP and is capable of receiving a greater quantity of SWP supply via MWD's Inland Feeder.

When the District purchases imported water, raw water is conveyed from Lake Mathews via the Lower Feeder to the Robert B. Diemer Treatment Plant in Yorba Linda. The treated water is conveyed through the East Orange County Feeder No 2 to both the Aufdenkamp Transmission Main (a jointly owned regional facility) and Coast Supply Line (also a jointly owned facility). Figure 1 presents the two locations where these facilities enter the District service area.

The reliability of MWD's supply was addressed in its 2020 and in MWDOC's 2020 UWMP and is summarized in Chapter 7. MWD ensures a highly reliable supply of water – over 100 percent of average annual demands – to its member agencies during average, dry year, and multiple dry years.

6.2 Groundwater Resources

Groundwater resources available to the District include the Orange County Groundwater Basin.

6.2.1 Orange County Groundwater Basin

This section describes the District's entitlement to Basin water and the groundwater management agency, Orange County Water District.

Laguna Beach Wells in the Lower Santa Ana River Groundwater Basin. In 1933, the District obtained an adjudicated right to 2,025 acre-feet of underground water storage in the Lower Santa Ana River Basin within the Orange County Groundwater Basin (Basin). This groundwater right originated in 1926. The court Judgment is provided in Appendix F. The Basin is managed by OCWD. Although the LBCWD's rights to this water were adjudicated, the Basin overall has not been adjudicated but is closely managed.

In early 2016, the District executed an agreement with OCWD to allow LBCWD to resume pumping within the groundwater basin. The purpose of the project is to augment the District's

water supply portfolio with an alternative local source to reduce reliance on imported water. Delivery of groundwater to the District began in 2016.

OCWD Basin Management. OCWD manages the Basin under the Orange County Water District Act, Water Code App., Ch 40, which is described in numerous OCWD documents including the MWDOC UWMP 2020. OCWD manages the basin for the benefit of municipal, agricultural, and private groundwater producers and is responsible for the protection of water rights on the Santa Ana River in Orange County, as well as the management and replenishment of the Basin. The groundwater basin, which underlies north and central Orange County, provides 60 to 70 percent of the water needed in that area; imported water and some local surface water meets the balance of the water demand. Basin producers pump groundwater and deliver to its customers.

Total groundwater production from the Basin is approximately 300,000 afy. The framework for the production management is based on establishing the Basin Production Percentage (BPP). BPP is the ratio of groundwater production to total water demands expressed as a percentage. Pumping below the BPP, the District is charged a fee on a per acre-foot basis, called the Replenishment Assessment (RA). Groundwater production above the BPP is charged the RA and the Basin Equity Assessment (BEA), which is set so that the cost of pumping above the BPP reflects the costs of importing water to use to replenish the Basin. Thus a financial disincentive is provided for production above the BPP. The OCWD Board of Directors can annually adjust the BPP. The BPP was established at 75 percent from 1993 to 2007 and reduced to 62 percent in 2009. It was lowered to reduce the accumulated overdraft in the Basin. The BPP is currently set at 77 percent and is anticipated to be set at 82 percent by 2025. The BPP is not an extraction limitation – exceedances are allowed but result in financial assessments on the excess production.

In 2014, the California Sustainable Groundwater Management Act (SGMA) was passed. The law provides authority for agencies to develop and implement groundwater sustainability plans (GSP) or alternative plans that demonstrate the basin is being managed sustainably. The Orange County Groundwater Basin is designated by DWR as a medium priority basin due to heavy reliance on this water source, and therefore must form a Groundwater Sustainability Agency and adopt a GSP or OCWD can submit an alternative to a GSP. On January 1, 2017, the Orange County Water District, city of La Habra, and Irvine Ranch Water District submitted the Basin 8-1 Alternative to DWR. Elements to be included in GSPs as described in the California Water Code (§10727.2, 10727.4, and 10727.6) have been incorporated into the Alternative. Prior to the Alternative, OCWD provided five groundwater management plans. The first was published in 1989 and its last was published in 2015. The Basin 8-1 Alternative is designed to be functionally equivalent to a groundwater sustainability plan and will be updated every five years per Sustainable Groundwater Management Act requirements (OCWD, 2021). Basin 8-1 Alternative demonstrates that the basin has operated within its sustainable yield over a period of at least 10 years.

Description of Basin. According to the MWDOC 2005 RUWMP, the Orange County Groundwater Basin is dominated by a deep structural depression, containing a thick accumulation of fresh water bearing inter-bedded marine and continental sand, silt, and clay deposits. The proportion of fine material generally increases toward the coast, dividing the Basin into Forebay and pressure areas. Consequently, most surface water recharge is through the coarser, more interconnected and permeable forebay deposits. Strata in this Basin are faulted and folded and may show rapid changes in grain size. The Newport-Inglewood fault zone parallels the coastline and generally forms a barrier to groundwater flow. Erosional channels filled with permeable alluvium break this barrier in selected locations called "Gaps'. In addition to this geologic feature, increased pumping from inland municipal wells causes the coastal gaps at Talbert, Bolsa, Sunset, and Alamitos to be susceptible to seawater intrusion. The sediments containing easily recoverable fresh water extend to about 2,000 feet in depth near the center of the Basin. Although water-bearing aquifers exist below that level, water quality and pumping lift make these materials economically unviable at present. Well yields range from 500 to 4,500 gallons per minute, but are generally 2,000 to 3,000 gallons per minute.

Upper, middle, and lower aquifer systems are recognized in the basin. The upper aquifer system has an average thickness of about 200 to 300 feet and consists mostly of sand, gravel, and conglomerate with some silt and clay beds. Generally, the upper aquifer system contains a lower percentage of water-bearing strata in the northwest and coastal portions of the area where clays and clayey silts dominate. Accordingly, recharge from the surface to the groundwater basin may be minor in these areas. Recharge to the upper aquifer system occurs primarily in the northeastern portions of the Basin. With the exception of a few large system municipal wells in the cities of Garden Grove, Anaheim, and Tustin, wells producing from the shallow aquifer system predominantly have industrial and agricultural uses. Production from the shallow aquifer system is typically about five percent of total Basin production.

The middle aquifer system, also known as the "principal" aquifer system, includes the lower Pleistocene Coyote Hills and San Pedro Formations, which have an average thickness of 1,000 feet and are composed of sand, gravel, and a minor amount of clay. The primary recharge of the middle aquifer system is derived from the Santa Ana River channel in the northeast of the County. The middle aquifer system provides 90 to 95 percent of the groundwater for the Basin.

Increasing accumulated overdraft of the Basin since the late 1990s has prompted increased evaluation of the Basin's yield and how the yield can be optimized through projects and programs. As a response to various factors, including a series of years with below average precipitation and the increased accumulated overdraft, in 2003 OCWD reduced the BPP to decrease pumping from the Basin. Currently, groundwater is produced from approximately 500 active wells within the Basin, approximately 300 of which produce less than 25 afy. Groundwater

production from approximately 200 large capacity or large system wells operated by the 21 largest water retail agencies account for an estimated 97 percent of the total production.

Working closely with OCWD, MWDOC has developed a water balance model, which incorporates OCWD's operating policies in managing the Basin. It is used to project the groundwater production for each producer in the Basin based on a range of assumptions provided by OCWD. Most of the assumptions involve replenishment supplies to the Basin. Historical groundwater flow was generally toward the ocean in the southwest, but modern pumping has caused groundwater levels to drop below sea level inland of the Newport-Inglewood fault zone. This trough-shaped depression encourages seawater to migrate inland, which if unchecked, could contaminate the groundwater supply. Strategic lines of wells in the Alamitos and Talbert Gaps inject imported and reclaimed water to create a mound of water seaward of the pumping trough to protect the Basin from seawater intrusion. In addition to operating the percolation system, OCWD also operates the Talbert Barrier in Fountain Valley and Huntington Beach and participates in the financing operation of the Alamitos Barrier in Seal Beach and Long Beach. The barriers help prevent seawater intrusion and also help refill the Basin (MWDOC RUWMP 2005). A link to the Orange County Groundwater Management Plan can be found in Appendix F of this report.

Recharge Supplies. Sources of recharge water include Santa Ana River base flow and storm flow, Santiago Creek flows, imported supplies purchased from MWD, supplemental supplies from the upper Santa Ana River watershed, and purified water primarily from the Groundwater Replenishment System (GWRS). The GWRS - the world's largest wastewater purification system for indirect potable reuse - is located in Fountain Valley and is operated by Orange County Sanitation District and OCWD. GWRS takes OCSD's highly treated wastewater and purifies it. The recycled supply is then used to recharge the Basin through spreading grounds along the Santa Ana River.

The GWRS is being expanded at this time to maximize water reuse. The project will increase treatment capacity from 100 mgd to 130 mgd. The final phase of the project is under construction and expected to be completed in 2023 (OCWD, 2021). This is a key project in reducing Orange County's reliance on imported Delta supplies.

Basin Overdraft. DWR has not identified the Basin as overdrafted. OCWD's Act defines annual basin overdraft to be the quantity by which production exceeds the natural replenishment of groundwater supplies during a water year. Efforts undertaken by OCWD to eliminate long-term overdraft in the Basin are described in OCWD's Master Plan and Groundwater Management Plan Update.

The accumulated overdraft is defined by the Act to be the quantity of water needed in the Basin Forebay to prevent landward movement of seawater into the fresh groundwater body. However, seawater intrusion control facilities have been constructed and are planned for construction

since the Act was written and have been effective in preventing landward movement of seawater into the fresh groundwater body. These facilities allow greater utilization of the Basin's storage capacity. In addition, spreading grounds adjacent to and within the Santa Ana River are managed to maintain groundwater levels.

6.2.2 Groundwater Recently Pumped

Table 6-1 presents the amount of groundwater pumped by the District over the previous five years. In 2020, the District's groundwater supply was significantly reduced which resulted in the District relying more heavily on imported water. It is anticipated that the District's full annual entitlement of 2,025 acre feet of groundwater will be available again in 2022.

The District obtains its groundwater through an Agreement with the City of Newport Beach. Newport Beach is located between the District's historical well location and the LBCWD service area. This agreement provides for Newport Beach to pump the District's groundwater and deliver it to the District's meter along the Coast Supply Line in Corona Del Mar. The groundwater supply is then mixed with the imported surface supply during transmission. Under the terms of the agreement, the District pays for its proportional share of the operations and maintenance costs associated with groundwater delivery. In addition, the District contributes to repair costs for any needed repairs to the groundwater system. The District does not own the facilities, but instead pays a portion of the use, maintenance, and repairs. The District also pays any fees owed to OCWD in association with the extraction of the groundwater, which is a requirement under the District's agreement with OCWD.

Submittal Table 6-1 Retail: Groundwater Volume Pumped

☐	Supplier does not pump groundwater. The supplier will not complete the table below.
☐	All or part of the groundwater described below is desalinated.

Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2016	2017	2018	2019	2020
Add additional rows as needed						
Alluvial Basin	Orange County Groundwater Basin	671	1,464	1,267	2,437	672
	TOTAL	671	1,464	1,267	2,437	672

NOTES: Groundwater service started in 2016. Reduction in 2020 due to Newport Beach increasing own supply due to PFAS in the OC Basin.

6.2.3 Groundwater Projected to be Pumped

With the emergence of PFAS affecting groundwater production in the Orange County Groundwater Basin, groundwater is not expected to be pumped by Newport Beach and delivered to the District until 2022. When treatment is in place, the amount the District has rights to, 2,025 afy, can again be pumped from the Basin. This entitlement is based on a court-approved quantity of supply available to the District. Groundwater levels fluctuate depending on numerous factors including Basin storage and Santa Ana River water capture, which are somewhat influenced by climatic conditions. During past single dry year and multiple dry year events, groundwater supplies were available in this non-adjudicated Basin, but at a higher price.

6.3 Surface Water

There are no self-supplied surface water supplies being used by the District other than purchased imported water.

6.4 Stormwater

Stormwater is not currently being intentionally diverted and captured within the District service area for beneficial reuse.

6.5 Wastewater and Recycled Water Opportunities

Recycled water provides a reliable and drought proof water source and could greatly reduce the region's reliance on imported supplies. Currently the District does not utilize or serve directly applied recycled water to any of its customers. However, the District has had discussions with other agencies to potentially provide up to 70 afy to the northern District service area for irrigation use along El Toro Road and Laguna Canyon Road. This supply may be available from the El Toro Water District by 2025.

6.5.1 Recycled Water Coordination

One hundred percent of the wastewater generated within the District's service area is collected and conveyed by the City of Laguna Beach to South Orange County Wastewater Authority's (SOCWA) regional Coastal Treatment Plant. SOCWA is a joint powers authority formed to provide operational efficiency through consolidation and is comprised of 10 member agencies including the City of Laguna Beach, EBSD, and SCWD.

6.5.2 Wastewater Collection, Treatment, and Disposal

Quantities of wastewater generated within the District service area are generally proportional to the population and water use in the service area. An estimate of wastewater flows from the

service area is presented in Table 6-2. Current wastewater flow from the District's service area, which does not include EBSD and South Laguna, is 1,154 afy. Flows were projected using population projections from Table 3-1 with a unit flow coefficient of 56 gpcd provided by MWDOC. As presented in Table 6-3, there is no wastewater treatment and discharge within the service area.

The 6.7 mgd Coastal Treatment Plant is located along Aliso Creek south of the District. The facility provides secondary treatment for all wastewater collected along the coast between Dana Point and Emerald Bay and has an average daily production of 3.47 mgd. The treatment unit operations at the plant include screening, aerated grit removal, primary clarification, activated sludge aeration, and secondary clarification. An average of 3.05 mgd of secondary treated wastewater is discharged into the Pacific Ocean through the Aliso Creek Ocean Outfall (SOCWA, 2011).

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020

☐	There is no wastewater collection system. The supplier will not complete the table below.
	Percentage of 2020 service area covered by wastewater collection system *(optional)*
	Percentage of 2020 service area population covered by wastewater collection system *(optional)*

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Add additional rows as needed						
City of Laguna Beach	Estimated	1,154	South Orange County Wastewater Authority	Coastal Treatment Plant	No	No
Total Wastewater Collected from Service Area in 2020:		1,154				

NOTES: Based on 56 gpcd flow factor provided by MWDOC.

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020

☑ No wastewater is treated or disposed of within the UWMP service area.
The Supplier will not complete the table below.

WWTP Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2020 volumes: Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Add additional rows as needed											
						Total	0	0	0	0	0

NOTES:

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area

☐ Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Supplier Producing (Treating) the Recycled Water:	El Toro Water District
Name of Supplier Operating the Recycled Water Distribution	El Toro Water District
Supplemental Water Added in 2020 (volume) *Include units*	NA
Source of 2020 Supplemental Water	NA

Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water (Quantity) *Include volume units*	General Description of 2020 Uses	Level of Treatment *Drop down list*	2020	2025	2030	2035	2040	2045 (opt)
Landscape irrigation (excludes golf courses)	Irrigation	70 AF	Irrigation	Tertiary		70	70	70	70	0
				Total:	0	70	70	70	70	0
				2020 Internal Reuse						

**IPR - Indirect Potable Reuse*

NOTES:

A portion of the secondary effluent, approximately 0.55 mgd, is reclaimed for irrigation use from the Advanced Wastewater Treatment Plant and used in the SCWD service area. The recycled water supply is produced by SOCWA for SCWD. The tertiary treatment process consists of chemical addition, coagulation, flocculation, filtration, and chlorine disinfection. The rated capacity of the tertiary treatment facilities is 4.2 mgd. In addition to the CTP, the Aliso Creek Ocean Outfall receives treated effluent from the SOCWA Joint Regional Plant, Los Alisos Water Reclamation Plant, El Toro Water Recycling Plant, and treated groundwater and brine discharges from the Irvine Desalter Project.

6.5.3 Recycled Water System

The biggest constraint to using recycled water within the service area is the distance from the source of this water supply. SOCWA's Coastal Treatment Plant is located in the adjacent city of Dana Point, miles from the District's service area. In addition, there are few locations, which are scattered, of large, irrigated turf areas within the service area, thus making delivery from any source cost prohibitive.

However, adjacent water districts with recycled water may be able to provide limited quantities to the District in the future. The District has had discussions with the El Toro Water District (ETWD) to identify common benefits to providing recycled water from its recycled water treatment facilities to the northeastern area of the District's system along El Toro Road (see Figure 1); this flow is currently discharged to the ocean. Approximately 70 afy of recycled water supply is being considered for delivery to the District after facilities are constructed by 2025. Table 6-4 presents the potential future direct use of recycled water in the District service area, which would be for landscape irrigation.

If it is determined to be cost effective, one to five miles of transmission mains would be constructed to serve the following potential customers over time.

- California Cove Homeowner's Association
- Caltrans District 12
- Terraces at Canyon Hill
- Southern California Edison
- Club Laguna/Shea Properties
- City of Laguna Beach

Levels of treatment anticipated from the El Toro Water District plant are tertiary. The use of recycled water by the District would provide customers with a highly reliable irrigation supply.

As presented in Table 6-5, the 2015 UWMP anticipated that 70 afy of recycled water would be utilized by 2020. Integration of this supply source is being studied for consideration in the District's supply portfolio in the future. Once a part of the system, the District will provide specific methods to encourage recycled water use. These efforts may include assurances of a highly reliable supply for landscape irrigation. Table 6-6 presents the method for integrating recycled water into the District system.

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual

☐	Recycled water was not used in 2015 nor projected for use in 2020. The Supplier will not complete the table below.	
Use Type	**2015 Projection for 2020**	**2020 Actual Use**
Landscape irrigation (excludes golf courses)	70	0
Total	70	0
NOTES:		

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use

☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.5	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
Obtain recycled water supply	Work with ETWD to obtain and deliver supply	2025	70
		Total	70
NOTES:			

6.6 Desalinated Water Opportunities

Two desalination water projects are being studied for Orange County: South Orange County Coastal Ocean Desalination Project and Huntington Beach (Poseidon) Seawater Desalination Project. The District may be interested in purchasing up to 1,000 afy of desalinated supply.

The Huntington Beach Seawater Desalination Project is a proposed 50 mgd/56,000 afy desalination project, located on property adjacent to the AES Generating Station on Pacific Coast Highway. Poseidon Resources LLC, a private company, is developing this project. In addition to offsetting imported water demand, water from this project could provide OCWD with management flexibility in the Orange County Groundwater Basin by augmenting supplies into the Talbert Seawater Barrier to prevent seawater intrusion.

In May 2015, OCWD and Poseidon entered into a Term Sheet to provide the overall partner structure to advance the project. Currently, the project is in the late stages of the regulatory permit approval process and Poseidon hopes to obtain the last discretionary permit necessary to construct the plant from the California Coastal Commission in the near future.

SCWD is pursuing a regional ocean desalination plant in Dana Point called the Doheny Desalination Project. This facility would produce a new water supply of 15 mgd/16,800 afy, which would not only improve system reliability but would improve water quality by providing a lower level of total dissolved solids. A lower-level total dissolved solids supply also benefits recycled water opportunities by improving the quality of the wastewater effluent being treated. The use of slant well intakes adjacent to San Juan Creek at Doheny State Beach was investigated and concluded it was feasible. The initial start-up and operation is anticipated to produce up to 5 mgd (5,600 afy). SCWD anticipates leaving the option open for other agencies to participate in a larger, 15 mgd facility with a future expansion, with subsequent permitting and construction of additional slant wells and treatment capacity.

6.7 Exchange or Transfer Opportunities

MWD, MWDOC, and OCWD will continue to explore opportunities for water exchanges and transfers that benefit the region and reduce reliance on Delta supplies. Water transfer opportunities using MWDOC and MWD facilities, as well as in-lieu options with OCWD and others are possible.

The District has several connections with neighboring water agencies that can be used as points of water transfer during short term and long-term needs. These connections were designed for emergency purposes only and not for permanent transfers. Water has been transferred in the past and could be transferred again on an emergency basis to adjoining purveyors. Since the District is a joint partner with several other agencies for imported water transmission facilities,

opportunities for transfer exist using the two transmission mains. In the past, for example, the jointly owned Coast Supply Line, which supplies the District, City of Newport Beach, and IRWD, was used to deliver approximately eight cubic feet per second of water to the District and SCWD from the City of Newport Beach during a seven-day shutdown of MWD's Diemer Treatment Plant in Yorba Linda.

Similar opportunities exist using the Aufdenkamp Transmission Main for transfers between IRWD, Santa Margarita Water District, SCWD, and the District. MWDOC spearheaded the South Orange County Water Reliability Study, which identified the potential for emergency exchanges between these agencies. No long-term transfers or exchanges are identified at this time for the District.

6.8 Future Water Projects

The District is coordinating with other agencies to pursue the use of recycled water in the future. In addition, MWD and MWDOC are pursuing water supply projects and programs, which will increase the reliability of imported supplies and augment supplies with regional projects. In addition, the District is considering participating in a regional desalination project. These future water supplies are presented in Table 6-7.

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs

☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Supplier *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
Recycled water	Yes	ETWD	in text		All Year Types	70
Desalinated water	Yes	MWDOC	in text		All Year Types	1,000
NOTES:						

6.9 Summary of Existing and Planned Sources of Water

Table 6-8 presents the water supply sources utilized by the District in 2020. As discussed earlier, groundwater conveyance was halted in 2020 due to PFAS in the Orange County Groundwater Basin. As presented in Table 6-1, 2,437 acre-feet was pumped in 2019.

Submittal Table 6-8 Retail: Water Supplies — Actual

Water Supply	Additional Detail on Water Supply	2020		
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Purchased or Imported Water	MWDOC/MWD	2,815	Drinking Water	
Groundwater (not desalinated)	District water conveyed via Newport Beach facilities	672	Drinking Water	
	Total	3,487		0
NOTES:				

Table 6-9 presents the supplies available to the District under its projected supply portfolio. The potable supplies reflect water that enters the District distribution system as production quantities. Purchased imported water quantities presented in Table 6-9 represent the average amount of water purchased by the District from MWDOC/MWD in the past ten years, which was 2,920 acre-feet. The groundwater supply entitlement is 2,025 afy. The District utilizes the groundwater first and meets its remaining needs with the purchased imported water.

The potential recycled water supply project being considered would be provided by ETWD through a nonpotable distribution system; quantities reflect production estimates entering its separate distribution system. The planned desalinated water would be from either of the two projects with conveyance details to be worked out at a later date.

Submittal Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		**2025**		**2030**		**2035**		**2040**		**2045** *(opt)*	
		Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Purchased or Imported Water	10 yr avg purchase	2,920		2,920		2,920		2,920		2,920	
Groundwater (not desalinated)	OC GW Basin	2,025		2,025		2,025		2,025		2,025	
Recycled Water	From ETWD	70		70		70		70		70	
Desalinated Water - Surface Water	Either of 2 projects	0		1,000		1,000		1,000		1,000	
	Total	5,015	0	6,015	0	6,015	0	6,015	0	6,015	0
NOTES: Purchased imported surface water from MWD/MWDOC volume based on 10 year average. Maximum purchase in previous 10 years was 3,925 in 2014. Purchases declined since 2016 when groundwater was provided. Groundwater based on entitlement.											

6.10 Special Conditions

Special conditions such as climate change and regulatory factors may affect the District's water supplies. As discussed previously, hydrologic conditions greatly affect surface water supplies. Regulatory conditions related to water quality can also affect the availability of supplies. Potential impacts to water supplies from climate change was discussed in Section 3.3. Although it certainly impacts the replenishment of groundwater supplies, climate change has a greater effect on surface water supplies because they are more directly impacted by seasonal hydrologic conditions.

MWD has conducted extensive analyses on impacts from climate change on its water supplies. The potential impacts and risks associated with climate change and other major uncertainties and vulnerabilities have been incorporated into its current integrated resources planning process. This includes potential climate change impacts to DWR's SWP supplies, and MWD's Colorado River supplies.

Regulatory conditions impacting the imported supply were assessed by MWD in its 2020 UWMP. Availability of SWP and Colorado River supplies incorporated restrictions on the SWP and Central Valley Project (CVP) operations in accordance with water quality objectives established by the SWRCB, biological opinions of the U.S. Fish and Wildlife Service and National Marine Fisheries Service issued on October 21, 2019, and the Incidental Take Permit issued by the California Department of Fish and Wildlife on March 31, 2020. In addition, amendments to the Coordinated Operations Agreement between the CVP and SWP made in 2018 were taken into consideration. In dry or below normal water year conditions, MWD increases supplies received from the California Aqueduct by developing flexible Central Valley/SWP storage and transfer programs, as well as other storage and transfer programs. The goal being to develop additional dry year supplies that can be conveyed through the California Aqueduct during dry conditions and Delta regulatory restrictions.

6.11 Energy Reporting

A new requirement of Water Code 10631.2(a) is the need to provide an estimate of the amount of energy used to produce and convey water supplies. Energy use for production and conveyance includes extracting or diverting supplies, conveying, treating, and storing and distributing water through the distribution system. Water supply energy intensity was calculated for the 2020 calendar year (January 1 thru December 31). This is a standard for energy and greenhouse gas reporting to the Climate Registry, California Air Resources Board, and the United States Environmental Protection Agency. Calendar year reporting provides consistency when assessing

direct and indirect energy consumption within a larger geographical context, as fiscal year starting dates can vary between utilities and organizations.

The District obtained energy consumption data from Southern California Edison. As presented in Table 6-10, the total volume of water entering the process in 2020 was 3,487 acre-feet and energy consumed was 1.8 million kWh. The energy intensity was 517 kWh per acre-foot or 168 kWh/million gallons.

Table 6-10: Energy Reporting (DWR Table O-1b)

Urban Water Supplier: *Laguna Beach County Water District*

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1B: Recommended Energy Reporting - Total Utility Approach

Enter Start Date for Reporting Period	1/1/2020	Urban Water Supplier Operational Control		
End Date	12/31/2020			
Is upstream embedded in the values reported? ☐		Sum of All Water Management Processes	Non-Consequential Hydropower	
Water Volume Units Used	*AF*	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (volume unit)		*3,487*	*0*	*3,487*
Energy Consumed (kWh)		*1,802,510*	*0*	*1,802,510*
Energy Intensity (kWh/vol. converted to MG)		*168*	*0.0*	*168*

Quantity of Self-Generated Renewable Energy

None kWh

Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

Metered Data

Data Quality Narrative:

Energy data provided by SCE, February 2021

Narrative:

Energy consumed is for the conveyance, storage, and distribution of both purchased imported water and groundwater.

Chapter 7 - Water Supply Reliability Assessment

7.1 Introduction

During the past decade, Southern Californians have faced significant challenges to their water supply. The District had the foresight to expand its portfolio of supplies by accessing its groundwater resource to reduce its vulnerability to seasonal and climatic variability. The District has worked hard to maximize its local resource to minimize imported water use. However, imported purchases remain an important source of supply. The District remains committed to maximizing the efficient use of groundwater and to managing both supplies to ensure that adequate supplies will be available to meet future water demands under various conditions while reducing its reliance on Delta water supplies.

Most of the imported supply has historically come from the Colorado River although improvements were made to MWD's system to allow greater flexibility in conveying northern California supplies from the SWP to Lake Mathews. MWD has aggressively pursued and obtained additional supplies to augment these two sources and is continuing to acquire additional supplies to increase supply reliability.

7.2 Water Supply Reliability Assessment

During the 20th century, California experienced three significant historical statewide droughts: the six-year event of 1929 to 1934, the two-year event of 1976 to 1977, and the six-year event of 1987 to 1992. In the decade prior to an unusually wet water year 2017, all but two years were drought years; the statewide drought of water years 2007 to 2009 was soon followed by the statewide drought of 2012 to 2016. The 2007 to 2009 drought marked the first time that a statewide proclamation of emergency was issued because of drought impacts. A statewide proclamation was repeated during the 2012 to 2016 drought (DWR 2020).

Because this UWMP reliability assessment is based on the availability of potable water supplies, not a constraint of increased costs to provide the supply, it is assumed that the District will increase its purchases of MWDOC supplies as necessary during dry years if the groundwater supply is limited. For this reliability analysis, purchases were assumed to not exceed historical purchases. Constraints on water sources and expected water service reliability for a normal year, single dry year, and five consecutive dry years projections for 2025 through 2045, are discussed here.

7.2.1 Constraints on Water Sources

The District's imported water supply is supplied by MWD/MWDOC (as described in Chapter 6) primarily from the Colorado River with the ability to receive SWP water which is conveyed through the Delta. In its draft 2020 UWMP, MWD identified risks and uncertainties that could potentially influence the reliability of its supplies associated with the following key factors.

- San Francisco Bay - Sacramento River/San Joaquin River Delta (Bay-Delta) challenges
- Water supply conditions

In addition, water quality challenges such as algae toxins, per- and polyfluoroalkyl substances (PFAS), and the identification of constituents of emerging concern, have a significant impact on the region's water supply conditions. The following discussion of key challenges is excerpted from the MWD 2020 UWMP for the purpose of providing context on the District's imported supply. (MWD, 2020 UWMP)

Bay-Delta Issues. About 30 percent of Southern California's water supply moves from Northern California through the Delta, a critical link, to pumps in the south Delta. Endangered species protection and conveyance needs in the Delta have resulted in operational constraints to pumping. The Delta's declining ecosystem and the difficulties operating the SWP system has led to factors that can result in export reductions from the Delta, releases of additional water from storage, other operational changes associated with endangered species, or water quality requirements.

The District, as a member agency of MWDOC purchasing water from MWD, is linked to all activities that impact supplies conveyed through the Delta. Not only do Delta restrictions impact SWP supplies, but also voluntary transfers, Central Valley storage and transfers, in-region groundwater storage, and in-region surface water storage. This section summarizes the following specific Delta challenges.

Previous efforts to develop the California WaterFix project (to improve operational reliability through the Delta) have been reconfigured for a single tunnel and is now called Delta Conveyance Project. This proposed project involves construction and operation of new Delta conveyance facilities augmenting existing SWP facilities. New intake facilities as points of diversion would be located in the north Delta along the Sacramento River between Freeport and the confluence with Sutter Slough. A single main tunnel would convey water from the new intakes to the existing Banks Pumping Plant and potentially the federal Jones Pumping Plant in the south Delta. These new facilities would provide an alternate diversion location from the Delta and would be operated in coordination with the existing south Delta pumping facilities.

Due to new information and science on declining listed fish species populations, the U. S. Bureau of Reclamation released the 2019 Biological Opinion and signed a Record of Decision completing its environmental review and adopting the 2019 Long-Term Operations Plan. The 2019 Long-Term Operations Plan and 2019 Biological Opinions are expected to increase SWP deliveries by an annual average of 200,000 acre-feet compared with previous Biological Opinions. On March 31, 2020, California Department of Fish and Wildlife issued a California Endangered Species Act (ESA) incidental take permit for the SWP that included further operational restrictions on outflow. The final approved project and incidental take permit reduce long-term average SWP deliveries by more than 200,000 which would erase any potential improvement in SWP water supply reliability anticipated to result from the 2019 Biological Opinions. According to the MWD 2020 UWMP, the continued decline of some fish populations and certain operational actions in the Bay-Delta may significantly reduce MWD's water supply availability. Future new or revised Biological Opinions or incidental take authorizations under the Federal ESA and California ESA might further adversely affect SWP and federal CVP operations.

In December 2018, the SWRCB adopted the Phase 1 Bay-Delta Water Quality Control Plan (Bay-Delta Plan) amendments and Final Substitute Environmental Document. The Phase 1 updates established new Lower San Joaquin River flow objectives and revised southern Delta salinity objectives. In July of 2018, the SWRCB released a framework that describes the draft proposal for Phase 2, which will update the flow requirements for the Delta and its contributing watersheds, including the Sacramento River and its tributaries. The framework provides additional details about the flow requirements staff is likely to propose, how these new requirements could be implemented, and preliminary information on their potential environmental benefits and water supply effects.

In addition to these key Bay-Delta challenges, new litigation, listings of additional species under the ESAs, or new regulatory requirements imposed by the SWRCB could adversely affect SWP operations in the future by requiring additional export reductions, releases of additional water from storage, or other operational changes impacting water supply operations. (MWD, 2020 UWMP)

Water Supply Conditions. As discussed in Section 6.1, swings in annual hydrologic conditions are evident with its impacts being felt most severely on MWD's SWP supply. Within the last decade, the SWP has experienced the lowest ever allocation of contract supplies, the lowest ever northern Sierra snowpack (affecting SWP's Feather River/ Lake Oroville supply), highest ever Sacramento River runoff, and the highest SWP allocation since 2006.

MWD's other significant supply source, the Colorado River basin, has also experienced large swings in annual hydrologic conditions, but these variations are buffered through a large volume of storage. However, analysis of historical records suggests a potential change in the relationship

between precipitation and runoff in the Colorado River basin which has contributed to a drying trend over the last 21 years. With Lake Mead and Lake Powell at less than 50 percent capacity there is practically no buffer to avoid a shortage from any future period of reduced precipitation and runoff.

Climate change is expected to shift precipitation patterns and affect reliability of water supplies, which will make water supply planning even more challenging. As discussed in Chapter 3, the areas of concern for California and the District's supplies include the reduction in snowpack, increased intensity and frequency of events, and rising sea levels. The general trend is of less water-storing snowpack and greater precipitation in the Sierras, more precipitation earlier in the year when it cannot be readily utilized, and more extreme and more frequent drought and flooding events. While uncertainties remain regarding the exact timing, magnitude, and regional impacts of climate change-related temperature and precipitation changes, researchers have identified the following specific areas of concern.

- Reduction in Sierra Nevada snowpack
- Reduction in Colorado River Basin snowpack
- Increased intensity and frequency of extreme weather events
- Rising sea levels resulting in impacts to coastal groundwater basins and levee failure in the Delta due to seawater intrusion, and increased risk of damage from storms, high-tide events, and the erosion of levees; and potential pumping cutbacks on the SWP and CVP due to salinity levels at the pumps

Groundwater Supply. The District's Orange County Groundwater Basin supply is actively managed by OCWD. OCWD has an extensive program to protect Basin water quality, which includes groundwater monitoring, participating in and supporting regulatory programs, remediation projects, working with groundwater producers, and providing technical assistance. A groundwater protection policy was adopted in 1987 in recognition of the serious threat posed by groundwater contamination. Efforts have focused on managing salinity and nitrates, along with synthetic organic contaminants. According to the OCWD, the water from this aquifer has always been of high quality. However, with the recent emergence of PFAS detected in the groundwater supply, wells have been shut down until a treatment process can be activated. OCWD and its retail water agencies are conducting a pilot program to test various treatment options for PFAS substances. According to OCWD, while the levels in the Basin are relatively low, they are exploring long term treatment solutions to continue to meet all state and federal water quality standards.

Purchased Imported Water Supplies. MWD's ability to ensure water supply availability and reliability to its member agencies is based in part on its Water Surplus and Drought Management

Plan (WSDM). MWD developed and adopted the WSDM Plan to provide policy guidance and manage regional water supply actions under both surplus and drought conditions to achieve the overall goal of ensuring water supply reliability to its member agencies as set forth in MWD's UWMP and Integrated Water Resources Plan. The WSDM Plan outlines various water supply conditions and corresponding actions MWD may undertake in response to moderate, serious, and extreme water shortages. Under Condition 1, MWD issues a Water Supply Watch and encourages local agencies to implement voluntary dry year conservation measures and utilize regional storage reserves. Under Condition 2, MWD issues a Water Supply Alert and calls for cities, counties, its member agencies and all other retail water providers to implement extraordinary conservation through drought ordinances and other measures to minimize the use of storage reserves.

Under Condition 3, MWD may implement its Water Supply Allocation Plan (WSAP), which allocates available water supplies among its member agencies based on factors such as impacts to retail customers, population and projected growth of particular member agencies, availability of recycled water and other local supplies, conservation efforts, and other factors. At times when the WSAP is implemented, MWD member agencies do not lose their ability to receive any particular amount of imported water supplies, but instead MWD places limits on the amount of water its member agencies can purchase without facing a surcharge. In turn, MWDOC also developed a WSAP to allocate imported supplies at the retail level in its service area. Under these WSAPs, the availability of imported water supplies is based primarily on the need for imported supplies relative to the total need for those supplies within the MWD and MWDOC service areas.

In response to prolonged drought conditions, in April 2015 MWD declared a Condition 3 shortage and decided to implement its WSAP with the goal of achieving a 15 percent reduction in regional deliveries to its member agencies starting on July 1, 2015. Importantly, MWD has confirmed that implementation of its WSAP merely involves the potential application of a surcharge to those member agencies whose deliveries of water from MWD exceed their allocations, but it does not otherwise prohibit or restrict such deliveries.

To improve long term supply availability and reliability for the region, MWD has developed an adaptive management strategy as a part of its integrated resource planning process. Reliability targets were established for imported and local water supplies and water conservation to, if successful, provide a future without water shortages and mandatory restrictions under planned conditions. For imported supplies, MWD looks to make investments in additional partnerships and initiatives to maximize Colorado River Aqueduct deliveries in dry years. For the SWP, MWD is looking to make ecologically-sound infrastructure investments so that the water system can capture sufficient supplies to help meet average year demands and to refill MWD's storage network in above average and wet years. Lowering regional residential demand by 20 percent by

the year 2020, reducing water use from outdoor landscaping, and advancing additional local supplies are among the actions MWD undertook to keep supplies and demands in balance.

It is important to note that MWD through MWDOC has always been able to provide the supply needed by the District. Based on the MWD 2020 UWMP conclusions, it is expected that this imported supply would continue to provide a reliable source of water to the District. As such, any supply gaps identified in the reliability analysis do not necessarily represent lack of supply but rather the amount of supply that would be more costly to purchase consistent with MWD's WSAP penalty fees. And given the drought conditions experienced recently that are anticipated to occur more frequently in the future due to climate change, any potential supply gaps represent a risk to the District's future water supply costs that, if available, may be better balanced with the more cost-effective groundwater supply that would also increase water reliability.

7.2.2 Year Type Characterization

Climatological data in California have been recorded since the year 1858. During the twentieth century, California experienced four periods of severe drought: 1928-34, 1976-77, 1987-92, and 2011-current. The year 1977 is considered to be the driest year of record in the Four Rivers Basin by DWR. These rivers flow into the Delta and are the source waters for the SWP, thus MWD's selection as the single driest base year. However, Southern California and, in particular Orange County, sustained few adverse impacts from the 1976-77 drought, due in large part to the availability of Colorado River water and groundwater stored in the Basin. The 1987 to 1992, 2000 to 2003, 2007 to 2009, and 2012 to 2016 droughts had a greater impact on Southern California.

To analyze the variability of reliability due to climate, hydrologic conditions that define year types were determined. The years identified in Table 7-1 reflect these year types: average, single dry year, and multiple dry years. The year types were selected by MWD and used here since MWD's imported supplies were the predominant District water supply and are more vulnerable to shortages than the District's groundwater supply and future recycled water and desalination supplies, thus presenting the most conservative levels of reliability. As presented in Table 7-1, the MWD 2020 UWMP assumes 100 percent reliability under all three hydrologic conditions in the future. The District's groundwater supply is also 100 percent reliable during all year types based on MWDOCs 2020 UWMP.

Average/Normal Water Year. The normal year most closely represents median runoff levels and patterns. Supply quantities for this condition are derived from historical average yields. MWD considers 1922 through 2017 representative of the water supply conditions it considers available during a normal water year. MWDOC is using the average of FY18 and FY19 as the normal water year.

Single Dry Water Year. The single dry year is defined as the year with the minimum useable supply. The supply quantities for this condition are derived from the minimum historical annual yield. MWD identified 1977 conditions to represent the lowest water supply available. MWDOC is using FY14 as its single dry year.

Multiple Dry Water Years. Multiple dry years are defined as five consecutive years with the lowest average water supply availability. Water systems are more vulnerable to these droughts of long duration because they deplete water storage reserves in local and state reservoirs and groundwater basins. MWD identified 1988 through 1992 as the driest five consecutive year historical sequence for its water supply. MWDOC is using FY12 through FY16 to represent its multiple dry years.

The base years for the water year data for purchased imported supplies are presented in Table 7-1a. MWD's 2020 UWMP assumes 100 percent reliability under all three hydrologic conditions in the future. MWD has extensive programs and plans to increase supply reliability which are addressed in its 2020 UWMP. MWD has determined in its 2020 UWMP that the region can provide reliable water supplies under both the single driest year and the multiple dry year hydrologies, with a surplus of supply for all dry year scenarios through 2045 (MWD, 2020).

Table 7-1b presents the basis of water year data for the groundwater supply from the Orange County Basin. The groundwater supply has proven to be 100 percent reliable during these year types. These local groundwater supplies are managed by OCWD; the BPP is established each year depending on numerous factors including basin storage and Santa Ana River water capture, which are influenced by climatic conditions. During past single dry year and multiple dry year events, groundwater supplies were available in this non-adjudicated Basin.

Submittal Table 7-1a Retail: Basis of Water Year Data (Reliability Assessment) - PURCHASED IMPORTED SUPPLY			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020*	**Available Supplies if Year Type Repeats**	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	Average of 1922 to 2017		100%
Single-Dry Year	1977		100%
Consectutive Dry Years 1st Year	1988		100%
Consectutive Dry Years 2nd Year	1989		100%
Consectutive Dry Years 3rd Year	1990		100%
Consectutive Dry Years 4th Year	1991		100%
Consectutive Dry Years 5th Year	1992		100%
Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES: Assumption of 100% purchased water reliability based on MWD 2020 UWMP. Groundwater is addressed in Table 7-1b.			

OPTIONAL Table 7-1b Retail: Basis of Water Year Data (Reliability Assessment) - GROUNDWATER			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020*	**Available Supplies if**	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	2006		100%
Single-Dry Year	2013		100%
Consectutive Dry Years 1st Year	2012		100%
Consectutive Dry Years 2nd Year	2013		100%
Consectutive Dry Years 3rd Year	2014		100%
Consectutive Dry Years 4th Year	2015		100%
Consectutive Dry Years 5th Year	2016		100%
Supplier may use multiple versions of Table 7-1 if different water sources have different base years			
NOTES: Assumption of 100% reliability of groundwater based on MWDOC 2020 UWMP. Purchased supply is addressed in Table 7-1a.			

7.2.3 Water Service Reliability

An assessment of the District's water supply reliability during each of the water year types for the next twenty five years is presented here. Responses to an actual drought follow the water use efficiency mandates of MWD's WSDM Plan, along with implementation of the appropriate stage of the District's water shortage ordinance and Water Shortage Contingency Plan presented in Chapter 8. The District supplies are capable of meeting retail and wholesale demands in all hydrologic year types through 2045, even with an increase in dry year demands in the service area. An assessment of the District's water supply reliability during each of the water year types for the next twenty-five years is presented here.

Water Service Reliability - Normal Year. Based on the District's groundwater and imported water supplies identified in Tables 7-1a and 7-1b, average year availability was compared to projected average year demands through 2045. Future water supplies were presented in Table 6-9 and include imported water quantities based on the 10-year average of District purchases. This comparison, presented in Table 7-2, indicates that water supplies will be available to meet District demands during a normal water year. As discussed in Chapter 4, the District has limited

growth potential resulting in very little increase to demands. Demands can be met with existing supplies.

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	5,015	6,015	6,015	6,015	6,015
Demand totals *(autofill from Table 4-3)*	3,487	3,747	3,800	3,773	3,664
Difference	1,528	2,268	2,215	2,242	2,351
NOTES:					

Water Service Reliability - Single Dry Year. Supplies and demands for the District service area were analyzed to determine impacts associated with a single dry year. The projected single dry year water supply presented in Table 7-3 is based on 100 percent availability of the two existing sources presented in Table 6-9.

For reliability planning, an increase in District demands associated with a single dry year was calculated. Water demands typically increase during the first dry year before it is apparent that it will be a dry year and before demand management outreach is implemented. The first year of the recent 2012 to 2016 drought resulted in an increase of 8.1 percent in retail demands. Water demands presented in Table 7-3 were increased 8.1 percent for this first dry year. There is no increase in sales to EBSD assumed for this reliability scenario. Although additional supplies are available, supplies in Table 7-3 were matched to demands. The District can provide reliable water supplies under the single driest year hydrology with reduced supplies to meet the dry year increase in demands.

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals	3,953	4,010	3,981	3,964	3,938
Demand totals	3,953	4,010	3,981	3,964	3,938
Difference	0	0	0	0	0
NOTES: Includes 272 AF sales to EBSD					

Water Service Reliability - Five Consecutive Dry Years. Supplies and demands for the District service area were analyzed to determine impacts associated with multiple consecutive dry years. The projected multiple dry year water supply is based on 100 percent availability of purchased imported water and groundwater as reflected in Tables 7-1a and 7-1b. Supply totals through 2045 are presented in Table 7-4 for the multiple dry year scenario.

Water demands were also analyzed for this multiple dry year scenario. As was done with the single dry year demands, projected water demands from Table 4-3 were increased 8.1 percent during the first year to reflect a dry year increase associated with drier weather, before additional conservation programs are implemented. The second single dry year reflected a 2.3 percent increase based on the service area response to the recent drought. Sales to EBSD were not increased to reflect a bump in demands.

Although there was a strong customer response to District conservation outreach in 2015 (14 percent decrease in demands) and savings in 2016 (7.7 percent decrease in demands over 2013 demands), the third through fifth dry year water demands presented in Table 7-4 more conservatively reflect normal demands, not the decreased water usage that actually occurred. Table 7-4 presents the comparison of projected multiple dry year water supply availability over the next 25 years to the multiple dry year water demands which were increased for the first two years. Although additional supplies are available, supplies in Table 7-4 were matched to demands. Table 7-4 demonstrates that the region can provide reliable water supplies under the multiple dry year hydrology with reduced supplies to meet the bumped increase in demands.

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	3,953	4,010	3,981	3,964	3,938
	Demand totals	3,953	4,010	3,981	3,964	3,938
	Difference	0	0	0	0	0
Second year	Supply totals	3,767	3,804	3,779	3,761	3,742
	Demand totals	3,767	3,804	3,779	3,761	3,742
	Difference	0	0	0	0	0
Third year	Supply totals	3,698	3,719	3,697	3,678	3,664
	Demand totals	3,698	3,719	3,697	3,678	3,664
	Difference	0	0	0	0	0
Fourth year	Supply totals	3,709	3,714	3,694	3,673	3,664
	Demand totals	3,709	3,714	3,694	3,673	3,664
	Difference	0	0	0	0	0
Fifth year	Supply totals	3,719	3,708	3,690	3,668	3,664
	Demand totals	3,719	3,708	3,690	3,668	3,664
	Difference	0	0	0	0	0
NOTES: Includes 272 AF sales to EBSD						

7.2.4 Management Tools and Options

Water management tools and options to maximize local resources and minimize the need to import water from the Colorado River and Delta have been developed over the years. These highly reliable supplies reflect planning and forward thinking the District has undertaken to develop its supply portfolio. Actions include participating in MWDOC's regional conservation and supply augmentation programs, obtaining its local groundwater supply to decrease reliance on imported supplies, managing its supply sources to ensure all sources are maintained and made available for the future at needed quantities, and demand management activities.

As a member of MWDOC and recipient of MWD supplies, the District is indirectly receiving water under a "covered action" by MWD's participation in the Delta Conveyance Project. Reducing reliance on imported supplies is a key component of the success for any supply planning involving the Delta. An urban water supplier that anticipates participating in or receiving water from a proposed project (covered action) such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Delta should provide information in their 2015 and 2020 UWMP that can be used in the certification of consistency process to demonstrate consistency with Delta Plan Policy WR P1, *Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance* (DWR, 2021).

The Bay-Delta Plan is a comprehensive, long-term resource management plan for Delta that was developed as part of the Delta Reform Act of 2009 (Water Code Section 85000 et seq) and includes both regulatory policies and recommendations, aimed at promoting a healthy Delta ecosystem. Delta Plan Policy WR P1 (California Code of Regulations, Title 23, § 5003) is one of fourteen regulatory policies in the Delta Plan. WR P1 identifies UWMPs as the tool to demonstrate consistency with state policy to reduce reliance on the Delta for any supplier that is participating in or carrying out a proposed covered action or receiving Delta water from a proposed covered action. Within the supplier's UWMP, information should be provided that can be used to demonstrate consistency with this policy. Section (c)(1) of WR P1 states that suppliers that have (a) completed an UWMP, (b) implemented the efficiency measures in that plan, and (c) shown a measurable reduction in Delta reliance and improvement in regional self-reliance in the plan, are contributing to reduced reliance on the Delta and are therefore consistent with WR P1 (CCR, Title 23, § 5003(c)(1)).

MWD continues to develop its supply portfolio to reduce dependence on Delta supplies, particularly during dry and multiple dry years. Projects include multi-year water transfers and new diversion and conveyance facilities exporting water from the Delta. MWD's reliance on supplies from the Delta watershed are expected to decrease by 314,000 acre-feet over the 2010 baseline, a decrease of about five percent of 2045 demands. Increased regional self-reliance primarily comes from water use efficiency, conjunctive use projects, water recycled, and local/regional water supply and storage projects.

MWD has prepared a detailed analysis that demonstrates consistency with the Delta Plan policy WR P1 (MWD 2020 UWMP, Appendix 11). Although the District and MWDOC have no control over the sources of water MWD provides, consistency with the Delta Plan Policy WR P1 documented in MWD's UWMP is incorporated here by reference.

On a regional level, MWDOC and its member agencies also meet the three criteria of Section (c)(1) of WR P1. MWDOC and its member agencies completed UWMPs in 2015 and will be submitting UWMPs for 2020. These UWMPs identify future local supply opportunities and water

use efficiency measures that will increase regional self-reliance and reduce reliance on Delta supplies. MWDOC is continuing to look into local, cost-effective, and technically feasible water supply sources, such as desalination, as described in their 2020 UWMP.

A measurable reduction in Delta reliance and improvement in regional self-reliance can be seen from the achievements of the past five years of water use efficiency and the projections for using recycled water to recharge the Basin. OCWD/OCSD will continue to increase the capacity of their facilities to increase the amount of recycled water available to recharge the Basin. MWDOC and its retail agencies remain committed to enhancing local supply and implementing water use efficiency measures to reduce their demand on imported water, thereby reducing reliance on the Delta.

On a local level, the District also meets the three criteria of Section (c)(1) of WR P1 - Reduce Reliance on the Delta Through Improved Regional Water Self Reliance. It prepared an UWMP in 2015 and will be submitting this 2020 UWMP. It has implemented effective efficiency measures over the years as reflected in its ability to meet the SB X7-7 targets for 2015 and 2020. The District's development of local groundwater supplies and considering participating in the use of recycled water all demonstrate consistency with the Delta Plan policy WR P1 by diversifying local supplies. Diversifying supplies improves water supply reliability, and it reduces dependence on supplies from the Delta watershed. Appendix G presents the District's compliance with WR P1.

7.3 Drought Risk Assessment

The newly required Drought Risk Assessment (DRA) offers an opportunity to test the District's near-term supply reliability by assuming the next five consecutive years are dry. The analysis of a five-year drought beginning in 2021 reflects the water service reliability assessment required under Water Code Section 10635(b).

7.3.1 Data, Methods, and Basis for Shortage Condition

Data, methods, and the basis for water shortage conditions are described here. The District has a diverse portfolio of local groundwater and imported supplies. The assessment of imported water supplies took into consideration historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other applicable criteria utilized in assessing each of its supplies.

The DRA was based on the assumption that the five driest consecutive years on record for the water supplier will occur over the next five years, starting in 2021. This hydrologic sequence was discussed in Section 7.2 above and reflects the availability of imported supplies during the 1988 to 1992 drought and groundwater supply availability during the most recent drought of 2012 through 2016. Changes that may influence the DRA include wetter or drier monthly and annual

hydrology due to normal and climate change-induced conditions, and an increase in the availability of imported supplies due to MWD enhancing its supply portfolio.

Normal unconstrained projected water use (demands) identified in Chapter 4 was used here as the base demands to compare against supply availability, and prior to determining if implementation of any shortage actions is needed to reduce these demands. The 2020 water demands were increased annually over five years to match 2025 projected demand.

Accounting for changes in demands due to dry year conditions, as noted in Table 7.4, because demands increased 8.1 percent during the first year and 2.3 percent during the second year of the recent fiveyear drought, it was conservatively assumed demand would increase again in the first two years of a new drought. Aggressive conservation outreach resulted in an actual reduction in demands of 14 percent in 2015. However, to be conservatively high, the first two years of an increase and then average demands (instead of lowered demand) for the following three years were utilized in the DRA assumptions of demand response during a drought.

7.3.2 Assessment Water Source Reliability

It is likely that the next five-year drought will not replicate the historical drought hydrology exactly due to variability in climatic conditions. However, not knowing what the exact variability will be, the basis for the DRA is based on actual conditions that occurred; therefore, data from historical multiple year droughts were utilized for supplies while the more recent response to a multiple year drought was used for demands.

The District relies heavily on the utilization of groundwater and imported water to meet demands within its service area. In determining the reliability of each water source, the MWD and MWDOC 2020 UWMPs were reviewed for the assessment of reliability of water supplies. It is documented that the imported supply and groundwater supply were 100 percent reliable during the previous two multiple year droughts. MWD has stated that its supplies will be fully reliable during the next multiple year drought under most if not all conditions. This includes MWD's emergency supplies that have been accessed in the past and are a part of the supply portfolio.

7.3.3 Total Water Supply and Use Comparison

Table 7-5 demonstrates supply reliability during a hypothetical five-year drought starting in 2021. Because of the highly reliable water supplies the gross water use can be met with current supplies, even if the current halt on the use of groundwater is continued. Supplies do not need to be augmented over this five-year period to meet the demands (including the increased first two years) and demand reductions are not required to be implemented to meet available supply. The District has a very effective water use management program under dry year or emergency conditions that is employed as needed and has historically resulted in significant reductions in

water demand. Again, the Drought Risk Assessment was conservative in not reflecting the reduction in water demands by the third year yet there is no shortfall due to the ability to increase the purchase of additional supplies.

In accordance with the analysis provided herein, and as documented in the 2020 UWMPs prepared by MWD and MWDOC, the District is capable of meeting its customers' water demand in all hydrologic year types through 2045, even with a potential increase in dry year demands. Therefore, the District's supply portfolio is reliable under all conditions conceivable. The reliable supplies reflect not only regional projects and comprehensive water supply planning by MWD and MWDOC, but also the forward-thinking planning and efforts the District has undertaken to develop its local water supply and conservation programs, thus greatly reducing reliance on imported supplies. It should be noted that MWD's Drought Risk Assessment shows a surplus of supplies available to its member agencies, including MWDOC.

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)	
2021	**Total**
Gross Water Use	3,789
Total Supplies	3,789
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0
2022	**Total**
Gross Water Use [Use Worksheet]	3,639
Total Supplies [Supply Worksheet]	3,639
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%
2023	**Total**
Gross Water Use [Use Worksheet]	3,601
Total Supplies [Supply Worksheet]	3,601
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%
2024	**Total**
Gross Water Use [Use Worksheet]	3,639
Total Supplies [Supply Worksheet]	3,639
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%
2025	**Total**
Gross Water Use [Use Worksheet]	3,677
Total Supplies [Supply Worksheet]	3,677
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	0%
NOTE: Includes 272 AF sales to EBSD	

Chapter 8 – Water Shortage Contingency Plan

Due to more frequent water shortage conditions, water shortage contingency planning is taking on greater importance in California. Actions are presented here that will be taken by the Laguna Beach Water District (LBWD or District) within its retail service area in the event of a reduction in water supplies. This Water Shortage Contingency Plan (WSCP) has been developed in accordance with California Water Code Section 10632(a). Although the District has a robust portfolio of water supplies that are highly reliable, the purpose of this WSCP is to demonstrate in structured steps how the District intends to act in the case of an actual water shortage condition. This WSCP is for the District's retail system; it sells water to Emerald Bay Services District but has no control of water shortage contingency planning for its service area.

8.1 Water Supply Reliability Analysis

As discussed in Chapter 6 of the 2020 LBCWD Urban Water Management Plan (UWMP), the District's water supplies are imported MWD treated water and the Orange County Groundwater Basin (Basin). Water supply quantities available to the District are presented in Table 8-1. Groundwater is based on the District's entitlement. Purchased imported water is based on the 10-year average use by the District. Both the groundwater and purchased supplies can be obtained at greater quantities, as needed.

Table 8-1: Water Supply Availability

Supply	Reasonably Available Volume
Groundwater	2,025
Purchased Surface Water from MWD	2,920
Total	4,945
NOTES: See Chapter 6 in the LBCWD 2020 UWMP for a description of supplies.	

Chapter 7 of the 2020 UWMP describes the reliability of the District's water supplies and customer demands over time and under dry year conditions. The groundwater supply from the Orange County Groundwater Basin is highly reliable and carefully managed by Orange County Water District (OCWD). Although the current Basin Production Percentage (BPP) is 77 percent, anticipated to increase to 82 percent by 2025, the District has its own rights to 2,025 acre-feet per year (afy). During 2020, this supply was curtailed due to regulatory concerns regarding per-

and polyfluoroalkyl substances (PFAS) detected in the groundwater basin. This in turn required the City of Newport Beach to reduce the amount of District groundwater wheeled through its transmission system to the District service area. Imported water utilization was increased.

The purchased supply of imported water is provided by Metropolitan Water District (MWD) through Municipal Water District of Orange County (MWDOC) and is also considered a highly reliable water supply. The quantity provided in Table 8-1 is based on the total amount purchased in FY15, during the peak of the multiple year Statewide drought. Availability during a Statewide shortage reflects how highly reliable the purchased supply is. Operationally, under normal times, the District can now increase its groundwater or purchased supply to meet demands. If the groundwater supply is limited, as is currently the case, the District can rely entirely on purchased imported water as it did so many years before it obtained access to its groundwater supply in 2016.

LBCWD water use in 2020 and demands projected for 2025 through 2040 are summarized in Table 8-2. These demands are for normal conditions and include Emerald Bay Services District (EBSD).

Table 8-2: Water Demand - Existing and Projected

	2020	2025	2030	2035	2040	2040
Laguna Beach CWD	3,215	3,405	3,458	3,431	3,415	3,392
EBSD	272	272	272	272	272	272
TOTAL	3,487	3,677	3,730	3,703	3,687	3,664

NOTE: Data from LBCWD 2020 UWMP Tables 4-1 and 4-2.

Water demands typically increase during the first year of a drought, followed by a decrease to below average demand in subsequent years until hydrologic conditions change and outreach efforts subside. Although the District's demand decreased in 2012, the first year of a multi-year drought, it then increased in 2013 by 8.1 percent followed by an increase of 2.3 percent the following year. To be conservative, these increases of 8.1 percent were used in this reliability analysis as the single dry year increase and the first two dry year increases in a multiple year drought. An increase of 8.1 percent anticipated in the first dry year is reflected in the projected demands presented in Table 8-3.

Table 8-3: Projected Single Dry Year Supply and Demand (From UWMP Table 7-3)					
	2025	2030	2035	2040	2040
Supply totals	3,953	4,010	3,981	3,964	3,938
Demand totals	3,953	4,010	3,981	3,964	3,938
Difference	0	0	0	0	0
NOTES: Single dry year includes 8.1% increase in demand. Supplies reflect availability of all supplies to meet demands. Sales to EBSD of 272 AF included.					

The issues that can lead to a shortage in one or more of the District's supplies include the following. Most threats, except drought, have a low probability but if the threat affects both supply sources, it could have a high impact.

- Drought and extreme droughts due to climate variability
- Power outage
- Catastrophic event in the Delta such as an earthquake, dam failure, or levee failure
- Natural disaster such as a local, regional, or statewide earthquake or fire
- Outage of key conveyance facilities such as the SWP's California Aqueduct, MWD's Colorado River Aqueduct, or MWD's Diemer WTP or East OC Feeder No. 2
- Regulatory restrictions such as water quality standards for emerging contaminants or environmental restrictions on Delta pumping
- Water quality contamination of regional supplies inadvertently or as intentional acts of sabotage

For many agencies, these supply disruptions can result in significant shortages to the availability of supplies. For the District, outages can result in changes to District operations such as relying on the remaining available supply to meet system demands and increased outreach efforts to reduce customer demand for water.

In accordance with the analysis provided herein, and as documented in the 2020 UWMPs prepared by MWD and MWDOC, the District is capable of meeting its customers' water demand in all hydrologic year types through 2045, even with a potential increase in dry year demands. Therefore the District's supply portfolio is reliable under all conditions conceivable. The reliable supplies reflect not only regional projects and comprehensive water supply planning by MWD and MWDOC, but also the forward thinking planning and efforts the District has undertaken to develop its local water supply and conservation programs, thus greatly reducing reliance on imported supplies. It should be noted that MWD's Drought Risk Assessment shows a surplus of supplies available to its member agencies, including MWDOC.

8.2 Annual Water Supply and Demand Assessment Procedures

8.2.1 Annual Assessment

Urban water suppliers are required to submit an annual water supply and demand assessment report (called annual assessment) to DWR, in compliance with Water Code Section 10632(a). This new report, pursuant to California Water Code Section 10632(a)(2) is due starting in 2022. Because the District receives some amount of water from the State Water Project, the annual assessment must be submitted within 14 days of receiving its final allocations or by July 1 or each year, whichever is later. DWR will develop a guidance document to recommend procedures and analytical methods to be used at the District's discretion to effectively and efficiently comply with the Annual Assessment requirement. Appendix P of the UWMP Guidebook will provide guidance. As of this date, UWMP Appendix P has not been released by DWR.

The District's Annual Assessment is a written decision-making process used to determine an anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions, as described here in this WSCP. The District may reevaluate the functionality of its WSCP process at any time between its submittals to DWR every five years and make appropriate adjustments if warranted.

Assessment Step 1: Table 8-4 provides a reporting tool for the annual assessment. It begins with a determination of the following factors with Year 2021 considered the current year.

- Current year unconstrained water demand
- Infrastructure constraints, if any
- Current year total available supplies anticipated
- Resulting anticipated shortages or surplus

Because the Annual Assessment must assume that the following year will be a dry year, the following factors are also anticipated. Year 2022 is used as the second year in Table 8-4.

- Next year unconstrained water demand
- Infrastructure constraints, if any
- Next year total available supplies anticipated
- Resulting anticipated shortages, if any

Assessment Step 2: Taking these factors into consideration, the next step is to decide on the applicability of one or more of the assessment scenarios that follow in the table. The assessment scenarios begin with "normal" conditions not meriting any shortage response actions followed by the dry year scenario and various supply reduction or outage scenarios.

- Assessment Scenario #1: Normal Year
- Assessment Scenario #2: Dry Water Year
- Assessment Scenario #3: Catastrophic Interruption or Other Short Term Impact to Imported Supply
- Assessment Scenario #4: Catastrophic Interruption or Other Short Term Impact to Groundwater Supply
- Assessment Scenario #5: Catastrophic Interruption or Other Long Term Impact to either supply

For each of these assessment scenarios, hydrologic and regulatory conditions to monitor are provided. When it has been determined that the District supplies reflect some form of a shortage or outage, an assessment scenario is then identified based on one of the five provided in Table 8-4 (which can be modified as needed to reflect the shortage conditions). Evaluation criteria are provided to determine the potential extent of the supply shortage; the evaluation criteria are to be amended to reflect the actual conditions. When conditions no longer meet the evaluation criteria, the scenario may no longer be applicable. There may be other conditions to monitor and evaluation criteria to consider in addition to those listed in Table 8-4.

For each assessment scenario, service area water demands (before demand reduction activities, called unconstrained demands) are input. The Operations Plan identifies the prioritization of supply, if needed, and the quantities likely to be available by applying the evaluation criteria. The supplies minus demand will determine if a WSCP supply shortage level is triggered.

Once a supply shortage is triggered, shortage response actions can then be identified based on demand reduction activities. Demand reduction activities refer to the WSCP actions reflecting the six levels of supply shortage (discussed next in this chapter) and detailed procedures. Supply augmentation activities refer to the Operations Plan listed in each table of Table 8-4.

This approach to the annual assessment allows the District to identify hydrologic and regulatory conditions and evaluation criteria, along with the anticipated unconstrained demand and potentially available supplies, to be assessed under various dry year or outage scenarios. The anticipated shortage is identified which triggers the shortage response actions, compliance and enforcement actions, and communication actions associated with one of the six DWR shortage levels discussed in the next section.

TABLE 8-4: LBCWD Annual Water Supply & Demand Assessment (Annual Assessment)		
ANNUAL ASSESSMENT REPORT SUBMITTED TO DWR:		7/1/2021
CURRENT YEAR		
Current year unconstrained demand (AF)	2021	3,525
Infrastructure constraints		No groundwater due to regulatory concern
Current year total available supply (AF)		
Groundwater (entitlement 2,025 AF)		0
Purchased imported water (available to meet demand)		3,525
Supply Availability		3,525
Supply shortage or surplus		**0**
Supply Shortage Level expected this year:		None
NEXT YEAR - Assumed Single Dry Year		
Second year unconstrained demands, assuming dry year	2022	3,830
2nd year infrastructure constraints		No groundwater due to regulatory concern
Groundwater (entitlement 2,025 AF)		2,025
Purchased imported water (available to meet demand)		1,805
Supply Availability		3,830
Shortage or surplus supply availability		**0**
Supply Shortage Level expected next year:		None
Anticipated Assessment Scenario		#2: Dry Water Year
NOTE: Demand in 2021, and 2022 as the 1st dry year, is from UWMP Table 7-5 inc. sales to EBSD		
Explanation of information provided above: Demand in 2021, and 2022 as the 1st dry year, is from 2020 UWMP Table 7-5. Sales to EBSD are included. See Assessment Scenarios for evaluation criteria for determination of a normal year or if a potential shortage is anticipated to occur.		

Table 8-4, continued

DATE: 7/1/2021 Laguna Beach County Water District

Assessment Scenario #1: Normal Water Year			
Hydrologic and Regulatory Conditions -Customer unconstrained demands -Groundwater availability -SWP supply conditions -MWD's Colorado River supply availability -Regulatory conditions **Evaluation Criteria** -Monthly production data indicates no significant deviation from monthly average -DWR supply reports indicate average SWP availability -MWD's Colorado River supply has average availability -MWDOC's monthly Water Supply Condition update report June 1 indicates average -Newport Beach's ability to convey identified			
Unconstrained Demand: 2021 Average Year Demand		**3,525**	
Scenario #1 Prioritization of Supplies Used	**Supply Sources**	**Available Quantity (AF)**	**Operations Plan**
1	Groundwater	2,025	Use groundwater supply first
2	Imported	3,525	Use imported water last
Note: Groundwater entitlement 2025 AF. Purchased imported water assumed available to meet unconstrained demand			
Shortage Response Actions Triggered Demand Reduction Activities: None Supply Augmentation Activities: None			

Table 8-4, continued

Assessment Scenario #2: Dry Water Year			
Hydrologic and Regulatory Conditions -Customer demands increase -SWP supply conditions measured in snow surveys -MWD's Colorado River supply availability -Regulatory conditions **Evaluation Criteria** -Monthly production data indicates above monthly average increases for December through March -MWD institutes Water Supply Allocation Plan (WSAP) -MWDOC's monthly Water Supply Condition update report June 1 -OCWD limits groundwater availability			
Unconstrained Demands: 2022 Single Dry Year, Increased Demand		**3,830**	
Scenario #2 Prioritization of Supplies Used	**Supply Sources**	**Available Quantity (AF)**	**Operations Plan**
1	Groundwater	2,025	Maximize use of groundwater
2	Imported	1,805	Augment with imported water as needed
Note: Purchased imported water available to meet demand.			
Shortage Response Actions Triggered Demand Reduction Activities: If a shortage results, see appropriate WSCP Shortage Level 2 through 5 Supply Augmentation Activities: See Operations Plan			

Table 8-4, continued

Assessment Scenario #3: Catastrophic Interruption or Other Short Term Impact (<6 mo) to Imported Supply			
Hydrologic and Regulatory Conditions			
-Seismic, power, or other event resulting in short term system outage to imported supply			
-Facilities or supply outage due to scheduled repairs or upgrades			
-Regulatory conditions			
Evaluation Criteria			
-Purchased imported supply shortage due to outage			
-Planned outage of facilities or supply monitored until restored			
-Regulatory changes result in interruption to imported supply			
-MWD or MWDOC institutes WSAP if an extreme shortage of imported supply is declared			
-Statewide determination of a drought or other shortage emergency			
-MWDOC's monthly Water Supply Condition update report June 1			
Unconstrained Demand: 2021 Average Year		**3,525**	
Scenario #3 Prioritization of Supplies Used	**Supply Sources**	**Available Quantity (AF)**	**Operations Plan**
1	Groundwater	2,025	What is max that can be obtained?
	Imported	1,500	up to 6 months available to meet demands
Note: Imported supplies are assumed to be unavailable for up to 6 months in this scenario. During this time, groundwater can be used to meet demand.			
Shortage Response Actions Triggered			
Demand Reduction Activities: If a shortage results, see appropriate WSCP Shortage Level 3 through 5			
Supply Augmentation Activities: Work with adjacent agencies to obtain supplies. Activate regional emergency response coordination with other MWDOC agencies			

Table 8-4, continued

Assessment Scenario #4: Catastrophic Interruption or Other Short Term Impact (<6 mo) to Groundwater Supply

Hydrologic and Regulatory Conditions

-Seismic, power, or other event resulting in short term groundwater facilities outage
-Facilities or supply outage due to scheduled repairs or upgrades
-Groundwater supply water quality contamination
-Regulatory conditions such as PFASs resulting in reduction in groundwater supply

Evaluation Criteria

-District groundwater supply and/or conveyance facilities unavailable after outage
-Planned outage of facilities or supply monitored during outage
-Identify known regulatory changes resulting in interruption to use of supply
-Newport Beach not able to convey supply
-Determination that a shortage or shortage emergency exists

Unconstrained Demand: 2021 Average Year		**3,525**	
Scenario #4 Prioritization of Supplies Used	**Supply Sources**	**Available Quantity (AF)**	**Operations Plan**
	Groundwater	0	No supply available
1	Imported	3,525	

Note: Purchased imported meets total demand

Shortage Response Actions Triggered

Demand Reduction Activities: If a shortage results, see appropriate WSCP Shortage Level 3 through 5
Supply Augmentation Activities: Increase purchased water

Table 8-4, continued

Assessment Scenario #5: Catastrophic Interruption or Other Long Term Impact (>6 mo)

Hydrologic and Regulatory Conditions

-Statewide determination of a drought or other shortage emergency
-Seismic or other event resulting in long term local or regional system supply outage
-Wildland fire
-Supply interruption in Delta or CR due to natural or human induced event

Evaluation Criteria

-MWD detection of contaminant or spill in its ongoing monitoring
-Statewide restriction on the use or delivery of imported water
-Planned outage of facilities or supply monitored during outage
-MWD institutes WSAP if an extreme imported supply shortage is declared
-OCWD lowers available groundwater supply
-Determination that a shortage or shortage emergency exists

Unconstrained Demand: 2021 Average Year		**3,525**	
Scenario #5 Prioritization of Supplies Used	**Supply Sources**	**Available Quantity (AF)**	**Operations Plan**
1	Groundwater	2,025	Depending on which supply is impacted, the other supply should be utilized
2	Imported	3,525	

Note:

Shortage Response Actions Triggered

Demand Reduction Activities: See actions associated with Shortage Levels 4 to 6, depending on simultaneous impact to other supplies
Supply Augmentation Activities: See Operations Plan. Activate regional emergency response coordination with other MWDOC agencies

8.2.2 Declaration of Shortages

The District implements its water shortage program – which imposes prohibitions, regulations of water use, and penalties for violations of water use – during times of severe water shortages. Water production figures are recorded daily by District staff; weekly and monthly reports are prepared and monitored. These data are available to be used to measure actual water savings resulting from the effectiveness of any water shortage stage that may be implemented. The General Manager will formally approve the Annual Assessment each year. If a potential water supply shortage is indicated in the Annual Assessment, the General Manager will make a formal presentation at a Water Commission meeting and a Board of Directors meeting alerting the Commission and Board to the situation and recommending the Board of Directors declare a water shortage. At that time, the General Manager will recommend implementation of specific shortage response actions that are appropriate for the water supply situation. Coordination with the City of Laguna Beach and the County of Orange will occur if a proclamation of an emergency is necessary.

Regarding the imported water supply, as stages of water shortage are declared by MWD, the District will follow implementation of MWD stages and continue to monitor water use. It is not until MWD's Shortage Stage 5 that MWD may call for extraordinary conservation. During this stage, MWD's Drought Program Officer will coordinate public information activities with MWDOC and monitor the effectiveness of ongoing conservation programs. Monthly reporting on estimated conservation water savings will be provided to MWDOC.

8.3 Water Shortage Levels

On June 16, 2009, the District's Board of Directors approved Ordinance No. 100 establishing a Water Use Efficiency & Water Supply Shortage Program (with subsequent modifications). The purpose of Ordinance No. 100 was to provide for increasingly serious stages of water shortages and to define voluntary and mandatory water conservation measures to be implemented during these stages. Key elements of the District's Ordinance include permanent mandatory restrictions, staged responses to water supply shortages, and enforcements and penalties. The ordinance can be accessed at the District's website or in the 2020 UWMP.

To provide a consistent regional and statewide approach to conveying the relative severity of water supply shortage conditions, California Water Code Section 10632(a)(3) requires six water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, 50, percent shortages and greater than 50 percent supply shortage. Table 8-5 presents the mandatory water shortage levels.

Submittal Table 8-5: Water Shortage Contingency Plan Levels (DWR Table 8-1)		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions** (*Narrative description*)
1	Up to 10%	Normal water supply conditions. Conservation encouraged year-round.
2	Up to 20%	Operational changes to increase production of other supplies
3	Up to 30%	Operational changes to increase production of other supplies and invoke demand reduction actions
4	Up to 40%	Operational changes to increase production of other supplies and increase demand reduction actions
5	Up to 50%	Operational changes to increase production of other supplies and increase demand reduction actions
6	>50%	Operational changes to increase production of other supplies. Shortage at this level is most likely to occur following a catastrophic event; extreme demand reduction measures will be increased.
NOTES: Numerical triggers of supply shortages are estimated triggers. See crosswalk Figure 8-1 for correlation with District's shortage levels.		

Because the District's four shortage levels in the Ordinance do not correspond directly to these six State mandated levels, the Water Code authorizes suppliers to continue using its own shortage levels. To present the relationship to the six standard shortage levels, a crosswalk is provided in Figure 8-1. Water shortage response actions corresponding to the six shortage levels are described in the following sections.

Figure 8-1: LBCWD Crosswalk Comparison of Stages

Ordinance Shortage Levels	Shortage Conditions	2020 WSCP Level	2020 Shortage Range
At All Times	0-5%	1	Up to 10%
Water Watch	5-15%	2	Up to 20%
Level 1 Alert	15-30%	3	Up to 30%
Level 2 Warning	30-50%	4	Up to 40%
		5	Up to 50%
Level 3 Emergency	>50%	6	>50%

Depending upon the degree of water supply shortage, the District would enact one of the supply shortage levels summarized in Table 8-5. This would trigger additional water use efficiency measures for District customers, over and above the permanent measures. If the shortage increases, the District can move to higher levels for additional water use efficiency measures as needed. These six DWR levels are summarized below.

- Level 1, **mandatory** year-round level with up to a 10 percent shortage, has permanent mandatory restrictions in effect at all times and if not adhered to, represent waste and unreasonable use of water, including excessive use. These measures are designed to optimize water use efficiency even before a water supply shortage may be realized and to alter behavior under normal seasonal and annual fluctuations as well as when there is a shortage of up to 10 percent. All District customers are required to adhere to these restrictions throughout the year.
- Level 2, **water watch** supply shortage, has mandatory restrictions enacted in times of a 10 to 20 percent supply shortage. This level reflects the District's ordinance level Water Watch with its 5 to 15 percent supply shortage.
- Level 3, **water alert** supply shortage, has mandatory restrictions enacted in times of a 20 to 30 percent supply shortage. This level is within the ordinance Level 1 with its 15 to 30 percent supply shortage.
- Level 4, **water warning** supply shortage, has mandatory restrictions enacted in times of a 30 to 40 percent supply shortage. This level is within the ordinance Level 2 with its 30 to 50 percent supply shortage.
- Level 5, **critical** supply shortage, has mandatory restrictions enacted in times of a 40 to 50 percent supply shortage. This level is within the ordinance Level 2 with its 30 to 50 percent supply shortage.
- Level 6, **emergency** supply shortage under emergency conditions, has mandatory restrictions enacted in times of a greater than 50 percent supply shortage. This level is within the ordinance Level 3 with its equal to or greater than 50 percent supply shortage.

8.4 Shortage Response Actions

The purpose of the mandatory Annual Assessment (Water Code Section 10632.1) is to evaluate conditions affecting supply availability and determine, if a shortage is apparent, what steps to take. Procedures for declaring a water shortage and the demand management measures required are discussed in Section 8.5, Communication Protocols. Specific actions to take to reduce demands or augment supplies is discussed here. Circumstances vary with each shortage and the decisions regarding the most appropriate actions to take would be made by the General Manager. Actions described in this section are comprehensive and would be adapted to one of the six shortage levels to respond to the needs.

8.4.1 Demand Reduction

Information pertaining to specific prohibitions and reduction methods for each of the District shortage stages can be found in the District's Water Use Efficiency & Water Supply Shortage Program (Ordinances 100 and 797) provided in Appendix H.

Shortage Level 1 – Permanent Mandatory Restrictions. Permanent mandatory restrictions are in effect at all times and if not adhered to represent waste and unreasonable use of water including excessive use. These measures are designed to optimize water use efficiency even when there is no water supply shortage. All District customers are required to adhere to these restrictions throughout the year. The permanent year-round actions designed to alter behavior during non-shortage conditions are described here and identified in Ordinance 100.

General Restrictions

- **Limits on Watering Hours.** Watering or irrigating is prohibited any day of the week between 8am and 8pm. This applies to lawns, landscaping, and all other vegetated areas.
- **Water Flow or Runoff.** It is prohibited to water lawns, landscaping, and vegetated areas in a manner that causes or allows water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch.
- **Obligation to Fix Leaks, Breaks or Malfunctions in Lines, Fixtures or Facilities**. Loss or escape of water through breaks, leaks, or malfunctions in the water user's plumbing, distribution or irrigation system is prohibited for any period of time after such water waste should have reasonably been discovered and corrected. Leaks, breaks, or malfunctions must be corrected in no more than three days of District notification. The District, at its sole discretion, may temporarily shut-off service if unable to contact the account holder on record.
- **Water Served Only Upon Request.** Eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, clubs or other public places where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.
- **Option Not To Have Towels/Linens Laundered.** Hotels, motels, and other commercial lodging establishments must provide guests the option of not having their used towels and linens laundered. Lodging establishments must prominently display notice of this option in each room and/or bathroom, using clear and easily understood language.
- **Hosing or Washing Down Hard or Paved Surfaces.** It is prohibited to use water to hose or wash down hard or paved surfaces, such as sidewalks, walkways, driveways, parking

areas, tennis courts, patios, or alleys, unless using a bucket or automatic shut-off hose nozzle, with a few exemptions.

- **Hosing or Washing Down Vehicles**. It is prohibited to use water to hose or wash down a motorized or non-motorized vehicle, including but not limited to automobiles, trucks, vans, buses, motorcycles, boats or trailers, unless using a bucket or automatic shut-off hose nozzle, with a few exemptions.

- **Re-Circulating Decorative Water Fountains and Features.** All new decorative water fountains and water features must re-circulate water - or users must secure a waiver from the District.

- **Unauthorized Use of Fire Hydrants Prohibited.** No person may use water from any fire hydrant for any purpose other than fire suppression or emergency aid, without first requesting and posting the appropriate fees at the District and obtaining a hydrant meter to record all water consumption for a specified project. Absent a meter, water theft and meter tampering fees will be applied as appropriate.

Commercial Kitchen Requirements

- **Water-Efficient Pre-Rinse Kitchen Spray Valves.** All new food preparation establishments, such as restaurants, cafes, and hotels, are prohibited from using non-water efficient kitchen spray valves.

- **Best-Available Water-Conserving Technology**. All water using equipment in new commercial kitchens must use the best available, water conserving technology.

- **Automatic Shut-Off Hose Nozzles.** When hosing or washing kitchen, garbage areas, or other areas for sanitary reasons as required by the Health Department, hoses shall be equipped with automatic shut-off hose nozzles.

Commercial Water Recirculation Requirements

- **No Installation of Non-recirculating Water Systems in Car Wash and Laundry Systems.** Installation of non-recirculating water systems is prohibited in new commercial conveyor car wash and new laundry systems.

- **No Installation of Single-Pass Cooling Systems.** Installation of single pass cooling systems is prohibited in buildings requesting new water service.

Construction Site Requirements

- **Recycled or non-potable water** must be used, when available.

- **No potable water may be used for soil compaction or dust control** where there is a reasonably available source of recycled or non-potable water approved by the Department of Public Health and appropriate for such use.

- **Water hoses shall be equipped with automatic shut-off nozzles,** given such devices are available for the size and type of hoses in use.

Wasteful Water Use

- Upon notice by the District, persons shall cease to cause or permit the indiscriminate use of water not otherwise prohibited above which is wasteful and without reasonable purpose.

Shortage Levels 2 through 6 – Potential Shortage Response Actions. Table 8-6 lists the DWR categories of shortage response actions aligned to respond to specific defined DWR shortage Levels 1 through 6 in compliance with District ordinances. The actions increase in implementation as the shortage levels increase. For example, watering limitations increase as each shortage level increases. For Level 6, no watering or irrigating (with certain exceptions) is allowed.

It is anticipated that total demands could be reduced by over 50 percent under Level 6 watering restrictions alone to meet potential supply reductions of greater than 50 percent. Unless a regional disaster, Level 6 may require extensive District public outreach to ensure that water use is curtailed during the duration of the outage.

An example of how the District responds to regional supply shortages is provided with the most recent drought. On August 7, 2014, the District's Board of Directors approved Ordinance No. 797 implementing the Level 1 – Water Supply Shortage Alert. The purpose of this ordinance was to augment existing conservation efforts with the following Level 1 measures to respond to the worsening drought.

1) Limits on Watering Days. Watering lawns, landscaping and other vegetated areas is limited to no more than three days per week.
2) Timeframe to Fix Leaks, Breaks or Malfunctions in water users' pipelines, fixtures, or facilities. Loss or escape of water through breaks, leaks or other malfunctions in the water users' plumbing, distribution, or irrigation system must be fixed in no more than 48 hours following notification from the District – unless other arrangements are made with the District or the system is shut off while waiting for repairs. The District, at its sole discretion, may temporarily shut-off service if unable to contact the account holder on record.

Submittal Table 8-6: Demand Reduction Actions (DWR Table 8-2)				
Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply to you.*	How much is this going to reduce the shortage gap? *Include volume or percentage used.*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? *Drop Down List*
Add additional rows as needed				
Level 1	Permanent measures			Yes
Level 2	Same as Level 1 plus further outreach/restrictions to achieve 20% savings			
Level 2	Implement or Modify Drought Rate Structure or Surcharge	up to 20%	Establish an allocation	Yes
Level 2	Implement or Modify Drought Rate Structure or Surcharge	up to 20%	Increase water rates	Yes
Level 3	Same as Level 2 plus further outreach/restrictions to achieve 30% savings			
Level 3	Landscape - Limit landscape irrigation to specific days	up to 10%	Limit up to 3 days/week	Yes
Level 3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	up to 2%	Within 48 hours	Yes
Level 4	Same as Level 3 plus further outreach/restrictions to achieve 40% savings			
Level 4	Landscape - Limit landscape irrigation to specific days	up to 25%	Limit up to 2days/week	Yes
Level 4	Other water feature or swimming pool restriction	up to 2%	No filling; refilling is limited to 1 foot of water	Yes
Level 4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	up to 5%		Yes
Level 4	Moratorium or Net Zero Demand Increase on New Connections	up to 0%		Yes
Level 5	Same as Level 4 plus further outreach/restrictions to achieve 50% savings			
Level 6	Same as Level 5 plus further outreach/restrictions to achieve more than 50% savings			
Level 6	Landscape - Prohibit all landscape irrigation	up to 60%		Yes
NOTES: Each level includes the restrictions from the previous level. All levels include permanent water use efficiency measures				

8.4.2 Supply Augmentation

As presented in Table 8-4 under the Operations Plan for each Annual Assessment scenario, the District's two supplies would be managed uniquely in response to the conditions underlying the cause of the shortage. The supply augmentation responses identified in Table 8-4 as the Operations Plan for addressing various scenarios, have been integrated into the District's supply management planning for shortage conditions. For example, when the groundwater supply is limited, which occurred starting in 2020 with a regulatory constraint, additional imported water is purchased. The management of these two sources is not necessarily triggered by a response to a shortage level but rather as an ongoing operational plan to manage the robust supplies most efficiently and cost effectively, especially under shortage conditions. This is reflected in Table 8-7.

Table 8-7: Supply Augmentation and Other Actions (DWR Table 8-3)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	How much is this going to reduce the shortage gap? *Include volume or percentage used.*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
Level 1	Other actions (describe)	up to 10%	Operational plan: change in allocation of existing supplies
Level 2	Other actions (describe)	up to 20%	Operational plan: change in allocation of existing supplies
Level 3	Other actions (describe)	up to 30%	Operational plan: change in allocation of existing supplies
Level 4	Other actions (describe)	up to 40%	Operational plan: change in allocation of existing supplies
Level 5	Other actions (describe)	up to 50%	Operational plan: change in allocation of existing supplies
Level 6	Other actions (describe)	up to 3,938 AF	Additional purchases will reduce shortage gap
NOTES: Due to the reliability of existing supplies, the District does not anticipate a supply shortage until reaching a catastrophe at Level 6.			

Although the increased use of an existing supply may be considered a redundant supply according to the guidebook because it is incorporated into the operational plan of the system, it is the logical action to address any shortage gaps that occur during dry conditions or outages. There is no need to pursue acquiring emergency dry year supplies when the reliability of the current supplies have been proven through the years to be adequate to respond to a supply shortage, along with demand management actions.

The District will respond to the water shortages defined in the Annual Assessment (presented in Table 8-4), which may result in the need for demand reduction activities or a change in the Operations Plan to optimize supplies.

8.4.3 Operational Changes

Operational changes that can be implemented to address water shortage levels are identified in the Annual Assessment Table 8-4 for each of the Assessment Scenarios of possible shortages or outages. These operational plan changes reflect a change in water supplies and volume needed to respond to the specific dry year or outage condition.

8.4.4 Additional Mandatory Restrictions

There are no additional mandatory restrictions as options to respond to water shortage levels besides those identified in Table 8-6 and elsewhere in this WSCP.

8.4.5 Emergency Response Plan

America's Water Infrastructure Act of 2018 Section 2013(b) requires community water systems serving populations greater than 3,300 to develop or update an Emergency Response Plan (ERP). The District is vulnerable to potential disaster situations that could result in catastrophic interruption of water supplies. The most likely event triggering a catastrophic supply interruption is a regional power outage. Other likely catastrophic events include an earthquake in the Delta affecting imported water supplies and an earthquake in Southern California affecting the conveyance and treatment of supplies. Human-made threats include contamination to the water system, structural damage from an explosive device, employee assaulted with a weapon, Supervisory Control and Data Acquisition System (SCADA) or IT system intrusion, water supply interruption, or a bomb threat. A catastrophic supply interruption that affects more than one of the District's supplies can result in an extreme shortage for water available for extended fire fighting needs and customer consumption.

The District will be preparing its ERP, incorporating the findings of its Risk and Resilience Assessment, within six months of the Assessment being certified in accordance with America's Water Infrastructure Act of 2018 Section 2013(b). Once completed, it will provide the District with a standardized response and recovery protocol to prevent, minimize, and mitigate injury and damage resulting from emergencies or disasters of human-made or natural origins. The ERP also will describe how the District will respond to potential threats identified in the vulnerability assessment as well as additional emergency response situations. During an outage, various actions will need to be taken to continue water service, especially for key functions such as fire fighting. Various parts of the District's staged response plan - reflecting the six levels of shortages - can be invoked, as needed, during declared water shortages.

An example of a catastrophic event impacting water supplies and the District's response can be found with the firestorm of 1993. On October 27, 1993, a fire started near Laguna Canyon Road about one mile north of El Toro Road. Pushed by Santa Ana winds, the fire reached the community of Emerald Bay and entered the perimeter of the District's Moorhead Reservoir. The fire continued north into Crystal Cove State Park and south into Laguna Beach where it reached Park Avenue. By the time it was contained (about 3:30 a.m. on October 28), the fire had destroyed 366 homes, damaged over 500 more homes and burned over 17,000 acres of brush land. Approximately 16 million gallons of water over normal usage was needed during the period of the firestorm. This included additional flow to South Coast Water District. MWD supplied all the water the District could take with no flow restrictions. Because of the dry and windy conditions, all reservoirs were filled. Storage within the District was at about 80 percent when the fire entered Laguna Beach. Normal operating levels would have been between 50 percent and 70 percent.

It was extremely difficult to determine exactly how much water was used at any one time during the fire. However, it was roughly estimated that the peak demand placed on the water system to supply firefighters was approximately 20,000 gallons per minute (gpm). The District also had to contend with broken or melted pipes in burned homes, as well as running sprinklers and hoses that were left abandoned when people had to evacuate the area. The demand on the District's water system was great. In fact, everywhere the fire was being fought, reservoirs were being drained faster than they could be filled. Six of the District's twenty-two reservoirs were completely drained during the fire. The capabilities of the water system were tested during the firestorm of 1993. As a result of the information gathered during the firestorm, upgrades to the system were implemented to minimize the impact of another such event. Since the 1993 firestorm the District has:

- Built two reservoirs totaling 8 million gallons.
- Purchased 3 additional fixed and portable emergency generators for pump stations.
- Purchased 4 additional portable, large capacity pumps.
- Installed parallel pipelines in strategic areas for fire flow improvement.
- Identified low-pressure areas within the District, some of which (but not all) can be improved.

The District can deal with both planned and unplanned power outages. In the event of an unplanned power outage within the service area, water supply can be maintained by gravity from the treated water reservoirs located throughout the distribution system. The lower zone reservoirs can continue to be filled by gravity from the imported water supply lines (Coast Supply Line and Aufdenkamp Transmission Main). Mobile generators that the District owns or can obtain quickly from neighboring agencies would be transported to key locations to allow for transfers

to upper zones. In the event of a regional power outage affecting the imported water supply, the distribution system would be relied on until imported supply deliveries return to normal. Public outreach to reduce demands would occur immediately. A more aggressive level of public outreach and water use restrictions would occur with a regional outage, as described under an emergency supply shortage (Level 6) response. Due to the sensitive nature of the information contained in the ERP, the plan will be limited in its distribution.

8.4.6 Seismic Risk Assessment and Mitigation Plan

MWDOC updated its "Orange County Regional Water and Wastewater Hazard Mitigation Plan" in 2019 for its member agencies. This can be found in Appendix H of the 2020 UWMP. The Hazard Mitigation Plan (HMP) identified and prioritized hazards affecting the County of Orange and assessed the associated vulnerability of the systems from those hazards. Mitigation plans were then developed in accordance with Disaster Mitigation Act of 2000 and Federal Emergency Management Agency's HMP guidance documents.

The seismic risk to the District is primarily associated with ground shaking especially along the coast; the coastal lands are considered to have "high" ground shaking susceptibility. Treated water is provided from the Diemer WTP in Yorba Linda. The District service area also has areas in the hills that are considered a landslide hazard, and most of the District is in a Very High fire hazard severity zone. This facility is proximate to the Whittier Fault and is considered to have "extreme" ground shaking susceptibility. From the WTP, the Aufdenkamp and Coast Supply Line transmission pipelines convey treated water across several hazards before reaching the District from the east and the north, respectively; these transmission pipelines are highly susceptible to ground shaking and liquefaction.

Earthquakes that occur outside of Orange County could have a significant impact on the District's imported water supply. Both the Colorado River Aqueduct and the State Water Project facilities could be disrupted, along with the Sacramento River-San Joaquin River Delta, where failure of levees and flooding of islands with salt water from San Francisco Bay could disrupt water supplies for years.

The regional plan provides a framework for planning for natural and human-made hazards. The District was a participating agency in this program and its Board of Directors adopted the plan on February 20, 2020. The update from the 2012 plan added power outage and climate change hazards. Seismic hazards addressed include fault rupture, ground shaking, and liquefaction, while geologic hazards addressed include expansive soils and land subsidence. The plan provides a strategy and blueprint for mitigating the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources and the member agencies' ability to expand on and improve these tools.

8.4.7 Shortage Response Action Effectiveness

The locally appropriate shortage response actions for demand management were quantified for effectiveness in Table 8-6, reflecting the shortage level required. This given suite of response actions can be expected to deliver the expected outcomes necessary to meet the requirements of a given shortage level. For example, for a supply shortage of 20 percent, public information outreach to encourage conservation would reflect the effort required to achieve the 20 percent reduction. A greater level of outreach would achieve a greater level of savings. For example, allocations were initiated by MWD/MWDOC during the most recent drought in 2015, and the District and MWDOC initiated additional conservation outreach. Water use within the service area was reduced 14 percent that year.

Although the State had mandated water reductions to respond to the third year of a drought at that time, the District chose to increase the conservation outreach instead of triggering its drought rate structure. Although allowed at Level 2 (20 percent reduction), the upper shortage levels are more likely to trigger the imposition of the drought rate structure because of the interest of the District to utilize reserves. The District manages it finances with a pay-as-you-go structure instead of debt. This allowed the District to encourage conservation without imposing financial penalties during the last multi-year drought.

A Level 6 demand management action would certainly not be chosen without significant concern because the financial impact to homeowners would be significant if the shortage were extended to a point where the landscaping is irreparably damaged.

8.5 Communication Protocols

Communication protocols can differ between a supply shortage resulting from hydrological conditions and an emergency short- or long-term outage. Table 8-8 summarizes the communication protocols associated with the six DWR water shortage levels.

Shortage. A water supply shortage or threat of shortage exists when the District determines, in its sole discretion that it exists, due to drought, catastrophe, or other water supply condition. The District's Board of Directors may declare a Water Watch, Level 1 Water Alert, or Level 2 Water Warning at a regular or special public meeting in accordance with State law. These levels correspond to the DWR prescribed shortage levels presented in Figure 8-1. The District may declare a Level 3 Water Emergency in accordance with Water Code Sections 350, 351, and 352. For notification of a Level 3 Water Emergency, except as otherwise provided by State law, the District must publish a copy of the water emergency resolution in a newspaper used for the publication of official notices within the jurisdiction of the District within ten business days of the date that the emergency is declared. Except as otherwise provided by State law, additional

mandatory water use efficiency requirements will take effect on the tenth business day after the date that the emergency is declared.

Alert and Warning Water Shortages for Levels 2 through 5. Weekly production figures are forwarded to the Operations Manager during Alert and Warning shortages. The weekly production figures are compared to the target weekly production to verify that the reduction goal is being met. Weekly reports are sent to the General Manager. If reduction goals are not met, the General Manager will notify the Commission so that corrective action can be taken.

Emergency Water Shortage or Outage for Level 6. During an emergency water shortage, the procedure above will be followed with the addition of a daily production report to the Operations Manager and General Manager. During an emergency outage, communications during the response will proceed along the chain of command identified in the ERP. The number of people notified will increase as the incident expands and decrease as the incident contracts toward its conclusion. The type and extent of the disaster will dictate the normal and/or alternative methods of communication that will be used. The possibility of a coordinated attack that targets multiple systems has been considered and it would be reasonable to assume that some methods of communication will either be unavailable or limited to certain areas. Communications with the public may include boil water orders, unsafe water alerts, or do not drink notices that would be coordinated with the Orange County Health Department and the State Division of Drinking Water.

During a MWD Shortage Stage 5, MWD's Drought Program Officer will coordinate public information activities with MWDOC. The District will participate in member agency meetings with MWDOC to monitor and discuss water allocations. This will enable the District to be aware of imported water use on a timely basis as a result of specific actions taken in response to MWD's Water Shortage Contingency Plan. As done in the past, the District will follow the Water Supply Allocation Plan guidelines of MWD once an extreme shortage is declared. This allocation plan is enforced by MWD using rate surcharges. MWDOC follows the guidelines of the allocation plan and imposes the surcharge that MWD applies to its member agencies that exceed their water allocation.

Table 8-8: Communication Protocols	
Shortage Level	Communication Protocols and Procedures
1	• Ongoing outreach efforts to promote ongoing efficiency programs
2	• Initiate public information campaign to announce water supply conditions and needed actions from the public • Announce water supply shortage status to key stakeholders • Increase conservation messages on District website and in standard outreach efforts
3	• Supplement Level 2 activities with additional tactics, as needed • Provide regular condition updates to stakeholders • Continue promotion of ongoing water efficiency programs programs/tools • Enhance promotion of ongoing water efficiency programs targeted advertising
4	• Update campaign and messages to raise awareness for more severe water saving actions and behaviors by the public • Announce water supply shortage status to key stakeholders • Supplement Level 3 outreach with additional tactics, as needed • Conduct specialized outreach to reduce discretionary outdoor use while minimizing landscape damage
5	• Update campaign and messages to reflect extreme or emergency condition and likely need to focus water use on health/safety needs • Announce water supply shortage status to key stakeholders • Supplement Level 4 outreach with additional tactics, as needed • Suspend promotion of long-term water efficiency programs to focus on imminent needs
6	• Formal and detailed communication protocols in the District's ERP and MWDOC's hazard mitigation plan are activated. This level requires a formal protocol with regional agencies to address the catastrophe or extreme supply shortage • Update campaign and messages to reflect extreme or emergency condition and likely need to focus water use on health/safety needs • Announce water supply shortage status to key stakeholders • Supplement Level 5 outreach with additional tactics, as needed • Suspend promotion of long-term water efficiency programs to focus on emergency needs
NOTE: Response actions for each stage are provided in Table 8-6.	

8.6 Compliance and Enforcement

Any violation of the District's Water Use Efficiency & Water Supply Shortage Program, including waste of water and excessive use, is a misdemeanor punishable by imprisonment in the county jail for not more than 30 days or by a fine not exceeding $500, or both. In addition to any other remedies that the District may have for enforcement, service of water would be discontinued or appropriately limited to any customer who willfully uses water in violation of any provision of the plan.

To enforce the prohibitions listed in Table 8-6, Ordinance 100 identifies specific steps the District must take. For the first instance of non-compliance, the District will issue a written warning and deliver a copy of the Ordinance by mail or door hanger. For the second violation within the preceding 12 months, a fine to not exceed $100 is issued. For the third violation, the fine increases to $250. For the fourth and subsequent violations, the fine is not to exceed $500, a water flow restrictor device may be installed, and/or water service may be disconnected. Each day in non-compliance is a separate offence. Penalties for violation of any prohibitions can be found in the ordinance.

The District has several disincentives to discourage excessive use during normal water conditions as well as shortage events. The primary financial penalty for excessive use is the conservation rates, with increasing rates for higher levels of water use. This rate structure discourages excessive use. The District also has the authority to implement a penalty of excessive use by individual customers during declared droughts. These tiered rates have significant financial incentives to reduce consumption when enacted. In addition, penalties can be issued for violating mandatory prohibitions. As mentioned above the first violation is a warning and the second violation is a fine not to exceed $100.

8.7 Legal Authorities

On June 16, 2009, the District's board of directors approved Ordinance No. 100 establishing a Water Use Efficiency & Water Supply Shortage Program. The purpose of this ordinance was to provide for increasingly serious stages of water shortages and to define voluntary and mandatory water conservation measures to be implemented during these stages. Key elements of the District's Ordinance include the following: permanent mandatory restrictions, staged responses to water supply shortages, and enforcements and penalties. The ordinance can be found in Appendix H of the 2020 UWMP. In addition, this WSCP was adopted by the board of directors June 15, 2021 as its plan for responding to any potential water shortages in conformance with DWR's six shortage levels.

The District Board of Directors has the power to declare a water shortage emergency in accordance with Water Code Chapter 3 (commencing with Section 350) of Division 1 regarding

water shortage emergencies. It also has the power to implement the applicable provisions of the District's shortage ordinance when in its opinion the demand for water consumption exceeds the District's available supply (allowing for a safe reserve), or threatens to do so, provided there are no immediate resources available to remedy the situation. Such declaration shall be made by public announcement and shall be published in a newspaper of general circulation and shall become effective immediately upon such publication.

The District shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558). The relevant agencies (i.e., County of Orange, EBSD) are provided in Table 10-1 of the 2020 UWMP.

8.8 Financial Consequences

During an interruption of water supplies, prolonged drought, or water shortage of any kind, the District will experience a reduction in revenue due to reduced water sales. Expenditures may increase as additional water must be purchased at a higher rate or damage to the water system requires emergency repairs. Purchased MWD/MWDOC water during times of drought or declared emergency can increase the cost of water when MWD or MWDOC trigger the Water Supply Allocation Plan (WSAP) rate surcharges discussed elsewhere. Expenditures also decrease as less water is pumped through the system, resulting in lower power costs. Water purchase expenses could also be lower during a catastrophic event as the availability of imported water is restricted.

The District receives water revenue from a service charge and a two tier commodity charge based on consumption. The service charge recovers costs associated with providing water to the serviced property, which does not vary with consumption. The commodity charges are based on water usage. Rates have been designed to recover the full cost of water service in the service and commodity charges. Therefore, the total cost of purchasing water would decrease as the usage or sale of water decreases.

However, there are significant fixed costs associated with maintaining a minimal level of service. Should an extreme shortage be declared and a large reduction in water sales occur for an extended period of time, the District would monitor projected revenues and expenditures. To mitigate these potential revenue losses and/or expenditure impacts, the District may utilize reserves as it did in the last drought. The District has an Operating Contingency Reserve Fund and Rate Stabilization Fund. These funds have been used in the past to stabilize rates during periods of reduced water sales. If necessary, the District will reduce expenditures by delaying implementation of its Capital Improvement Program and equipment purchases, and as a last

resort adjust the work force, implement the drought surcharge previously described, and/or make adjustments to its water rate structure.

The costs of discouraging excessive water use during a drought emergency would be shared with MWDOC as the regional water use efficiency outreach provider and the District as the enforcer. Those costs associated with excessive use during an emergency are not anticipated to be significantly greater than messaging provided during a drought/emergency for overall demand management actions, nor would it require additional District staff to enforce as existing personnel can be utilized.

8.9 Monitoring and Reporting

Water demand must be monitored frequently during emergency water shortages to enable the District to effectively manage the balance between supply and demand. All individual accounts in the District are metered, and overall water production and the status of the District's supply is continuously monitored through District facilities and its SCADA system. Water production figures are recorded daily; weekly and monthly reports are prepared and monitored. These data are available to identify an increase in production that may reflect a dry year and measure water savings resulting from the effectiveness of any water shortage contingency level that may be implemented.

As done in the past, the District follows MWD's WSAP guidelines once an extreme shortage is declared. This allocation plan is enforced by MWD using rate surcharges. MWDOC follows the guidelines of the allocation plan and imposes the surcharge that MWD applies to its member agencies that exceed their water allocation. This results in higher costs to the District if its purchases exceed its allocation.

As stages of water shortage are declared by MWDOC, the District implements those stages. It is not until MWD's Shortage Stage 5 that MWD may call for extraordinary conservation. During this stage, MWD's Drought Program Officer will coordinate public information activities with MWDOC and monitor the effectiveness of ongoing conservation programs. The District collects, tracks, and analyzes data to monitor customer compliance and to meet State reporting requirements. Monthly reporting on estimated conservation water savings is provided to MWDOC. The District will participate in member agency meetings with MWDOC to monitor and discuss water allocations. This will enable the District to be aware of imported water use on a timely basis as a result of specific actions taken in response to MWD's Water Shortage Contingency Plan.

As done in the past, the District will follow the WSAP guidelines of MWD once an extreme shortage is declared. This allocation plan is enforced by MWD using rate surcharges. MWDOC follows the guidelines of the allocation plan and imposes the surcharge that MWD applies to its

member agencies that exceed their water allocation. This results in higher costs to the District if its purchases exceed its allocation. For example, during the last drought MWD declared a Stage Level 3 in April 2015 for a 15 percent reduction on imported deliveries. MWDOC implemented Stage Level 3 the following day. This allocation was in effect for a 12 month period from July 1, 2015 to June 30, 2016.

On May 9, 2016, the Governor issued Executive Order B-37-16 to make water conservation a way of life in California and directed the State Water Resources Control Board to establish permanent reporting and data collection by urban water suppliers. On April 21, 2020, the State Water Resources Control Board adopted Resolution No. 2020-0009, which requires monthly urban water conservation reporting. The Urban Water Supplier Reporting tool is used for monthly reporting. The monthly reporting required by the State Water Resources Control Board will be used for reporting purposes of this WSCP.

8.10 Refinement Procedures

The District is required to submit the Annual Assessment to DWR. This new report (Table 8-4) is due by July 1 of each year, starting in 2022. The annual report will be based on the assessment of demands on the system in conjunction with supply availability as outlined above. The District may reevaluate at any time the functionality of its WSCP process and make appropriate adjustments if warranted. The WSCP will be reviewed at least every five years as a part of the UWMP update.

8.11 Special Water Feature Distinction

There are no known special water features in the District service area.

8.12 Plan Adoption, Submittal, and Availability

This WSCP was adopted by the District Board of Directors June 17, 2021 and submitted to DWR before July 1, 2021. It is available to the public through the District website. It is a living document that is meant to be updated, as needed, between the required five-year update. If the WSCP is amended, a copy will be provided to DWR within 30 days of adoption.

Chapter 9 - Demand Management Measures

9.1 Background

The District is committed to water use efficiency (WUE) as a means to maintain its reliable supply sources for its service area. WUE is a major part of the District's current and future programs to reduce demand and increase water supply reliability. Because of the effectiveness of the programs, the District was able to exceed its 2020 water use target of 162 gpcd with average water use of 156 gpcd.

The District plans to continue implementation of its WUE programs in conjunction with MWDOC. As a member agency of MWDOC, the District benefits from various regional programs performed by MWDOC on behalf of its member agencies. MWDOC became a signatory to the Best Management Practices (BMP) Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) in 1991. MWDOC has made the State-mandated Demand Management Measures (DMMs) the cornerstone of its conservation programs for its member agencies. Retail water agencies throughout Orange County recognize the need to use existing water supplies efficiently. Implementation of BMP-based efficiency programs makes good economic sense and reflects responsible stewardship of the region's water resources.

California Water Efficiency Partnership, CalWEP, previously known as California Urban Water Conservation Council, is a voluntary statewide organization of water agencies, public interest organizations, and private entities tasked with overseeing the BMP reporting process, implementing and revising the BMP MOU, and generally promoting urban water use efficiency in California. The District is not a member of CalWEP therefore it does not have the option of submitting its annual reports in lieu of the DMM descriptions.

The District's and MWDOC's commitment to implement BMP-based water use efficiency programs continues today. To help facilitate implementation of BMPs throughout Orange County, MWDOC's efforts focus on the following three areas that both comply with and go beyond the basic wholesaler assistance requirements.

Regional Program Implementation. MWDOC develops, obtains funding for, and implements regional BMP programs on behalf of all retail water agencies in Orange County. This approach minimizes confusion to consumers by providing the same programs with the same participation guidelines, and also maintains a consistent message to the public to use water efficiently. Further, MWDOC helps build partnerships to accomplish conservation.

Local Program Assistance. When requested, MWDOC assists retail agencies to develop and implement local programs within their individual service areas. This assistance includes collaboration with each retail agency to design a program to fit that agency's local needs, which may include providing staffing, targeting customer classes, acquiring grant funding from a variety of sources, and implementing, marketing, reporting, and evaluating the program. MWDOC provides assistance with a variety of local programs including, but not limited to, Home Water Surveys, Large Landscape Water Use Reports, Drip Irrigation Pilot Program, Public Agency Water Smart Landscape Incentives, HOA and Public Information, School Education, Conservation Pricing, and Water Waste Prohibitions. Many of these local programs have also been structured through Integrated Regional Water Management Planning processes in north, central and south Orange County.

Research and Evaluation. An integral component of any water use efficiency program is the research and evaluation of potential and existing programs. Research allows an agency to measure the water savings benefits of a specific program and then compare those benefits to the costs of implementing the program in order to evaluate the economic feasibility of the program when compared to other efficiency projects or existing or potential sources of supply. Furthermore, in 2013 MWDOC published its first Orange County Water Use Efficiency Master Plan to define how Orange County will comply with (it actually exceeded) the state mandate of a 20 percent reduction in water use by 2020, and how MWDOC will achieve its share of Metropolitan's Integrated Resources Plan water savings goal. The Orange County Water Use Efficiency Master Plan is being utilized to achieve the water savings goal at the lowest possible costs while maintaining a mix of programs desired by water agencies and consumers throughout Orange County.

9.2 Demand Management Measures

Urban water conservation practices are intended to reduce long-term urban demands from what they would have been without implementation of these practices. They are in addition to programs that may be instituted during occasional water supply shortages. The District and the Water Use Efficiency Department at MWDOC take pride in providing programs to assist customers in reducing the amount of water used. The District's DMM activities, as well as programs administered by MWDOC's Water Use Efficiency Department to assist in promoting regional water use efficiency, are summarized in the following order.

- Water waste prevention ordinances
- Metering
- Conservation pricing

- Public education and outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support
- Other demand management measures

9.2.1 Water Waste Prevention Ordinances

The Board of Directors passed Ordinance No. 100 on June 16, 2009, located in Appendix H, prohibiting waste and unreasonable use of water. These provisions are incorporated into the District's water use efficiency program. Section III specifies that the ordinance is designed to prevent waste of potable water and maximize efficient use in the District. It includes specific requirements in Section VI under permanent mandatory measures that are always in effect, regarding the prohibition of wasting water. Water waste refers to "uses of water that are limited or prohibited under the Ordinance because they exceed necessary or intended use and could reasonably be prevented, such as runoff from outdoor watering."

9.2.2 Metering

The District requires meters for all customers. The District will continue to require metering of all connections.

In 2017, the District installed an Advanced Metering Infrastructure (AMI) system across its service area. The project included enhancing every residential and commercial water meter with new, state-of-the-art technology that wirelessly communicates usage data to the District. The new meters are able to collect multiple remote meter reads per day, allowing for better leak detection and improved customer service. The $2.6 million project was funded through water rates at no additional cost to customers and through a $300,000 United States Bureau of Reclamation WaterSMART: Water and Energy Efficiency Grant, awarded to the District. In addition, a customer web portal, which uses data from the District's new AMI system, was launched that gives customers access to their own detailed water usage information, as well as allowing them to better manage and budget their water consumption. The ability to better understand and view water use in near-real-time has a profound impact on water consumption and the District's conservation efforts.

9.2.3 Conservation Pricing

The District's water rates meet the CalWEP definition of "conservation pricing" that includes "rates designed to recover the cost of providing service." Beginning January 1, 2011, the District implemented a tiered rate structure based on property specific water budgets. Tiered rates provide customers with an economic incentive to use water efficiently and pass on the higher

costs associated with conservation programs and development of supplemental water sources to those who use water inefficiently.

Water budgets promote efficient water use by providing enough water for typical, yet efficient, water use indoors and outdoors without penalty. Budgets are property specific and take into account different water use factors depending on whether it is a single family, multi-family, CII, mixed use, hotel/motel, or irrigation-only water account.

The District's water rates include "rates designed to recover the cost of providing service." The District bills bi-monthly based on a fixed service charge based on meter size, plus a commodity charge. The District's budget-based water allocation rate structure consists of individualized budgets for all customer accounts. Single family residential customers receive a bi-monthly customized water budget based on the number of people in the home, the property's irrigated acreage, and seasonal weather data. Water budgets for single meter multi-family, dual use, commercial/industrial/institutional accounts are based on a three-year rolling historical average for each meter. Hotel/motel accounts are allotted 144 gallons of water per guest room based on the number of rooms. Irrigation only customers have an outdoor water budget set according to the property's landscaped area and seasonal weather data. Customers who use more than their budget allotment pay for the additional use at an "Inefficient Use Rate". Customers may apply for a variance to their water budget to adjust the number of people in a household, the irrigated area, or for other special circumstances.

The fixed portion of the monthly charge is designed to cover the cost of water distribution, meter reading, maintenance of the distribution system, and a portion of the capital improvement program. The commodity component is structured to recover the actual cost of water, including imported water charges, and energy and maintenance costs for water production facilities. The second tier is structured to recover the cost of additional conservation programs and new supplies.

9.2.4 Public Education and Outreach

Public education and outreach address public information programs to promote water use efficiency and educate customers about water use. The District considers its public education and school programs to be essential components of a water use efficiency program. The District operates an extensive public information program and associated schools' program, which provide materials, speakers, and outreach activities to the general public.

Outreach activities include publications, public meetings, District participation at community events, multi-media campaigns, inter-agency partnerships, facilities tours, regional press releases, water quality reports, feature story ideas, water conservation workshops and seminars, and a speaker's bureau.

Bill Inserts. The District produces bill inserts periodically promoting conservation programs, services, events, and rebates. Water use efficiency messages are also printed on the bill itself. Consumption Information on water bills are bi-monthly and show consumption in gallons and cubic feet, as well as a comparison to last year's consumption, where applicable.

Social Media and Electronic Communication Outreach. The District employs several different social media platforms to inform and engage customers including Facebook, Twitter, Instagram, and YouTube. In addition, the District communicates messages through email blasts and text messages through the District's customer web portal.

New Customer Welcome Packet. The District provides a "New Customer Welcome Packet" containing important information for new customers. A welcome letter, signed by the General Manager, explains the District's current water situation and the need for water use efficiency. In addition, information on the District's water use restrictions, auto pay service, billing information, District contact information, and water use efficiency materials are included. New customers receive the Welcome Packet upon signing up for service with the District.

Press Releases. The District provides press releases on District issues to the local news outlets on a frequent basis.

Local Advertising. The District produces advertising monthly for local print, online, and on-air news outlets including banner ads in the Laguna Beach Independent and StuNews Laguna as well as Public Service Announcements on radio station KX FM 104.7. The District also maintains three 5x6 foot billboards around Laguna Beach where water use efficiency messages are displayed.

Letters to State Legislature. The District coordinates efforts with MWDOC and the Association of California Water Agencies to lobby the state legislature on pending legislative issues that could impact the District.

Outreach Materials. Customers can help themselves to a selection of indoor and outdoor water conservation literature, devices, rebate forms, and resource lists located inside the District lobby.

Continuous Use Notification. In 2017, the District installed an Advanced Metering Infrastructure (AMI) system across its service area. The project included enhancing every residential and commercial water meter with new, state-of-the-art technology that wirelessly communicates usage data to the District. On a daily basis, District staff receives "Continuous Water Use Alerts" through its AMI portal. Staff contacts customers regarding the alert and to offer assistance in determining the cause of the continuous use.

Tier 2 Letters. The District sends courtesy letters to single family residential (SFR) accounts that have high Tier 2 usage. SFR customers make up approximately 73 percent of District

customers. Tier 2 letters highlight the amount of money that was spent on Tier 2 charges. Tier 2 letters also include simple steps customer can take to better manage and reduce their water usage.

Water Use Efficiency Hotline. The District has established a dedicated Water Use Efficiency Hotline where customers can call to get rebate program information and report water waste.

Waterwise and Fire Safe Demonstration Garden. The District's award-winning Waterwise and Fire Safe Demonstration Garden was created to encourage public acceptance of, desire for, and use of water-wise/California friendly landscaping. Local residents and tourists stroll through the grounds regularly and gather gardening inspiration from the District's selection of waterwise and fire-safe plants. Signs identifying each plant help make the garden visitor friendly. Tours of the District's Waterwise and Fire Safe Demonstration Garden are scheduled upon request.

LBCWD's Waterwise Garden

Speakers Bureau. Upon request, the General Manager, Assistant General Manager, or Water Use Efficiency staff will speak to groups on a variety of water-related topics. The following groups typically request speakers from the District: Laguna Beach Rotary Club, Village Laguna, Transition Laguna, Chamber of Commerce, and Laguna Canyon Conservancy.

Door Hangers. The District leaves courtesy tags when properties are in violation of Ordinance 100. Courtesy tags serve as the first notice to a District customer after District personnel confirm the water waste report. Water waste reports can be submitted by the public and District personnel.

California Friendly Landscape Training (Residential). The California Friendly Landscape Training provides education to residential homeowners and professional landscape contractors on a variety of landscape water efficiency practices. These classes are hosted by MWDOC and/or the retail agencies that encourage participation across the county. The residential training program consists of either a half-day mini class or individual, topic-specific four-hour classes. The topics presented include the following.

- Basic Landscape Design
- California Friendly Plants
- Efficiency Irrigation Systems
- Soils, Watering, Fertilizing

California Friendly Landscape Training (Professionals). The California Friendly Landscape Training for professionals educates professional landscape contractors on a variety of landscape water efficiency practices they can employ. The professional training program course consists of four consecutive classes in landscape water management, each building upon principles presented in the preceding class. Each participant receives a bound handbook containing educational materials for each class. These classes are offered throughout the year and are taught in both English and Spanish. Each class covers irrigation principles, irrigation system troubleshooting, controller programming, and irrigation scheduling. Upon completion of the course, participants receive a certificate listing all classes completed. Participants are eligible for continuing education credits as certified by the Irrigation Association.

Participation in the Local Farmers Market. District staff provides water use efficiency literature, rebate forms, and answers questions at the local farmers' market once a month. The farmers' market is held every Saturday from 8 am to 12 pm year-round in downtown Laguna.

EPA Watersense Program. The District is a direct partner with EPA's WaterSense Partnership Program actively promoting the value of water efficiency by providing our customers with easy ways to identify water efficient products through their WaterSense Approved product labels and materials. This partnership helps consumers make smart water choices that save money and maintain high environmental standards without compromising performance. Products and services that have earned the WaterSense label have been certified to be at least 20 percent more efficient without sacrificing performance. The District's water conservation rebate programs promote only the use of WaterSense labeled devices in order to ensure maximum water savings and efficiency.

SmartScape Info/Expo. Now in its twelfth year, the District's *SmartScape Info/Expo* highlights and promotes the benefits of using California native plants and efficient irrigation techniques in residential and commercial landscape settings. Attendees have the opportunity to meet face-to-face with knowledgeable landscape and irrigation professionals, attend hands-on demonstrations and free workshops, and meet representatives from local companies exhibiting the latest water efficient landscape products.

Waterwise Garden Mini Grant. As a part of its outreach efforts, the District offers mini grants up to $2,500 to non-profit organizations, schools, and public agencies with public access gardens. The mini-grant can be used to increase irrigation efficiency, create new water-wise plantings, or promote water efficient gardening.

Wyland Mayor's Challenge for Water Conservation. Each year, the District participates in the Wyland Mayor's Challenge for Water Conservation. The month-long Challenge for Water Conservation is a nationwide competition to promote the importance of using water efficiently. The challenge, held every Earth Month (April 1-30), is a competition that encourages cities across the nation to see who can be the most waterwise by asking their residents to take a series of informative, easy to use pledges online to conserve water, energy, and other natural resources. The challenge has become widely recognized as one of the most engaging, zero-cost outreach tools especially designed for cities and water utilities to encourage conservation in the United States. Since its inception in 2012, the District has won the nationwide competition five times: 2012, 2013, 2016, 2017 and 2020.

Laguna Beach Green Business Program. The District partners with the City of Laguna Beach and Orange County Waste Management in its Green Business Program. The program is voluntary for participating businesses and is designed to promote green business practices and recognizes businesses that implement sustainability practices. Currently there are over 35 businesses in Laguna Beach that have obtained their certification. To receive certification, a business must implement specific green practices to conserve resources through waste reduction, energy and water conservation, and pollution prevention.

Youth Environmental Summit (YES). Each year, the District participates and sponsors the Youth Environmental Summit (YES), formerly known as the Children's Water Education Festival. The Summit, the largest of its kind in the United States, takes place in the Spring, at the University of California, Irvine. More than 7,000 third, fourth, and fifth grade students and their teachers attend the event, presented by OCWD, Disneyland Resort, National Water Research Institute, and OCWD Groundwater Guardian Team. Students from the District's service area attend the Summit through funding provided by the District for bus transportation. The Summit presents a unique opportunity to educate students about local water issues and help them understand how they can protect water supplies and their environment. Since its inception in 1997, more than 135,000 children from schools throughout Orange County have been able to experience the event and all it has to offer. Throughout the Summit, participating organizations engage the students through interactive educational presentations that are taught to California State Science Standards. Because of this, educators consistently rate the education value of the Summit very high. YES is provided at no cost to Orange County schools.

MWDOC Programs. Although the District has an extensive public outreach program, MWDOC also assists its member agencies in reaching the public with accurate, consistent information regarding present and future water supplies and the importance of implementing water efficient techniques and behaviors. MWDOC also assists its member agencies in publicizing the availability of water use efficiency programs and technologies throughout Orange County. MWDOC conducts

the following activities on behalf of, and in coordination with, its member agencies.

- Public affairs workgroup
- Poster/slogan contest
- Local and regional events
- Speakers' Bureau
- Facility inspection trips of MWD, SWP, and GWRS facilities
- Information materials
- Water quality reports
- Media relation

The District participates in the monthly Public Affairs Workgroup meetings conducted by MWDOC to coordinate public outreach efforts and share information on a countywide basis.

School Education Programs. The District has been continuously active in this area by providing free classroom presentations and tours of District facilities to schools within the service area. The objective is to teach students about water conservation, water supply, watershed stewardship, and flood protection. The District also provides school curricula to area educators, including workbooks and videos, as well as hands-on training for teachers. Other outreach efforts include letters to science department chairs. Lesson plans, videos, activity guides, and water maps are available to teachers and other group leaders of K-12 students.

One of the most successful and well-recognized water education curricula in Southern California is MWDOC's School Education Program. The District has participated in this program since its inception in January 1973. It reaches nearly 90,000 Orange County students annually. These programs promote water conservation and water conservation related benefits. MWDOC teachers, assisted by its mascot "Ricki the Rambunctious Raindrop," have been educating students in grades kindergarten through high school about the water cycle, the importance and value of water, and the personal responsibility we all have as environmental stewards. MWDOC also formed an exciting partnership with the Discovery Science Center that has allowed both organizations to reach additional Orange County students and provide them with even greater educational experiences in the areas of water and science.

WAVE Program. The District's WAVE Program (Water Awareness Visitor Education Program) is a free voluntary program for businesses designed to educate visitors of Laguna Beach about the importance of water use efficiency. Guests of participating establishments are introduced to the program through the placement of "tent cards," which announce that water will be served only upon request and bed and bath linen will be changed only upon request. These measures save an enormous amount of water, especially in dishwashing operations and in hotel and motel laundry rooms. It is estimated that a single glass of water served in a restaurant or dining room requires four additional glasses of water to wash and rinse each glass.

Water Smart Hotel Program. MWDOC has received grants from DWR and USBR to conduct the Water Smart Hotel Program, designed to provide Orange County hotels and motels with commercial and landscape water saving surveys, incentives for retrofits, and customer follow-up and support. The Program is offered to hotels in MWDOC's service area as identified by retail water agencies. Participating hotels receive survey reports that recommend indoor and outdoor retrofits, upgrades, and other changes that should, based on the survey, result in significant water savings. Quantities of each device and associated fixture and installation costs, water savings and payback information (based on rebate amount Incentives offered through the Save Water Save a Buck Rebate Program) will be augmented using DWR and USBR WUE grant funds. These funds bridge the gap between existing incentives and the actual costs of hotel water survey recommendations.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

The District maintains an emergency response program that aggressively repairs main breaks, hydrant leaks or breaks, and meter leaks. A team is available to permanently repair breaks and promptly restore water service. All meter leaks are investigated and repaired the same day unless unable to do so; then next day service is performed.

MWDOC was awarded a grant to implement a study titled "Water Loss Management Program Assessment: Potable Water System Audits." This study used the AWWA and International Water Association Water Audit Methodology. A system water audit for the District was conducted to determine current water losses and areas for improvement. Results are described in Chapter 4. The District's Water Master Plan also includes improvements to help further reduce unaccounted for water loss.

9.2.6 Water Conservation Program Coordination and Staffing Support

The District's Administration Department consists of a full-time staff member who handles a variety of tasks related to water use efficiency and community information. District staff works closely with MWDOC's Water Use Efficiency staff to develop and implement District and regional programs.

Water Use Efficiency Technician (Full-time) – Assists in implementing the school education program and various water use efficiency programs for the District and participates in public outreach activities designed to promote water conservation.

9.2.7 Other Demand Management Measures

The District offers numerous residential, commercial, industrial, and institutional (CII) rebate programs and provides supplemental funding to offset the cost to our customers. As a member

agency of MWDOC, the District also takes advantage of regional programs offered through the wholesaler. Rebate programs are discussed below.

Survey Programs. The District conducts residential surveys on an informal basis following a high-water bill complaint, a higher-than-normal meter reading, continuous use alert, or by customer request. As part of the District's water budget allocation rate structure, customers requesting an increase in their water budget may be required to participate in the Waterwise House Call program before being considered for a variance.

Direct Install Program. In partnership with MWDOC, the District has participated in the Metropolitan-Funded Member Agency Administered Program (MFMAA) to offer tailored direct-install programs. These programs target high water using, outdated irrigation devices at single-family properties and retrofits them with newer, water saving technologies such as Weather-Based Irrigation Controllers (WBIC) and Low-Precipitation Rate High-Efficiency Sprinkler Nozzles. In addition to the retrofits, each participant selects a program approved landscape contractor to survey their irrigation system and identify potential improvements in water savings. The contractors are then working one-on-one with each participant to schedule installations of new devices.

Calscape Nursery Program. The District participates in a multi-agency program with the Metropolitan Water District of Southern California, local water agencies and the California Native Plant Society to bring more native plants to the region's homes and gardens. The programs goal is to increase the number and variety of native plants offered at local nurseries and ensure consumers have the information they need to plant and maintain the water-efficient flowers, trees, shrubs and succulents. Through the program, staff at participating nurseries receive training on the proper care, maintenance, watering, and planting of California native plants. In addition, native plants at the nurseries are clearly identified and educational materials are available for consumers to take home. In addition to free staff training, the nurseries are added to a native plant directory at Calscape.org, which is marketed to millions of people.

H2O for HOA's. In partnership with 16 other cities and water districts throughout south Orange County, the District partners with the HOA community on water-saving programs through the H2O for HOA program. H2O for HOA's is an annual water forum designed to inform and educate homeowner associations, property managers, and landscape contractors, about water efficient practices, water runoff regulations, cost-effective water management strategies, and available rebate programs.

Smart Timer Rebate Program. Under this regional program, residential and small commercial properties are eligible for a rebate when they purchase and install a weather-based irrigation

controller. These controllers have the potential to save 41 gallons per day per residence and can reduce runoff and pollution by 49 percent. Post installation verification is provided, along with any necessary smart timer scheduling corrections. The site's irrigation system is also evaluated, providing important educational advice on what needs to be improved.

Rotating Nozzle Rebate Program. Through this program, residential and commercial site owners purchase and install high efficiency rotary nozzles in existing irrigation systems. The rebate offsets the cost of the devices and installation. Following the submittal of a rebate application, water bill, and original purchase receipt, MWDOC directs the contractor to perform installation verifications of the sites. Verifications include both residential and commercial properties. As a final step in the program, a qualitative and quantitative evaluation is conducted on the rotary nozzles installed within the three-year program timeline when there is sufficient time to gather consumption data for a 12-month post-installation period.

Rain Barrel Incentive Program. The District offers homeowners the opportunity to install 50-gallon rain harvesting barrels to connect directly to their property's downspouts and use rainwater to hand-water their landscapes. This program helps reduce potable water use while providing an alternate source of irrigation water and further engages residents to their landscapes and gardens. Residents who have participated in this program consider it a low-cost approach to water use efficiency and have been open to more water use efficiency practices in the landscape which include device driven rebate programs such as our SmartTimer, High-Efficiency Rotating Nozzle, and Spray to Drip rebate programs.

Turf Removal Program. Through a partnership between MWDOC, MWD, and local retail water agencies, residential and commercial customers are eligible to receive rebates for turf removed for qualifying projects. The program increases water use efficiency, reduces runoff, and evaluates the effectiveness of water-saving practices in landscapes.

Residential Plumbing Retrofits. Low-flow showerhead saturation is estimated at nearly 100 percent and 94 percent saturation in single and multi-family homes, respectively. As a result, water agencies throughout Orange County have achieved the 75 percent saturation requirement for this BMP. No further low-flow showerhead distribution or installation activity has occurred. Free devices are offered to District customers by request at the District office.

Residential Premium High Efficiency Toilets. The District participates MWDOC's regional Premium High Efficiency Toilet Rebate Program. The program offers incentives to replace old toilets with premium high efficiency toilets that use just 1.06 gallons or less per flush. Premium high efficiency toilets use almost 20 percent less water than the WaterSense standard and flush the same amount of waste just as, if not more, effectively.

Large Landscape Conservation Programs and Incentives. MWDOC offers landscape water use efficiency programs aimed at both residential and commercial customers, with irrigated landscapes greater than 1 acre. MWDOC also offers programs in Orange County to specifically assist retail agencies and their large landscape customers to use water efficiently through a landscape performance certification program and California Friendly Landscape Training for professionals. MWDOC's unique and innovative landscape performance certification program is primarily targeted to homeowner associations within the District. Sites sign up to receive customized water budget reports to track irrigation usage and identify over-watering to maximize water savings.

High Efficiency Washing Machine Rebates. The District participates in the SoCal Water$mart residential rebate program offered by MWD. This program offers financial incentives to single family and multi-family residential customers through the form of a rebate. Orange County residents are eligible to receive a rebate when they purchase a new high efficiency clothes washer (HECW). Rebates are available on a first-come, first-served basis, while funds last. Participants must agree to an inspection of the installed machine for verification of program compliance. Depending on use, these machines can save 10,000 gallons of water per year.

Ultra-Low and Zero Water Urinal Program. Through the partnership with MWDOC, the District offers rebates for ultra-low water and zero water urinals. Ultra-low water urinals utilize only 1 pint (0.125 gallons) of water to flush. These systems combine the vitreous china fixture with either a manual or sensor-operated flush valve. Zero water urinals use no water at all, saving an average of 45,000 gallons of water per year.

Commercial/Industrial Rebate Programs. In partnership with MWDOC and MWD, the District offers rebates to assist CII customers in replacing high-flow plumbing fixtures with low-flow fixtures. Installation of devices is the responsibility of each participant. Participants may purchase and install as many of the water saving devices as is applicable to their site. Rebates are available only on the following devices and must replace higher water use devices.

- High efficiency toilet
- Ultra-low water or zero water urinal
- Connectionless food steamers
- Air-cooled ice machines (Tier III)
- Cooling tower conductivity controller
- pH/conductivity controller
- Dry vacuum pumps
- Laminar Flow Restrictors
- Soil Moisture Probe
- In -Stem Flow Regulators
- Drip Irrigation

9.3 Implementation over Past Five Years

The DMMs implemented by the District are described in Section 9.2. This section provides a quantification of the implementation of DMMs over the previous five years of 2016 through 2020. The nature and extent of the DMM programs (e.g., toilet replacement rebate values, number of customers obtaining a rebate or number of school presentations given by the District, etc.) are provided. Table 9-1 presents data on the number of WUE activities the District implemented with MWDOC during the previous five years. More specific information on these activities and others the District has undertaken are described here.

Table 9-1: MWDOC and LBCWD Conservation Program Activities

Measures Installed	2015/16	2016/17	2017/18	2018/19	2019/20
He Efficiency Clothes Washers	30	12	18	18	15
High Efficiency Toilets	79	-	-	-	2
Rain Barrels	27	3	1	1	10
Premium High Efficiency Toilets	1	3	4	-	-
Rotating Nozzles	286	-	-	-	-
CII Weather Based Irrigation Controllers	1	-	-	-	-
Residential Weather Based Irrigation Controllers	20	7	14	9	15
Turf Removal (square feet)	1,150	3,059	589	-	1,217
Spray-to-Drip (squre feet)	-	-	924	-	-

Source: MWDOC, 2021

Water waste prevention ordinances. The District's water waste prevention ordinance is described in Section 9.2.1. In response to the Governor's drought declaration implementing mandatory water restrictions across California, the District's Board adopted Resolution 797 in 2014 declaring a water supply shortage alert as defined in District Ordinance 100, Water Shortage Contingency Plan, in accordance with Water Code Section 375 et. seq. The Water Shortage Alert put into place mandatory restrictions to achieve a 15 to 30 percent reduction in water use.

Metering. All customers are metered as described in Section 9.2.2.

Conservation pricing. The District has conservation pricing as described in Section 9.2.3. In 2014, the District's Board of Directors revised the Area Factor used to calculate customer's outdoor water allocations. The Board voted to reduce the Area Factor from an assumed 60 percent of the total property square footage as irrigated to 50 percent irrigated.

Public education and outreach. Public education and outreach efforts since 2016 are described in Section 9.2.4.

Programs to assess and manage distribution system real loss. As described in Section 9.2.5, the District is proactive in managing its distribution system losses. In 2018, the District updated its Water Master Plan, which includes improvements to help further reduce unaccounted for water loss.

Water conservation program coordination and staffing support. The District has one full-time staff member dedicated to Water Use Efficiency and Public Outreach.

Other demand management measures. During the previous five years, the District has continued to implement the programs described in Section 9.2. Data on activities that can be quantified are provided in Table 9-1. Because the District's conservation efforts have been so successful, resulting in the ability to meet the 2020 water use target, it will continue to implement the current programs described above. In addition, the District's Commission and Board of Directors annually consider additional conservation programs during the District's budget processes.

9.4 Future Water Use Objectives

The Water Code requires that suppliers or the State develop new water use objectives that are based on specific standards for certain water use sectors. These water use objectives will not be developed until 2023. The first report will require information on what DMMs suppliers will implement to meet their objectives. DWR encourages the District to consider aligning conservation management actions in consideration of these future unknown obligations.

Chapter 10 – Plan Adoption, Submittal, and Implementation

This chapter discusses the UWMP and WSCP adoption, submittal, and implementation process. Since an addendum was provided for the 2015 UWMP to address reduced Delta reliance interests, this addendum was included in the noticing and review actions required for the 2020 UWMP and WSCP. It is noted here that the WSCP (Chapter 8) was adopted as a stand-alone plan that can be updated at any time before the next required update in 2025.

10.1 Inclusion of all 2020 Data

Data provided in this UWMP and the WSCP reflect calendar years. Data utilized is current through the end of the last full year – December 31, 2020. The WSCP was adopted at the same time as the UWMP.

As required by *California Water Code* Section 10631(k), MWDOC provided its member agencies information that quantified water availability to meet their projected demands over the next 25 years. Based on the projections of retail demand and local supply development provided by MWDOC's member agencies and the imported supply availability described in MWD's 2020 UWMP, MWDOC provided data specific to each member agency to be used by that agency to update its own UWMP. These data were used wherever possible for consistency between documents.

10.2 Notice of Public Hearing

To provide public opportunities to participate in the UWMP and WSCP process, the District provided notification of the preparation of the updated UWMP and the WSCP and public noticing of the public hearings. These steps were consistent with all California Water Code requirements for notification of availability of this document in its draft and final forms as discussed here.

10.2.1 Notice to City and County

The District notified several agencies of the preparation of this UWMP. As presented in Table 10-1, the City of Laguna Beach, the primary city within the District's service area, and the County of Orange were notified at least 60 days prior to the public hearing date of June 17, 2021, of the fact that the UWMP and WSCP were under preparation, of the hearing time and place, and of the availability of the UWMP and WSCP to review prior to the hearing. In addition to the city and county who were required to be notified, the District also notified wholesale water suppliers of projected water use.

A copy of the 60-day notification is provided in Appendix I. The following entities received the 60-day notification of the preparation of the Laguna Beach County Water District 2020 UWMP and WSCP.

- City of Laguna Beach
- County of Orange
- El Toro Water District
- Emerald Bay Service District
- Municipal Water District of Orange County
- Orange County Water District
- South Coast Water District

The draft UWMP and WSCP were emailed to these same entities along with a notification of the public hearing. Noticing for the hearing was provided in compliance of Act requirements, as discussed in Section 10.2.2.

Submittal Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
City of Laguna Beach	☑	☑
South Coast Water District	☑	☑
Municipal Water District of OC	☑	☑
Emerald Bay Services District	☑	☑
Orange County Water District	☑	☑
El Toro Water District	☑	☑
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Orange County	☑	☑

10.2.2 Notice to the Public

The District encouraged public participation in the UWMP and WSCP development process through the noticing of the public hearing and by encouraging the review of the draft documents. A legal notice of the public hearings and the availability of the draft UWMP and WSCP were

provided approximately 30 days prior to the June 17, 2021 public hearing with the District's Board of Directors. The public notice, provided in Appendix I, provided the time and place of the hearing as well as the location where the UWMP was available for public review during normal business hours. This notice was published in the *Laguna Beach Independent* and StuNews Laguna once a week for two consecutive weeks with at least five days between each notice. A copy of the Draft UWMP and WSCP were made available for public review at the District headquarters' counter during normal business hours prior to the public hearing. The public hearing was held consistent with the Dymally-Alatorre Bilingual Services Act. This act requires that every local public agency serving a substantial number of non-English speaking people shall employ persons to ensure the provision of information in the language of the non-English speaking person.

10.3 Public Hearing and Adoption

The public hearing was held at a regularly scheduled Board of Directors meeting on June 17, 2021 at 5:00 p.m. at the District headquarters. Adoption of both the UWMP and WSCP occurred on June 17, 2021 by the Board of Directors. During the public hearing, information was provided on the District's achievement of the 2020 water use target, and details of the WSCP. Documentation of the letters notifying the public and agencies, and the adoption resolutions are included in Appendix I.

10.4 Plan Submittal and Public Availability

The draft UWMP and WSCP were made available for public review before the public hearing; the adopted plans were made available for public review during normal business hours at the District office for at least 30 days following submittal to DWR. The adoption resolution is provided in Appendix I.

The final 2020 UWMP and WSCP were provided electronically to the entities listed in Section 10.2.1 which include DWR, the California State Library, MWDOC, EBSD, City of Laguna Beach, County of Orange, local public library, and other entities, within 30 days after adoption or by July 1, 2021 (DWR). The documents were also posted on the District's website for public availability. DWR received the adopted UWMP and WSCP (text and the data tables) electronically through DWR's WUE data online submittal tool by July 1, 2021. The District submitted a CD of the adopted 2021 UWMP including the WSCP to the California State Library within 30 days of adoption. Finally, the city, county, and interested water agencies received an electronic copy of the final UWMP and WSCP within 30 days of adoption.

Appendix A

DWR 2020 UWMP Checklist

Laguna Beach County Water District

Appendix A

DWR 2020 Urban Water Management Plan Checklist

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Section 1.1
Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Executive Summary
Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1
Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.2

Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Appendix I
Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2.2
Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Wholesale only
Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 3.2
Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.2
Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Table 3-1
Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.4
Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Table 3-1
Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3-5

Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Tables 4-1 & 4-2
Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.3
Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	System Water Use	Table 4-5
Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4.4
Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4.3
Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5
Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 4.6
Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Section 5.1 & 5.2 Appendix E
Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.2.1

Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Wholesale only
Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	NA
Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.1
Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Appendix E
Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 7.2.3
Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, *including changes in supply due to climate change.*	System Supplies	Sections 7.2.1 & 7.2.3

Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 6.9
Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 6.8
Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 6.9 Table 6-9
Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2
Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.1
Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.2
Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.1 Appendix F
Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 6.2.1

Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2 Table 6-1
Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 6.2.3
Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7
Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2 Tables 6-2 and 6-3
Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Table 6-4
Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5
Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5 Tables 6-5 and 6-4
Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Sections 6.5.2 & 6.5.3 Table 6-6

Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3
Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6
Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 6.5.2 Table 6-2
Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Sections 6.8 & 6.9
Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 6.11 Table 6-10
Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability.	Water Supply Reliability Assessment	Section 7.2.1
Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.2.4 Appendix G
Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry,	Water Supply Reliability Assessment	Section 7.2.3

		and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.		
Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 7.3
Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 7.3.1
Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 7.3
Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 7.3.3 Table 7-5
Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Sections 3.3, 6.10, 7.2.1, & 7.3.1
Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Chapter 8

Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Section 8.1
Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Section 8.9
Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Section 8.2.1 Table 8-4
Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Section 8.2 Table 8-4
Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Section 8.3
Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross	Water Shortage Contingency Planning	Figure 8-1

		reference their categories with the six standard categories.		
Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Section 8.4.2 Table 8-7
Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Section 8.4.1 Table 8-6
Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Section 8.4.3
Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Section 8.4.1 Table 8-6
Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Table 8-6
Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Section 8.4.6
Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Section 8.5 Table 8-8
Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be	Water Shortage Contingency Planning	Section 8.5 Table 8-8

		triggered and other relevant communications.		
Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Section 8.6
Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Section 8.7
Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Section 8.2.2
Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Section 8.2.2
Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 8.8
Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 8.8
Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Section 8.8
Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of	Water Shortage Contingency Planning	Section 8.9

		monitoring customer compliance.		
Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Section 8.11
Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Sections 8.12 & 10.4 Appendix I
Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Section 10.4
Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Wholesale only
Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Section 9.3
Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use	Plan Adoption, Submittal, and Implementation	Section 10.3

		targets (recommended to discuss compliance).		
Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 10.2.1 Table 10-1
Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 10.4
Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Appendix I
Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Section 10.2
Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Appendix I
Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4
Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted	Plan Adoption, Submittal, and Implementation	Section 10.4

		this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.		Appendix I
Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 10.4
Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.4 Appendix I
Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.4 Appendix I
Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	NA
Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Section 8.12

Appendix B

References

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Appendix C

Agreement for Contract Services between EBSD and District

AGREEMENT FOR CONTRACT SERVICES

BETWEEN

EMERALD BAY SERVICE DISTRICT

AND

LAGUNA BEACH COUNTY WATER DISTRICT

Table of Contents

AGREEMENT FOR CONTRACT SERVICES

BETWEEN

EMERALD BAY SERVICE DISTRICT

AND

LAGUNA BEACH COUNTY WATER DISTRICT

Description of Parties

THIS AGREEMENT is made on September 18, 2001 between EMERALD BAY SERVICE DISTRICT ("EBSD"), a community service district formed and existing pursuant to the Community Services District law, Division 3, Title 6 (commencing at Government Code § 61000 et seq.), and LAGUNA BEACH COUNTY WATER DISTRICT ("LBCWD"), a county water district formed and existing pursuant to the County Water District law, which is currently found at Water Code § 30000 et seq., which is a subsidiary of the City of Laguna Beach.

Recitals

The following paragraphs "A" through "H" are incorporated in the Agreement below, as though fully set forth therein:

A. The LBCWD provides water service to its rate payers in the boundaries of LBCWD, including the Community of Emerald Bay ("Emerald Bay"), a community in the unincorporated area of the County of Orange. LBCWD encompasses all of the property shown in Exhibit A hereof. EBSD encompasses all of the property within Emerald Bay, as shown in Exhibit B hereof.

B. In January, 2001 EBSD resolved both to provide water service to the residents of Emerald Bay, and to seek approval from the Local Agency Formation Commission ("LAFCO") for Emerald Bay's detachment from LBCWD, pursuant to Government Code §§ 56300 et seq. EBSD intends to submit an application to the Local Agency Formation Commission of the County of

Orange ("LAFCO") requesting that LAFCO approve the detachment of Emerald Bay from the LBCWD and requesting that LAFCO recognize that the EBSD has the authority to exercise its power to provide water service to Emerald Bay. EBSD intends to submit its application to LAFCO no later than October 1, 2001. EBSD will pay the LAFCO costs, including any CEQA costs, and the fees and costs of EBSD's consultants. LBCWD will pay EBSD the sum of $25,000.00.

C. LBCWD will not oppose EBSD's application for authority to exercise its power to provide water service to Emerald Bay and for detachment, so long as it does not include any transfer to EBSD of any LBCWD assets (pursuant to Government Code §56886, or otherwise), including, but not limited to priorities of use, water rights, right of use of water, or capacity rights in any LBCWD public improvements, lines, distribution systems, reservoirs, facilities, or of any other LBCWD assets and/or property, real or personal, or any LBCWD money or funds, including cash on hand and moneys due but uncollected, except as specifically stated in this Agreement.

D. Since the LBCWD initiated water service to Emerald Bay, the LBCWD has collected water rates and charges, as well as ad valorem property taxes from the rate payers of Emerald Bay (as it does from LBCWD's other retail customers). Pursuant to Government Code § 57353, no inhabitant, property owner, taxpayer, consumer, or user within Emerald Bay is entitled to either of the following upon detachment: (1) All or any part of any payment on account of the moneys or funds, including cash on hand and moneys due but uncollected, or any property, real or personal, of the LBCWD, (2) Any refund by reason of any taxes, assessments, service charges, rentals, or rates collected prior to Emerald Bay's detachment.

E. Notwithstanding the foregoing, as of the effective date of LAFCO's recognition that the EBSD has the authority to exercise its power to provide water service to Emerald Bay and EBSD's detachment from LBCWD, the pipelines, valves, fire hydrants, and meters within EBSD (hereinafter

called the "Emerald Bay Water Facilities") shall become the property of EBSD, in their "as is" condition.

F. EBSD finds that following LAFCO's recognition of EBSD's authority to exercise its power to provide water service to Emerald Bay and Emerald Bay's detachment from LBCWD, the residents of Emerald Bay may be served water by EBSD, pursuant to the terms and conditions of this Agreement by and between LBCWD and EBSD. Accordingly, while the EBSD will undertake the obligation to provide water service to Emerald Bay following LAFCO's recognition of EBSD's authority to exercise its power to provide water service to Emerald Bay and Emerald Bay's detachment from LBCWD, EBSD contracts with LBCWD to provide wholesale water, maintain and operate the Emerald Bay Water Facilities, and contract engineering services, operation and maintenance services, and administrative services to EBSD pursuant to the terms and conditions of this Agreement. EBSD enters into this Agreement on behalf of the water rate payers of Emerald Bay.

G. LBCWD and EBSD seek the distribution as herein agreed, of the funds each agency deposited in an account pursuant to the "Joint Exercise of Powers Agreement Creating the Laguna Beach/Emerald Bay Public Facilities Authority" ("JPA").

H. LBCWD desires that EBSD release LBCWD from any and all liability related to EBSD's claims as described below in paragraph 16, and EBSD releases LBCWD from those claims.

NOW, THEREFORE, in consideration of the mutual promises set forth below, LBCWD and EBSD agree as follows:

Agreement

1. Water. Subject to the terms and conditions set forth in this Agreement, LBCWD agrees to provide wholesale, potable water to EBSD, as an independent water Community Service District,

and EBSD agrees to purchase all water needed by EBSD, to supply Emerald Bay, as a wholesale customer and independent agency, from LBCWD.

2. LBCWD charges to serve EBSD.

a. Cost of Water. EBSD shall pay LBCWD the same rate for water that LBCWD is charged for water purchased from Metropolitan Water District of Southern California ("MWD") delivered through the Municipal Water District of Orange County ("MWDOC") (the "wholesale rate for water"). The present wholesale rate for water is $1.07 per CCF. The proportional impact of any and all increases or decreases in the wholesale rate for water purchased by LBCWD from MWDOC/MWD, or supplemental water from a source other than MWDOC/MWD, shall be passed on to EBSD retroactive to the date of such increases or decreases, in the form of rate increases or decreases. The wholesale water rate charged EBSD under this Agreement will never exceed LBCWD's wholesale cost of water.

b. Delivery Charge. In addition to the water rate set forth in "a." above, EBSD will pay a delivery charge of $.74 per CCF to LBCWD, consisting of a charge for transportation and distribution and a meter charge based on the size of meter pursuant to the LBCWD Fee Schedule. The delivery charge paid for by EBSD includes unscheduled meter replacement, any repair or replacement of distribution pipelines or appurtenances in Emerald Bay costing less than $5,000.00 per single project, exercise and normal maintenance as appropriate of valves, fire hydrants, and miscellaneous appurtenances. The proportional impact of any increases or decreases in costs to LBCWD for delivery will be passed on to EBSD, in the form of rate increases or decreases, retroactive to the date of such increases or decreases. The delivery charge to EBSD will never increase any more than to other LBCWD customers.

c. Administration and Overhead Expenses. In addition to the water rate set forth in "a." above, and the delivery charge set forth in "b." above, EBSD will pay LBCWD for its administration and overhead expenses at the rate of $.61 per CCF. The proportional impact of any increases or decreases in costs to LBCWD with respect to administration and overhead expenses will be passed on to EBSD proportionately, in the form of rate increases or decreases, retroactive to the date such increased or decreased costs are incurred by LBCWD. LBCWD will make the documents which reflect increases and/or decreases in administration and overhead expenses available to EBSD to review in September of each year.

d. Capital Improvements. EBSD shall also be billed on a time and material basis, and shall pay LBCWD the entire cost for all capital improvements with respect to Emerald Bay Water Facilities, including, but not limited to, repair or replacement of distribution mains or appurtenances costing more than $5,000.00 per single project, as well as any scheduled meter replacement, and scheduled valve and fire hydrant replacement. LBCWD will collect all the ad valorem property taxes within the LBCWD until such time as EBSD's detachment from LBCWD is final. The cost of capital improvements in EBSD's water system will be paid from Emerald Bay derived property taxes until EBSD directly receives such Emerald Bay derived property taxes, at which time LBCWD will bill EBSD for such capital improvements, and EBSD shall pay LBCWD for the same.

(1) LBCWD will notify EBSD of any capital improvements to be made except in case of emergency.

(2) LBCWD shall keep a careful record of all material provided and services performed; LBCWD and EBSD shall meet annually in September to review such records. LBCWD shall provide an itemized billing statement to EBSD in support of LBCWD's billing upon request.

e. Contribution to Cost of Providing Water to EBSD. EBSD will annually pay LBCWD 7% of LBCWD's total contribution to the LBCWD reservoir reserve fund, so long as EBSD is a wholesale water customer of LBCWD. (As LBCWD presently contributes $400,000 annually to such fund from property taxes, it is anticipated that EBSD's annual contribution to such LBCWD fund will be $28,000.00.)

f. EBSD Surcharge. In addition to the payments required above by paragraph 2 of this Agreement, EBSD may request that LBCWD add to the bill LBCWD sends to EBSD customers, a surcharge as determined from time to time by EBSD, to the extent permitted by law. LBCWD shall pay EBSD within fifteen (15) days of each month the surcharge levied and received by LBCWD from EBSD's customers, from the previous month's billings.

g. Limited Increases. Any increase imposed on EBSD with respect to the wholesale cost of water, delivery charge, and administration and overhead expenses, will not exceed the increase imposed on LBCWD retail customers.

3. Shortages. Any MWD/MWDOC water shortage allocation, any service interruption, and/or MWD/MWDOC supply restrictions will be proportionately allocated to LBCWD and EBSD customers.

4. Meters.

a. All service connections to the EBSD water system shall be metered.

b. LBCWD has the right to test any and all meters in EBSD for accuracy, and repair and/or replace defective meters as necessary, at EBSD's expense.

c. EBSD authorizes LBCWD to estimate consumption and submit an estimated billing to EBSD's customer(s) (estimations will be based on historical usage when possible), for

consumption if necessary, due to a defective meter, the unauthorized taking of water, or the inability to obtain an accurate meter reading.

d. EBSD shall grant LBCWD access to all water meters in Emerald Bay at all times.

5. Unmetered Water. EBSD agrees that LBCWD shall bill EBSD quarterly for all unmetered water usage, including, but not limited to, the cost of any water theft, system flushing, fire fighting or testings, and all other hydrant use, authorized or unauthorized.

6. Additional Fees. EBSD shall pay the rates and fees indicated in the Fee Schedule for Emerald Bay; the fees charged EBSD and its customers will be the same as the fees charged LBCWD's customers. The impact of any increase or decrease in costs to LBCWD to provide services identified in the Fee Schedule will be passed on to EBSD and the Fee Schedule will be modified accordingly.

7. EBSD Customer Bills. LBCWD shall, on behalf of EBSD, bill each EBSD customer as part of its administrative services on a bi-monthly cycle, and receive all payments from EBSD customers. The billing will include a charge for the "wholesale" cost of water based upon the customer's metered consumption, in addition to the delivery cost, administration and overhead expense, and any surcharge legally imposed by EBSD, if any, but pursuant to EBSD's request, will be shown on the bill as a water rate, meter charge, and EBSD surcharge. EBSD will reimburse LBCWD for all costs due to non-payment of bills, tampering with, removal of, or obstruction of any water meter, after LBCWD is unable to collect from the customer. Should LBCWD thereafter collect any sums from such customers, already paid by EBSD, LBCWD shall credit EBSD in the amount of such payment. Thirty days before LBCWD sends an EBSD customer to an outside source for collection, LBCWD shall advise EBSD.

8. Cooperation.

a. LBCWD Requests. EBSD agrees to cooperate with all reasonable requests of LBCWD to enable LBCWD to provide the services described above.

b. Provision of Services. EBSD grants to LBCWD, the sole and exclusive right to operate and maintain the Emerald Bay Water Facilities, for the term of this Agreement. LBCWD will apply the same standards with respect to the provision of water in Emerald Bay as throughout the LBCWD.

c. Access. EBSD agrees to grant unrestricted access to LBCWD to Emerald Bay's Water Facilities for the purposes of providing water and services pursuant to this Agreement.

d. Water Shut-Off and Right to Sever Connections. LBCWD shall have the right to shut-off water flow, or sever connections between EBSD's water system and that of LBCWD, when necessary to perform maintenance, construction or repairs to any portion of the water system, or in the case of a threat to the public water supply, and LBCWD will provide EBSD prior notice, whenever possible.

e. Identification. LBCWD personnel shall carry, or wear, indicia identifying themselves as LBCWD personnel at all times when servicing Emerald Bay.

f. Compliance with Laws. EBSD grants LBCWD the right to implement and enforce all applicable Federal, State and local laws pertaining to the operation of the water system in Emerald Bay, including, but not limited to statutes contained in the California Water Code, Health & Safety Code, Business and Professions Code, and all other California laws and regulations, as well as all cross-connection control and water quality regulations. EBSD shall assume ultimate liability for any administrative actions generated by regulatory agencies as a result of conditions within EBSD's water system that are beyond the operational control of LBCWD.

9. Term of Agreement.

a. Effective Date. This Agreement will become effective on the date that LAFCO recognizes that EBSD has the authority to exercise its power to provide water service to Emerald Bay and EBSD's detachment from LBCWD is final, except that Paragraphs 10, and 13 through 21, inclusive, of this Agreement are effective immediately upon execution by LBCWD and EBSD. The water rate payers of Emerald Bay shall remain the LBCWD's retail customers until such time as LAFCO recognizes that EBSD has the authority to exercise its power to provide water service to Emerald Bay and EBSD's detachment from LBCWD is final.

b. Termination. This Agreement will continue in effect from and after its effective date for five (5) years. This Agreement shall automatically renew for subsequent five (5) year terms, unless EBSD terminates this Agreement by delivering to LBCWD, at least six (6) months prior to the end of any five (5) year term, a written notice stating EBSD's intention not to renew this Agreement, in which case this Agreement will terminate at the end of the five year term in which such notice is timely given LBCWD by EBSD; additionally, EBSD reserves the right to terminate this Agreement on six (6) months advance written notice should LBCWD cease being a subsidiary district of the City of Laguna Beach. Notwithstanding the foregoing, EBSD may not terminate this Agreement as to Paragraphs 10, and 13 through 21, inclusive, of this Agreement.

c. Lease of Capacity. In the event that EBSD terminates this Agreement and notices LBCWD of EBSD's intent not to renew this Agreement, as provided above in paragraph 9.b, EBSD shall have the right to negotiate with LBCWD and execute a lease, for reasonable and fair compensation, for a portion of LBCWD's capacity to transport water to EBSD to serve water in Emerald Bay. Notwithstanding the foregoing, LBCWD cannot be compelled to enter into and/or

execute a lease with EBSD if circumstances change after September 18, 2001, which make LBCWD's execution unreasonable.

d. Legal and Equitable Remedies. Because of the importance of the services and water to be provided by LBCWD to EBSD pursuant to the terms of this Agreement, in addition to the other rights and remedies that EBSD may have for a breach of this Agreement, the EBSD shall have the right to enforce this Agreement, and all of its provisions, by injunction, specific performance, or other relief in a court of equity.

10 Assets. LBCWD owns and shall continue to own all reservoirs, water distribution lines, pumping stations, water facilities, property, real and personal, water rights, including but not limited to groundwater rights, moneys and funds, including cash on hand, moneys due but uncollected, all reserves of LBCWD, and all other assets of every kind (all hereinafter referred to as "LBCWD assets"). At the termination of this Agreement (EBSD's non-renewal of this Agreement pursuant to paragraph 9.b above). EBSD shall not: (1) make a claim for continuation of the water supply made available by this Agreement, based on reliance, estoppel, intervening public use, prescription, water shortage emergency, or unforeseen or unforeseeable increases in demand, or any other cause, or (2) claim any entitlement ot any LBCWD assets, or any refund by reason of any taxes, assessments, service charges, rentals, or rates collected by LBCWD or others. Nor will EBSD encourage, support, or finance the filing of a claim or lawsuit by any individual or entity with respect to any LBCWD asset of any kind, as Government Code § 57353 provides:

> "No inhabitant, property owner, taxpayer, consumer, or user within territory detached from a district or city shall be entitled to either of the following:

(a) All or any part or to any payment on account of the moneys or funds, including cash on hand and moneys due but uncollected, or any property, real or personal, of the city or district.

(b) Any refund by reason of any taxes, assessments, service charges, rentals, or rates collected prior to the effective date of the detachment."

Notwithstanding the foregoing, as of the effective date of LAFCO's recognition that the EBSD has the authority to exercise its power to provide water service to Emerald Bay and Emerald Bay's detachment from LBCWD, the Emerald Bay Water Facilities shall become the property of EBSD, in their "as is" condition.

11. Indemnification.

a. Indemnification of LBCWD. Except to the extent caused by the negligence or willful misconduct of LBCWD, its agents, employees, officers, directors, commissioners, subcontractors, and independent contractors, EBSD shall exonerate, hold harmless, indemnify, and defend LBCWD, its agents, employees, officers, directors, commissioners, subcontractors, independent contractors, and customers, from any and all claims, obligations, liabilities, costs, demands, damages (whether direct or consequential), expenses, suits or causes of action, including, but not limited to, costs and attorney's fees, which may arise out of any injury to or death of any person, and/or damage to property, if such injury, death or damage arises out of or is attributable to or results from the negligent acts or omissions of EBSD, EBSD's principals, officers, directors, employees, representatives, agents, assigns, contractors, subcontractors, and/or customers.

b. Indemnification of EBSD. Except to the extent caused by the negligence or willful misconduct of EBSD, its agents, officers, directors, employees, independent contractors, customers,

residents of Emerald Bay and/or owners of property within Emerald Bay, or their agents, employees, tenants, guests, or independent contractors, LBCWD shall exonerate, hold harmless, indemnify, and defend EBSD from any and all claims, obligations, liabilities, costs, demands, damages (whether direct or consequential), expenses, suits or causes of action, including, but not limited to, costs and attorney's fees, which may arise out of any injury to or death of any person, and/or damage to property, if such injury, death or damage arises out of or is attributable to or results from the negligent acts or omissions of LBCWD, LBCWD's employees, representatives, agents, officers, directors, commissioners, assigns, contractors, and/or subcontractors, in the LBCWD or in Emerald Bay, relating to water service to and in Emerald Bay.

12. Insurance.

a. LBCWD shall name EBSD as an additional covered party under its Association of California Water Agencies Joint Powers Insurance Authority Memorandum of Liability Coverage, so long as the EBSD purchases all of Emerald Bay's potable water from LBCWD.

b. For so long as EBSD purchases water from LBCWD, EBSD shall procure and maintain public liability, property damage, and products liability insurance which includes coverage for EBSD's water operations and Emerald Bay Water Facilities, issued by a responsible insurance company authorized to do business in California, rated A+/XII or better in Best's Insurance Guide, insuring EBSD and its employees, and naming LBCWD as an additional insured, against all bodily injury, property damage, personal injury, and other loss or liability suffered in Emerald Bay, and/or caused by or connected with EBSD (its agents and/or employees), and/or Emerald Bay Water Facilities, and/or the provision of water to Emerald Bay, of not less than:

(1) $5,000,000 for injury to or death of one person and, subject to the limitation for the injury or death of one person, of not less than $10,000,000 for injury to or death of two or more persons as a result of any one accident or incident; and

(2) $10,000,000 for property damage.

Each of the insurance policies obtained by EBSD shall include an endorsement that, before changing or canceling any policy, the issuing insurance company shall give EBSD and LBCWD at least 30 days' prior written notice. The insurance shall include broad form contractual liability coverage insuring against EBSD's indemnity obligations under this Agreement. Each policy shall provide that the insurance is primary and noncontributory, shall provide for severability of interests, and shall provide that an act or omission by the insured party or any additional insured does not void or reduce coverage afforded the insured party or any additional insured. Such limits of liability shall be increased, and modified or additional types of coverage shall be obtained, when changed circumstances reasonably so require.

c. LBCWD shall make a copy of its Memorandum of Liability Coverage available to EBSD on its request, and EBSD shall make a copy of its insurance policy available to LBCWD on its request.

13. Assignment. EBSD shall not sell, assign, transfer, or encumber this Agreement.

14. Notice. Any notice required to be given under this Agreement may be given by personal delivery or U.S. mail (notice shall be deemed communicated as of the date of personal delivery, or five days from mailing), as follows:

To EBSD:
Emerald Bay Service District
600 Emerald Bay
Laguna Beach, CA 92651
Attention: General Manager

To LBCWD:
Laguna Beach County Water District
306 Third Street
Laguna Beach, CA 92651
Attention: General Manager

15. Disbursement of JPA funds. EBSD shall cause, from the $322,500 deposited by LBCWD and EBSD in a JPA account: (1) the return of $275,000.00 to LBCWD (which was previously deposited in a JPA account), (2) the return to EBSD of the sum of $22,500.00, and (3) the payment to EBSD of $25,000 from such account.

16. Compromise Agreement and Mutual Release. In return for valuable consideration, receipt of which is hereby acknowledged, EBSD and the Emerald Bay rate payers hereby waive, release and forever discharge, any and all claims, demands, actions and causes of actions of any and every kind and character, known or unknown, which they may have against the LBCWD, its officers, directors, commissioners, agents, attorneys, employees, sub-contractors, independent contractors, and customers, arising out of or relating to EBSD's allegation that it did not receive notice of LAFCO proceedings with respect to LBCWD, including, but not limited to, LBCWD's reorganization as a subsidiary district of the City of Laguna Beach, EBSD's allegation that Emerald Bay is not represented by the ex officio Board of Directors of LBCWD, and the November, 2000 vitiation of both the Water Facilities Agreement and Joint Exercise of Powers Agreement Creating the Laguna Beach/Emerald Bay Public Facilities Authority ("JPA") entered into between LBCWD and EBSD. This release and the consideration for which it is provided is pursuant to a settlement and compromise of contested claims and shall not be construed by any party to be an admission of liability in any form or amount. EBSD and the rate payers of Emerald Bay expressly waive any and all rights under Section 1542 of the Civil Code of the State of California, which provides as follows:

> "A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor."

17. Integration Clause. This Agreement constitutes the entire understanding between LBCWD and EBSD regarding the subjects covered, and that understanding shall not be modified, terminated, or discharged except by a subsequent written agreement signed by both parties, except as provided herein.

18. Limitation. Nothing contained in this Agreement shall be construed to create a partnership or joint venture between the parties or to make either party the agent of the other. Neither party shall be or become liable or bound by any representation, act, omission, or agreement of the other which may be contrary to the provisions of this Agreement.

19. Attorneys' Fees and Costs. If any legal action or other proceeding is brought for the enforcement or interpretation of this Agreement, the prevailing party shall be entitled to recover its reasonable attorneys' fees and other costs incurred in that action or proceeding, in addition to any other relief to which it may be entitled. This provision applies to the entire Agreement.

20. Representation. Each party to this Agreement was represented by counsel in its negotiation and execution.

21. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

22. Acts Beyond the Control of the Parties. In the event the performance of this Agreement by either party is prevented or delayed by act of God, war, civil insurrection, terrorism, state of emergency, an act of any public enemy, domestic unrest, the elements, fire, flood, storm, earthquake, strikes, lockouts, or by any law, regulation, or order of any federal, state, county, municipal authority, or any agency thereof, or by any other cause beyond the control of either party, such parties' performance, to the extent it is so prevented or delayed, shall be excused. However, nothing contained in this paragraph shall excuse the prompt payment of sums due as required by this

Agreement or the performance of any act rendered difficult solely because of the financial condition of the party required to perform the act.

IN WITNESS WHEREOF, the parties hereby have caused this Agreement to be executed the date first above written.

EMERALD BAY SERVICE DISTRICT

By _____

By _____

LAGUNA BEACH COUNTY WATER DISTRICT

By _____

By _____

APPROVED AS TO FORM:

STRADLING, YOCCA, CARLSON & RAUTH

By _____
Fritz Stradling, Esq., Attorneys for Emerald Bay Service District

ROCKWELL & MEYER, INC.

By _____
Paula E. Meyer, Attorneys for Laguna Beach County Water District

EXHIBIT A

BOUNDARY MAP OF
LAGUNA BEACH COUNTY WATER DISTRICT

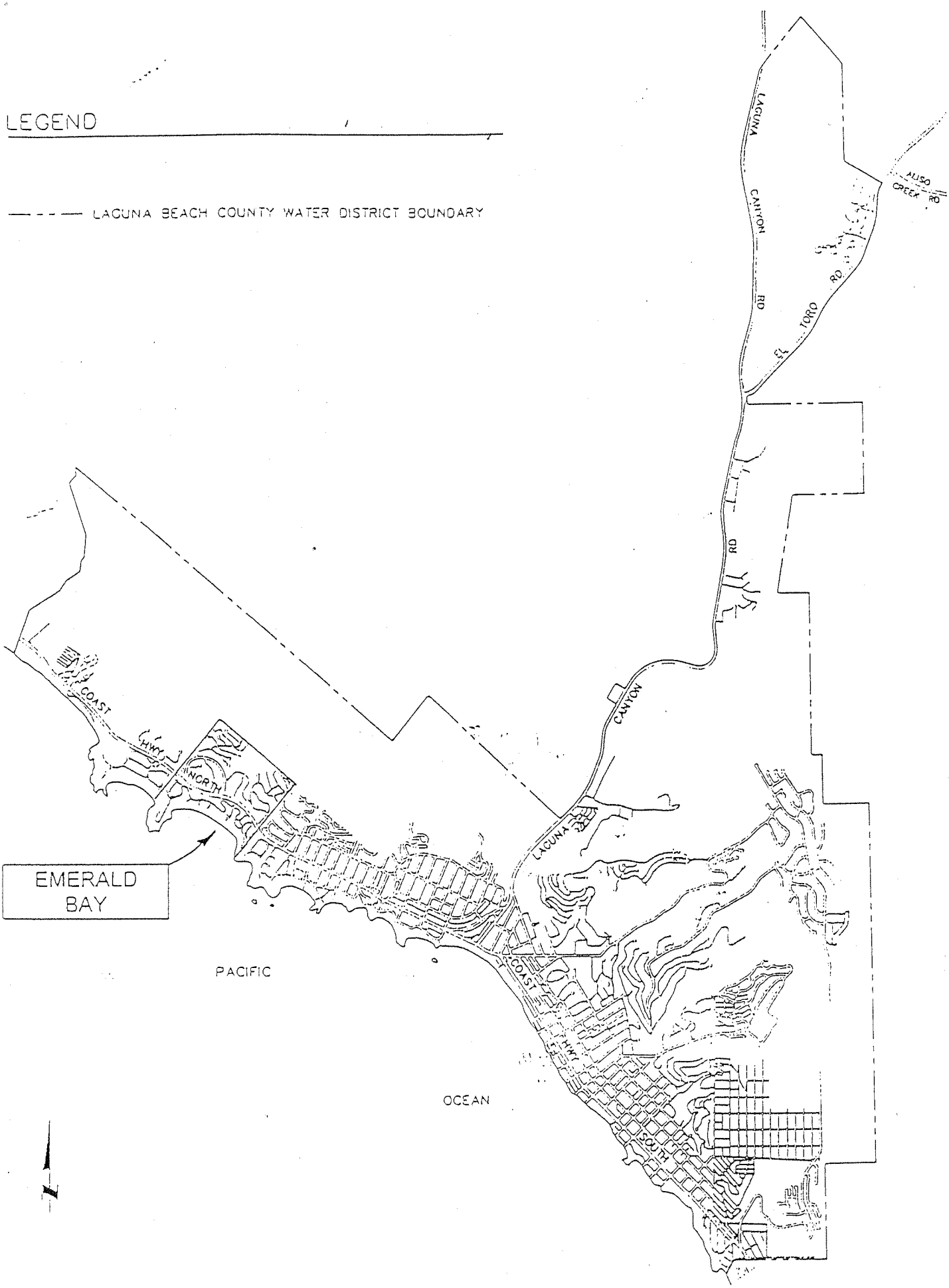
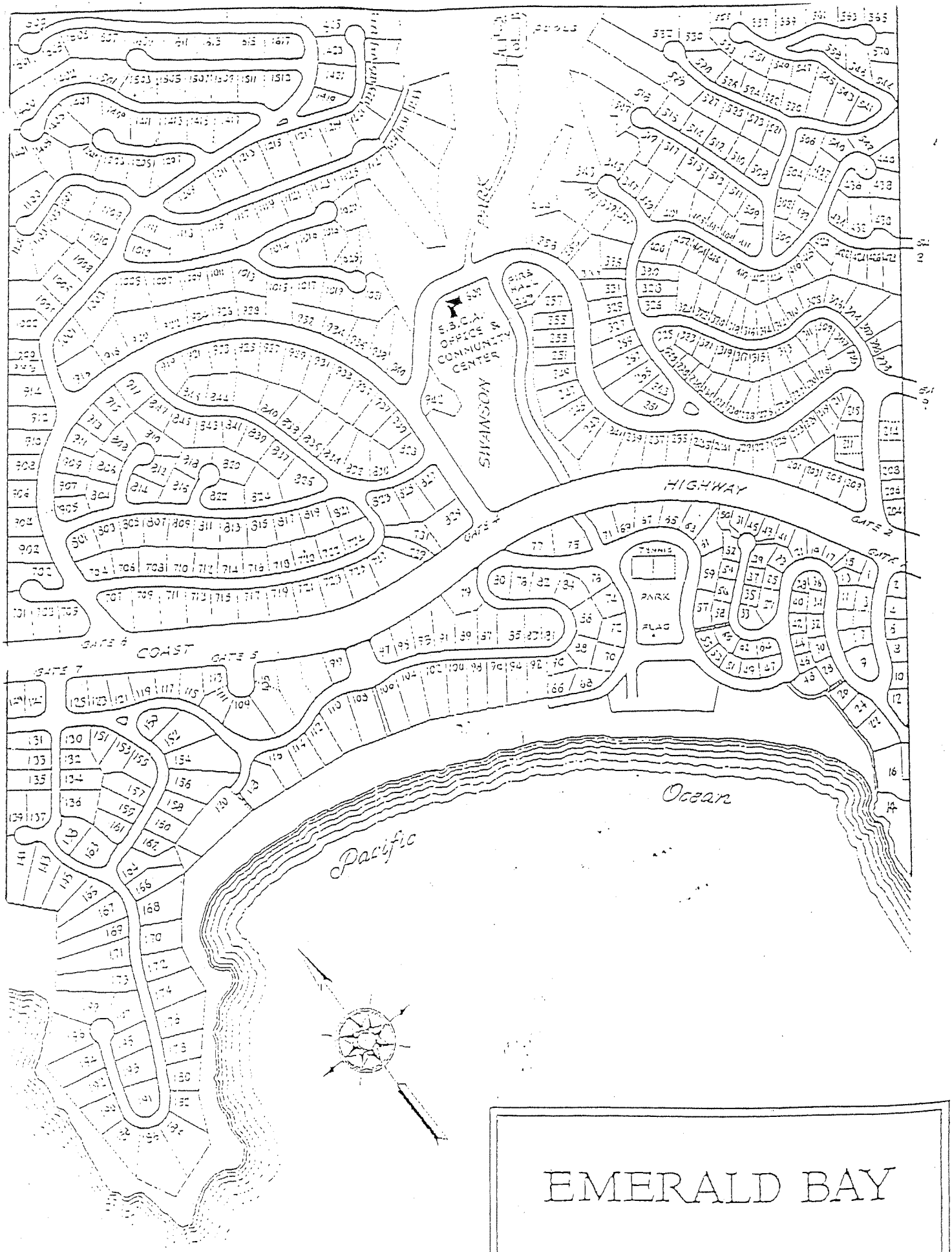

LEGEND
LAGUNA BEACH COUNTY WATER DISTRICT BOUNDARY
LAGUNA CANYON RD.
ALISO CREEK RD.
EL TORO RD.
LAGUNA CANYON RD.
COAST HWY.
NORTH
EMERALD BAY
PACIFIC
OCEAN
COAST HWY.
SOUTH
N

EXHIBIT A

EXHIBIT B

BOUNDARY MAP OF
EMERALD BAY



EMERALD BAY

EXHIBIT B

Appendix D

Water Loss Audits

AWWA Free Water Audit Software:
Reporting Worksheet

? Click to access definition
+ Click to add a comment

Water Audit Report for: Laguna Beach County Water District
Reporting Year: 2016 | 1/2016 - 12/2016

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	n/a		acre-ft/yr				acre-ft/yr
Water imported:	7	3,502.250	acre-ft/yr	7			acre-ft/yr
Water exported:	n/a		acre-ft/yr				acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 3,502.250 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	5	3,139.555	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	10	14.100	acre-ft/yr			
Unbilled unmetered:	5	8.756	acre-ft/yr		8.756	acre-ft/yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: ? 3,162.411 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 339.839 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		8.756	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	3	15.848	acre-ft/yr	0.50%		acre-ft/yr
Systematic data handling errors:	5	7.849	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: ? 32.452 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 307.387 acre-ft/yr

WATER LOSSES: 339.839 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: ? 362.695 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	135.0	miles
Number of active AND inactive service connections:	9	8,670	
Service connection density:		64	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line:

(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 4 70.0 psi

COST DATA

Total annual cost of operating water system:	10	$12,148,271	$/Year	
Customer retail unit cost (applied to Apparent Losses):	8	$6.85	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	5	$942.00	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 67 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: Laguna Beach County Water District
Reporting Year: 2017 1/2017 - 12/2017

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	n/a		acre-ft/yr				acre-ft/yr
Water imported:	7	3,556.360	acre-ft/yr	7			acre-ft/yr
Water exported:	n/a		acre-ft/yr				acre-ft/yr
WATER SUPPLIED:		**3,556.360**	acre-ft/yr				

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	3,243.562	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	10	14.100	acre-ft/yr			
Unbilled unmetered:	5	8.891	acre-ft/yr		8.891	acre-ft/yr
AUTHORIZED CONSUMPTION:		**3,266.553**	acre-ft/yr			

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption)

289.807 acre-ft/yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	8.891	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	3	8.165	acre-ft/yr	0.25%	acre-ft/yr
Systematic data handling errors:	5	8.109	acre-ft/yr	0.25%	acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **25.164** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **264.642** acre-ft/yr

WATER LOSSES: **289.807** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **312.798** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	135.0	miles
Number of active AND inactive service connections:	9	8,670	
Service connection density:		64	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	4	70.0	psi

COST DATA

Total annual cost of operating water system:	10	$14,867,205	$/Year	
Customer retail unit cost (applied to Apparent Losses):	8	$7.02	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	5	$997.00	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 69 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported
2: Customer metering inaccuracies
3: Variable production cost (applied to Real Losses)

AWWA Free Water Audit Software:
Reporting Worksheet

? Click to access definition
+ Click to add a comment

Water Audit Report for: Laguna Beach County Water District (CA3010017)
Reporting Year: 2019 | 1/2019 - 12/2019

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	n/a		acre-ft/yr				acre-ft/yr
Water imported:	7	3,330.160	acre-ft/yr	9		-0.670	acre-ft/yr
Water exported:	n/a		acre-ft/yr				acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 3,330.830 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	3,147.500	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	10	3.820	acre-ft/yr			
Unbilled unmetered:	5	8.325	acre-ft/yr		8.325	acre-ft/yr

Use buttons to select percentage of water supplied OR value

AUTHORIZED CONSUMPTION: ? 3,159.645 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 171.185 acre-ft/yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	8.327	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	4	7.898	acre-ft/yr	0.25%	acre-ft/yr
Systematic data handling errors:	5	7.869	acre-ft/yr	0.25%	acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: ? 24.094 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 147.091 acre-ft/yr

WATER LOSSES: 171.185 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: ? 183.330 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	135.0	miles
Number of active AND inactive service connections:	9	8,670	
Service connection density:		64	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	5	70.0	psi

COST DATA

Total annual cost of operating water system:	10	$15,382,750	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$5.25	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	5	$1,050.00	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 71 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported
2: Customer metering inaccuracies
3: Variable production cost (applied to Real Losses)

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: Laguna Beach County Water District
Reporting Year: 2018 | 1/2018 - 12/2018

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	n/a		acre-ft/yr				acre-ft/yr
Water imported:	7	3,603.190	acre-ft/yr	7		10.080	acre-ft/yr
Water exported:	n/a		acre-ft/yr				acre-ft/yr
WATER SUPPLIED:		**3,593.110**	acre-ft/yr				

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	3,407.070	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	10	11.140	acre-ft/yr			
Unbilled unmetered:	5	9.008	acre-ft/yr		9.008	acre-ft/yr
AUTHORIZED CONSUMPTION:		**3,427.218**	acre-ft/yr			

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption)

165.892 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		8.983	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	7	8.567	acre-ft/yr	0.25%		acre-ft/yr
Systematic data handling errors:	5	8.518	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **26.067** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **139.825** acre-ft/yr

WATER LOSSES: **165.892** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **186.040** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	135.0	miles
Number of active AND inactive service connections:	9	8,670	
Service connection density:		64	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	5	70.0	psi

COST DATA

Total annual cost of operating water system:	10	$14,963,950	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$7.50	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	5	$1,015.00	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported
2: Variable production cost (applied to Real Losses)
3: Billed metered

Appendix E

SB X7-7 Tables

Appendix E

Laguna Beach County Water District

SB X7-7 Compliance Tables

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*
NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate	
Method Used to Determine 2020 Population (may check more than one)	
☐	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☐	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☑	**4. Other** DWR recommends pre-review
NOTES: Population estimate developed by Center for Demographic Research (CSUF) and provided by MWDOC.	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	18,401
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use							
Compliance Year 2020	2020 Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use*	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	3,487	272		-		-	**3,215**
* **Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.							
NOTES: Water exported from system to EBSD of 272 AF							

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Purchased imported water
This water source is *(check one)* **:**	
☐	The supplier's own water source
☑	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	2,815	-	2,815

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.*

[2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s)
Meter Error Adjustment
Complete one table for each source.

Name of Source	Groundwater
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	672		672

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.*

[2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)

2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
3,215	18,401	**156**

NOTES:

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD (Enter "0" if Adjustment Not Used)			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
156	-	-	-	-	156	162	**YES**

[1] *All values are reported in GPCD*

[2] ***2020 Confirmed Target GPCD*** *is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.*

NOTES:

Appendix F

2016 Agreement between OCWD and LBCWD Regarding Groundwater Production within OCWD Groundwater Basin

Orange County Basin Groundwater Management Plan

AGREEMENT BETWEEN ORANGE COUNTY WATER DISTRICT AND LAGUNA BEACH COUNTY WATER DISTRICT REGARDING LAGUNA BEACH COUNTY WATER DISTRICT GROUNDWATER PRODUCTION WITHIN ORANGE COUNTY WATER DISTRICT GROUNDWATER BASIN

This Agreement is entered into as of 1-20, 2016, by and between the ORANGE COUNTY WATER DISTRICT, a special district of the State of California created and formed under the Orange County Water District Act, Chapter 924, California Statutes of 1933, as amended ("OCWD") and the LAGUNA BEACH COUNTY WATER DISTRICT, a County water district formed and operated pursuant to Water Code sections 30200, *et seq.* ("LBCWD") (OCWD and LBCWD are each hereinafter referred to as a "Party," and collectively as the "Parties").

RECITALS

A. Pursuant to the Orange County Water District Act, Chapter 924 of the California Statutes of 1933, as amended (the "OCWD Act"), the Legislature of the State of California has vested in OCWD the statutory responsibility to manage, regulate, replenish and protect the quality and quantity of the subterranean groundwater supplies within the boundaries of OCWD, and the large subterranean groundwater basin underlying the OCWD boundaries (the "OCWD Basin").

B. Prior to the creation of OCWD, LBCWD owned and operated groundwater production wells near the coast of the Pacific Ocean in the City of Huntington Beach, California. LBCWD produced groundwater from the OCWD Basin and transported the produced groundwater through a pipeline to the LBCWD service area in the City of Laguna Beach, California.

C. Prior to the creation of OCWD, litigation entitled *Campbell, et al. v. The Irvine Co., et al.,* Orange County Superior Court Case No. 29524 (the "1933 Adjudication Lawsuit") was filed against LBCWD and other producers of groundwater within the OCWD Basin to define the water rights of the litigant parties. On June 13, 1933, judgment was entered in the 1933 Adjudication Lawsuit (the "1933 Adjudication Judgment"). Paragraph X of the 1933 Adjudication Judgment adjudicated to LBCWD, as against all other land owners overlying the OCWD Basin, the right to produce up to 2,025 acre feet per year from a specified area near the coast of the Pacific Ocean in the vicinity of Huntington Beach, California, and overlying the OCWD Basin.

D. By the enactment of the OCWD Act, OCWD was created in 1934. OCWD's original boundaries included the service area of LBCWD. However, due to increased groundwater production within the Basin, seawater intrusion became more pronounced and diminished water quality at LBCWD's wells in Huntington Beach. As a result of this water quality impact, LBCWD abandoned its Huntington Beach wells and thereafter detached its territory from OCWD in 1949.

E. Beginning in the mid-1980's, LBCWD commenced discussions with OCWD regarding the resumption of LBCWD groundwater production from within the OCWD Basin, based upon LBCWD's assertion of pre-existing rights under the 1933 Adjudication Judgment.

F. On June 1, 1993, OCWD and LBCWD entered into a "Memorandum of Understanding between Orange County Water District and Laguna Beach County Water District Relating to Groundwater Development in the Santa Ana Basin" (the "1993 MOU"), under which OCWD implicitly acknowledged LBCWD's right to produce and transport up to 2,025 acre feet of groundwater per year from the OCWD Basin from a production well to be developed and constructed in Huntington Beach seaward of the "Talbert Barrier," subject to LBCWD complying with all of the provisions of OCWD Act applicable to all groundwater producers within OCWD's boundaries.

G. After investigation, LBCWD has determined that its proposed production of groundwater from the location identified in the 1993 MOU would not be productive because of the degradation of groundwater quality in that location due to sea water intrusion and the presence of colored water.

H. LBCWD and OCWD mutually desire to enter into this Agreement to set forth the manner in which LBCWD may exercise its groundwater production rights under the 1933 Adjudication Judgment.

NOW, THEREFORE, in consideration of the facts recited above and the covenants, conditions and promises set forth below, OCWD and LBCWD agree as follows:

SECTION 1: LBCWD RIGHTS UNDER THE 1933 ADJUDICATION JUDGMENT.

1.1 LBCWD shall have the right, under the 1933 Adjudication Judgment, to produce up to 2,025 acre feet per year of groundwater from any location within the OCWD Basin.

1.2 Except as set forth in Paragraph 1.1 above, LBCWD shall have no right to produce any groundwater from within the OCWD Basin, or to export or receive any groundwater from the OCWD Basin. LBCWD acknowledges that its groundwater production and importation right under the 1933 Adjudication Judgment and this Agreement is limited to no more than 2,025 acre feet per year.

1.3 LBCWD shall comply with all of the provisions of the OCWD Act that are applicable to all groundwater producers within the boundaries of OCWD, including but not limited to the registration of groundwater production facilities; groundwater production reporting requirements; the payment of replenishment assessments and additional replenishment assessments on produced groundwater; groundwater production requirements and limitations, if applicable; and the payment of basin equity assessments and surcharges, if applicable, on produced groundwater.

1.4 For purposes of LBCWD's annual basin equity assessment report of groundwater production relative to total water supplies and the imposition of basin equity assessments and surcharges, pursuant to Section 31.5 of the OCWD Act, the basin production percentage ("BPP") annually established by OCWD pursuant to Section 31.5(g)(2)(B) of the OCWD Act shall be

applied to the total annual water supplies of LBCWD. The following two examples shall guide the Parties in calculating any basin equity assessments ("BEA") and surcharges due from LBCWD to OCWD by reason of LBCWD's production of groundwater of the OCWD Basin under different BPP scenarios:

1.4.1 Assumed BPP of 70%.

- Total LBCWD Water Supplies = 3,100AFY
- Maximum LBCWD Groundwater Production Within BPP (i.e., without payment of BEA) = 2,170AFY (70% x 3,100AFY)
- LBCWD Pumping Within BPP = 2,025AFY (LBCWD pays RA and ARA on 2,025AFY, but pays no BEA or surcharge)

1.4.2 Assumed BPP of 65%.

- Total LBCWD Water Supplies = 3,100AFY
- Maximum LBCWD Groundwater Production Within BPP (i.e., without payment of BEA = 2,015AFY (65% x 3,100AFY)
- LBCWD Pumping Within BPP = 2,015AFY and 10AFY above BPP (LBCWD pays RA and ARA, but not BEA or surcharge, on 2,015AFY, and pays RA, ARA BEA and any surcharge on 10AFY)

SECTION 2: LBCWD GROUNDWATER PRODUCTION.

2.1 LBCWD may exercise its groundwater production rights under the 1933 Adjudication Judgment and this Agreement either by constructing and operating its own groundwater production facility in accordance with Paragraph 2.2 herein, or by accepting delivery of groundwater produced by a producer within the OCWD boundaries, in accordance with Paragraph 2.3 herein.

2.2 In the event that LBCWD determines to exercise its groundwater production rights by constructing and operating its own groundwater production facility:

2.2.1 LBCWD shall register such groundwater production facility in accordance with Section 24 of the OCWD Act, and shall install on such groundwater production facility and operate a water flow measuring device as required by Section 35 of the OCWD Act; and

2.2.2 LBCWD shall be responsible for all property acquisition and well construction costs, as well as all pipeline right-of-way and construction costs (or the lease of capacity in existing or future pipeline facilities) in order to transport the produced groundwater to the LBCWD service area.

2.3 In the event that LBCWD determines to exercise its groundwater production rights by receiving delivery of up to 2,025 acre-feet per year of groundwater produced by a groundwater producer within the OCWD boundaries (hereinafter, a "Participating Producer"), the following terms and conditions shall apply:

2.3.1 Upon LBCWD identifying the Participating Producer and entering into a contract or other instrument by which the Participating Producer will produce groundwater on behalf of LBCWD, LBCWD and the Participating Producer shall jointly execute and deliver to OCWD a notice containing all of the following information:

(i) Identification of the Participating Producer's groundwater production facility(ies) from which groundwater will be produced on behalf of LBCWD.

(ii) Description of the existing or proposed transmission and/or distribution pipelines and appurtenant facilities through which such groundwater will be transported to LBCWD.

(iii) Identification of any intervening local agencies or water purveyors by or through which such groundwater will be transported before entering the LBCWD service area.

(iv) The projected annual schedule for the Participating Producer's production of groundwater on behalf of LBCWD in accordance with this Agreement.

2.3.2 In addition to the biannual water production statement filed by the Participating Producer regarding groundwater produced by the Participating Producer for the benefit of its customers and water users pursuant to Section 29 of the OCWD Act, the Participating Producer and LBCWD shall biannually jointly file with OCWD a separate water production statement reflecting the groundwater produced by the Participating Producer on behalf of LBCWD under this Agreement (the "Joint Water Production Statement"). Each such Joint Water Production Statement shall conform in all respects to the requirements of Section 29 of the OCWD Act, except as set forth in this Paragraph 2.3.

2.3.3 In addition to the annual basin equity assessment report filed by the Participating Producer regarding groundwater produced by the Participating Producer for the benefit of its customers and water users pursuant to Section 31.5(j) of the OCWD Act, the Participating Producer and LBCWD shall annually jointly file with OCWD a separate basin equity assessment report reflecting the groundwater produced by the Participating Producer on behalf of LBCWD under this Agreement (the "Joint BEA Report"). Each such Joint BEA Report shall conform in all respects to the requirements of Section 31.5(j) of the OCWD Act, except as set forth in this Paragraph 2.3.

2.3.4 LBCWD shall pay to OCWD the replenishment assessment and additional replenishment assessment established by OCWD pursuant to Sections 27 and 27.1 of the OCWD Act on all groundwater produced by the Participating Producer on behalf of LBCWD, as reflected in each Joint Water Production Statement filed with OCWD.

2.3.5 LBCWD shall pay to OCWD the BEA and surcharge, if applicable, on all groundwater produced by the Participating Producer on behalf of LBCWD in excess of the BPP, based upon the groundwater production reported in each Joint BEA Report filed with OCWD

and in accordance with Section 31.5(j) of the OCWD Act and the calculation methodology in Paragraph 1.4 above.

2.3.6 LBCWD shall be responsible for all pipeline right-of-way and construction costs (or the lease of capacity in existing or future pipeline facilities) in order to transport to the LBCWD service area the groundwater produced by the Participating Producer on behalf of LBCWD.

2.4 LBCWD shall be responsible for preparing, processing and approving, as the lead agency, all documentation required by the California Environmental Quality Act, Public Resources Code section 21000, *et seq.* ("CEQA"), as may be required for LBCWD's construction of groundwater production facilities and pipeline facilities, or the use of groundwater production facilities and pipeline facilities owned by the Participating Producer and/or other parties, and the production and use of groundwater under this Agreement. LBCWD shall indemnify, defend and hold harmless OCWD and its officers, directors, employees, agents and representatives (collectively, "OCWD Parties") from and against any and all lawsuits, actions, causes of actions, claims and demands, and any and all court costs and attorneys' fees related thereto (collectively, "Claims") in any way relating to the approval of this Agreement, the approval of any CEQA document by LBCWD as lead agency or by OCWD as responsible agency, if applicable, or to any groundwater production by or behalf of LBCWD from within the OCWD Basin.

SECTION 3: CONSIDERATION FOR LBCWD GROUNDWATER PRODUCTION RIGHTS.

3.1 In addition to (and not in lieu of) LBCWD's payment of all applicable replenishment assessments, additional replenishment assessments and basin equity assessments under the OCWD Act for all groundwater produced by or on behalf of LBCWD from within the OCWD Basin under this Agreement, LBCWD shall pay to OCWD the sum of $3,100,000 (the "OCWD Consideration"). The OCWD Consideration shall be paid in five equal annual installments of $620,000 per year, as follows:

3.1.1 The first $620,000 installment payment on the OCWD Consideration shall be paid by LBCWD to OCWD within 10 calendar days of LBCWD or the Participating Producer commencing the extraction of groundwater for LBCWD's benefit.

3.1.2 The second $620,000 installment payment on the OCWD Consideration shall be due and payable by LBCWD to OCWD within 12 months following the payment of the first installment as set forth in Paragraph 3.1.1, above.

3.1.3 Each succeeding $620,000 installment payment shall be made by LBCWD to OCWD on or before the annual anniversary of the first such installment payment as set forth in Paragraph 3.1.1, until such time as LBCWD has paid the full amount of the OCWD Consideration in the amount of $3,100,000.

3.1.4 Notwithstanding the foregoing, LBCWD may pay to OCWD the OCWD Consideration, or any installment, prior to the deadlines set forth in Paragraphs 3.1.1, 3.1.2 and 3.1.3.

3.2 As partial consideration to OCWD under this Agreement, LBCWD shall, to the maximum extent permitted by law, indemnify, defend and hold harmless OCWD and the OCWD Parties from and against any and all Claims in any way arising out of or connected with the performance or non-performance of LBCWD or the Participating Producer under this Agreement, or LBCWD's discharge or failure to discharge its obligations hereunder, or in any way relating to LBCWD's negligent acts or omissions or willful misconduct under this Agreement.

3.3 OCWD and LBCWD each release, forever discharge and covenant not to sue the other Party, and its respective directors, officers, employees, representatives and agents, from any and all Claims which the releasing Party could otherwise bring or have brought against the other Party with respect to LBCWD's asserted right to produce groundwater under the 1933 Adjudication Judgment, OCWD's construction and operation of GWRS injection wells within LBCWD's groundwater production area as defined by Paragraph X of the 1933 Adjudication Judgment, or any other issue or matter relating to LBCWD's asserted groundwater rights or OCWD's groundwater management rights and activities prior to the date of this Agreement. Each of the Parties acknowledges that it is familiar with the provisions of California Civil Code section 1542, which provides as follows:

> "A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which if known by him or her must have materially affected his or her settlement with the debtor."

OCWD and LBCWD, being aware of Civil Code section 1542, each hereby expressly waives any rights it may have thereunder, as well as under any other statutes or common law principles of similar effect.

3.4 By the execution of this Agreement, the Parties hereby rescind the 1993 MOU. From and after the date execution of this Agreement, the 1993 MOU shall have no further force or effect.

3.5 The parties acknowledge that, for so long as this Agreement remains in effect, any and all rights that LBCWD may have to produce groundwater from the Basin, including but not limited to any rights under the 1933 Adjudication Judgment, shall be limited to those rights set forth in this Agreement. For so long as this Agreement remains in effect, LBCWD shall have no rights to produce groundwater within the OCWD Basin, or to receive or import groundwater produced within the OCWD Basin, other than as set forth in this Agreement.

SECTION 4: MISCELLANEOUS.

4.1 Notices. All payments, notices or other communications provided for or permitted under this Agreement shall be made by hand delivery, pre-paid first class mail, or email, or reputable overnight courier (e.g., FedEx, UPS) as follows:

To OCWD:

Orange County Water District

18700 Ward Street
P.O. Box 8300
Fountain Valley, CA 92728-8300
Attention: General Manager
Email: _____

To LBCWD:

Laguna Beach County Water District
306 Third Street
P.O. Box 987
Laguna Beach, CA 92652
Attention: _____
Email: _____

All such payments, notices and communication shall be deemed to have been duly given when delivered, if personally delivered or if delivered by email, where an email provides a date and time stamp of date of transmission; on date of delivery when delivered by a reputable overnight courier that provides written documentation of delivery; and two business days after being deposited in the mail, postage pre-paid, if mailed as described above. Each Party may, by written notice to the other as set forth herein, change the name, address or contact person for that Party.

4.2 Assignment Prohibited. No Party shall assign this Agreement, in whole or in part, or any of its interests hereunder, to any other person or entity, without the prior written consent of the other Party, which may be withheld in its sole and absolute discretion. Any attempt to transfer or assign this Agreement, or any privilege hereunder, without such written consent shall be void and confer no right on any person or entity that is not a Party to this Agreement.

4.3 No Third Party Beneficiaries. Nothing expressed or mentioned in this Agreement is intended or shall be construed to give any person, other than the Parties hereto and their respective authorized successors and assigns, any legal or equitable right, remedy or claim under or in respect to this Agreement or any provisions contained in this Agreement. This Agreement and all of the conditions and provisions hereof are intended to be, and are, for the sole and exclusive benefit of the Parties hereto and their respective authorized successors and assigns, and for the benefit of no other person or entity.

4.4 Further Assurances. Each Party, upon the request of the other, agrees to perform such further acts and to execute and deliver such further documents as are reasonably necessary to carry out the provisions of this Agreement.

4.5 Interpretation. The Parties hereto have jointly participated in the drafting of this Agreement and this Agreement shall not be construed for or against any Party. The language and all parts of this Agreement shall be in all cases construed simply accordingly to its fair meaning and not strictly for or against any Party hereto, and section 1654 of the California Civil Code has no applicability to the interpretation of this Agreement.

4.6 Governing Laws; Disputes and Attorneys' Fees. The laws of the State of California shall govern the interpretation and enforcement of this Agreement. The non-prevailing Party in any claim, suit or other action relating to the interpretation or enforcement of this Agreement shall pay to the prevailing Party the costs of such prevailing Party's attorneys' fees and expenses and all other costs and expenses incurred by the prevailing Party in such action, whether such action proceeds to judgment or is resolved prior to judgment.

4.7 Venue. Any legal action initiated pursuant to this Agreement or otherwise with respect to its subject matter shall be instituted in the Superior Court of the County of Orange, California.

4.8 Waiver; Remedies. No delay on the part of either Party hereto in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any waiver on the part of either Party hereto of any right, power or privilege hereunder operate as a waiver of any other right, power or privilege hereunder. Any single or partial exercise of any right, power or privilege hereunder shall not preclude any other or further exercise thereof, or the exercise of any other right, power or privilege under this Agreement.

4.9 Status of Parties. Nothing in this Agreement shall be construed to make the Parties joint venturers or partners, or to create any relationship of principal and agent, and the Parties specifically disavow any such relationship.

4.10 Severability. Should any provision of this Agreement prove to be invalid or illegal, such invalidity or illegality shall in no way affect, impair or invalidate any other provisions of this Agreement, and such remaining provisions shall remain in full force and effect; provided, however, if the illegality or invalidity of any provision undermines the intent of the Parties, then the Parties shall attempt in good faith to amend this Agreement in order to fulfill the intent of the Parties. If the Parties are unable to so amend this Agreement, then this Agreement shall terminate and be of no further force or effect.

4.11 Successors. Subject to Paragraph 4.2 above, this Agreement shall be binding upon and inure to the benefit of the Parties, and their respective successors and assigns.

4.12 Entire Agreement. This Agreement constitutes the entire agreement between the Parties pertaining to the matters provided for herein and, except as herein provided, supersedes all prior and/or contemporaneous agreements and understandings, whether written or oral, between the Parties relating to the matters provided for herein.

4.13 Amendments. This Agreement may be amended only by a writing duly executed by authorized representatives of both of the Parties hereto.

4.14 Counterparts. This Agreement may be execute in any number of counterparts and by the Parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same Agreement.

4.15 Term. This Agreement shall remain in full force and effect until such time as both OCWD and LBCWD mutually agree to terminate this Agreement.

IN WITNESS THEREOF, the Parties have caused this Agreement to be executed as of the date first set forth above.

ORANGE COUNTY WATER DISTRICT

By: _____
Name: CATHY GREEN
Title: President

By: _____
Name: MICHAEL R. MARKUS
Title: General Manager

APPROVED AS TO FORM:

By: _____
Joel Kuperberg, General Counsel

LAGUNA BEACH COUNTY WATER DISTRICT

By: _____
Name: Kelly Boyd
Title: President

By: _____
Name: Renee M. Hinckley
Title: Secretary

APPROVED AS TO FORM:

By: _____
Name: GERALD D. SHOAE
Title: General Counsel

Orange County Basin Groundwater Management Plan

For a copy of the Orange County Water District Groundwater Management Plan 2015 Update, please click on the link:

http://www.ocwd.com/what-we-do/groundwater-management/groundwater-management-plan/

"Basin 8-1 Alternative" is available on OCWD's website also:

https://www.ocwd.com/media/4918/basin-8-1-alternative-final-report-1.pdf.

Appendix G

Reduced Delta Reliance Reporting

Appendix G

Laguna Beach County Water District
REDUCED DELTA RELIANCE REPORTING

Background

Under the Sacramento-San Joaquin Delta Reform Act of 2009, state and local public agencies proposing a covered action in the Delta, prior to initiating the implementation of that action, must prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with applicable Delta Plan policies and submit that certification to the Delta Stewardship Council. Anyone may appeal a certification of consistency, and if the Delta Stewardship Council grants the appeal, the covered action may not be implemented until the agency proposing the covered action submits a revised certification of consistency, and either no appeal is filed, or the Delta Stewardship Council denies the subsequent appeal.

An urban water supplier that anticipates participating in or receiving water from a proposed covered action such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Delta should provide information in their 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1).

WR P1 details what is needed for a covered action to demonstrate consistency with reduced reliance on the Delta and improved regional self-reliance. WR P1 subsection (a) states that:

(a) Water shall not be exported from, transferred through, or used in the Delta if all of the following apply:

> *(1) One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to adequately contribute to reduced reliance on the Delta and improved regional self-reliance consistent with all of the requirements listed in paragraph (1) of subsection (c);*
>
> *(2) That failure has significantly caused the need for the export, transfer, or use; and*
>
> *(3) The export, transfer, or use would have a significant adverse environmental impact in the Delta.*

WR P1 subsection (c)(1) further defines what adequately contributing to reduced reliance on the Delta means in terms of (a)(1) above.

> *(c)(1) Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:*
>
> *(A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;*
>
> *(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and*
>
> *(C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self- reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).*

The analysis and documentation provided below include all of the elements described in WR P1(c)(1) that need to be included in a water supplier's UWMP to support a certification of consistency for a future covered action.

Summary of Expected Outcomes for Reduced Reliance on the Delta

As stated in WR P1 (c)(1)(C), the policy requires that, commencing in 2015, UWMPs include expected outcomes for measurable reduction in Delta reliance and improved regional self- reliance. WR P1 further states that those outcomes shall be reported in the UWMP as the reduction in the amount of water used, or in the percentage of water used, from the Delta.

The expected outcomes for Laguna Beach County Water District's (LBCWD or District) regional self-reliance were developed using the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 – Final Draft (Guidebook Appendix C) issued March 29, 2021. The data used in this analysis represent the total regional efforts of Metropolitan Water District of Southern California (MWD or Metropolitan) and its member agencies, and were developed by Municipal Water District of Orange County (MWDOC) and LBCWD in conjunction with MWD as part of the UWMP coordination process.

The following provides a summary of the near-term (2025) and long-term (2040) expected outcomes for LBCWD's Delta reliance and regional self-reliance. The results show that as a region, LBCWD, MWD, and its member agencies are measurably reducing reliance on the Delta and improving regional self-reliance, both as an amount of water used and as a percentage of water used.

Expected Outcomes for Regional Self-Reliance for LBCWD

Near-term (2025): Normal water year regional self-reliance is expected to increase by 1,232 AF from the 2010 baseline; this represents an increase of about 26 percent of 2025 normal water year retail demands (Table G-2).

Long-term (2040): Normal water year regional self-reliance is expected to increase by nearly 2,223 AF from the 2010 baseline, this represents an increase of about 46 percent of 2045 normal water year retail demands (Table G-2).

Demonstration of Reduced Reliance on the Delta

The methodology used to determine the District's reduced Delta reliance and improved regional self-reliance is consistent with the approach detailed in DWR's UWMP Guidebook Appendix C, including the use of narrative justifications for the accounting of supplies and the documentation of specific data sources. Some of the key assumptions underlying LBCWD's demonstration of reduced reliance include the following.

- All data were obtained from the current 2020 UWMP or previously adopted UWMPs and represent average or normal water year conditions.
- All analyses were conducted at the service area level, and all data reflect the total contributions of LBCWD and MWDOC, in conjunction with information provided by Metropolitan.

Baseline and Expected Outcomes

In order to calculate the expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance, a baseline is needed to compare against. This analysis uses a normal water year representation of 2010 as the baseline, which is consistent with the approach described in the Guidebook Appendix C. Data for the 2010 baseline were taken from LBCWD's 2005 UWMP as the UWMPs generally do not provide normal water year projections for the year that they are adopted. MWDOC and MWD have agreed that a projection can be used instead of actual because actual demand reflects hydrologic variables (MWDOC, 2021a).

Consistent with the 2010 baseline data approach, the expected outcomes for reduced Delta reliance and improved regional self-reliance for 2015 and 2020 were taken from LBCWD's 2010 and 2015 UWMPs respectively. Expected outcomes for 2025 through 2040 are from the current 2020 UWMP. Documentation of the specific data sources and assumptions are included in the discussions below.

Service Area Demands without Water Use Efficiency

In alignment with the Guidebook Appendix C, this analysis uses normal water year demands, rather than normal water year supplies to calculate expected outcomes in terms of the percentage of water used. Using normal water year demands serves as a proxy for the amount of supplies that would be used in a normal water year, which helps alleviate issues associated with how supply capability is presented to fulfill requirements of the UWMP Act versus how supplies might be accounted for to demonstrate consistency with WR P1.

Because WR P1 considers water use efficiency savings a source of water supply, water suppliers such as LBCWD needs to explicitly calculate and report water use efficiency savings separate from service area demands to properly reflect normal water year demands in the calculation of reduced reliance. As explained in the DWR Guidebook Appendix C, water use efficiency savings must be added back to the normal year demands to represent demands without water use efficiency savings accounted for; otherwise the effect of water use efficiency savings on regional self-reliance would be overestimated. Table G-1 shows the results of this adjustment for the District. Supporting narratives and documentation for the all of the data shown in Table G-1 are provided below.

Table G-1 Determining Water Use Efficiency as a Supply

Service Area Water Use Efficiency Demands	2010	2015	2020	2025	2030	2035	2040
Service Area Water Demands with Water Use Efficiency	4,853	4,317	3,243	3,677	3,730	3,703	3,687
Non-Potable Water Demands	-	-	70	70	70	70	70
Potable Service Area Demands with Water Use Efficiency	4,853	4,317	3,173	3,607	3,660	3,633	3,617

Total Service Area Population	2010	2015	2020	2025	2030	2035	2040
Service Area Population	18,730	19,017	18,401	18,404	18,410	18,410	18,410

Water Use Efficiency Since Baseline	2010	2015	2020	2025	2030	2035	2040
Per Capita Water Use (GPCD)	231	203	154	175	177	176	175
Change in Per Capita Water Use from Baseline (GPCD)		(29)	(77)	(56)	(54)	(55)	(56)
Estimated Water Use Efficiency Since Baseline		610	1,595	1,162	1,110	1,137	1,153

Total Service Area Water Demands	2010	2015	2020	2025	2030	2035	2040
Service Area Water Demands with Water Use Efficiency	4,853	4,317	3,243	3,677	3,730	3,703	3,687
Estimated Water Use Efficiency Since Baseline	-	610	1,595	1,162	1,110	1,137	1,153
Service Area Water Demands without Water Use Efficiency	4,853	4,927	4,838	4,839	4,840	4,840	4,840

Service Area Demands with Water Use Efficiency

The service area demands shown in Table G-1 represent the total water demand for LBCWD's service area and include municipal and industrial demands. These demands and the modeling methodologies used to calculate them are

described in Chapter 4 of LBCWD's UWMP. These demands do include sales to Emerald Bay Services District.

Non-Potable Water Demands

There are no demands being met with non-potable water in the District service area. Non-potable supplies have a demand hardening effect due to the inability to shift non-potable supplies to meet potable water demands. When water use efficiency or conservation measures are implemented, they fall solely on the potable water users. This is consistent with the approach for water conservation reporting used by the State Water Resources Control Board.

Total Service Area Population

LBCWD's total service area population as shown in Table G-1 was provided by the Center for Demographic Research. These actual and projected estimates are described in Chapter 4 of the 2020 LBCWD UWMP.

Water Use Efficiency Since Baseline

The water use efficiency numbers shown in Table G-1 represent the formulation that LBCWD utilized, consistent with Appendix C of the DWR UWMP Guidebook approach.

Service area demands are divided by the service area population to get per capita water use in gallons per capita per day (GPCD) for each five-year period. The change in per capita water use from the baseline is the comparative GPCD from that five-year period compared to the 2010 baseline. Changes in per capita water use over time are then applied back to the LBCWD service area population to calculate the estimated WUE supply. This estimated WUE supply is considered an additional supply that may be used to show reduced reliance on Delta water supplies.

The demand and water use efficiency data shown in Table C-1 were collected from the following sources:

- Baseline (2010) values – LBCWD's 2005 UWMP, Table 41
- 2015 values – LBCWD's 2010 UWMP, Table 14
- 2020 values – LBCWD's 2015 UWMP, Table 4-2
- 2025-2040 values – LBCWD's 2020 UWMP, Table 4-3

It should be noted that the results of this calculation differs from what LBCWD calculated under the Water Conservation Act of 2009 (SB X7-7) due to differing formulas. The SB X7-7 calculations are presented in Appendix E and Chapter 5 of the 2020 UWMP.

Supplies Contributing to Regional Self-Reliance

For a covered action to demonstrate consistency with the Delta Plan, WR P1 subsection (c)(1)(C) states that water suppliers must report the expected outcomes for measurable improvement in regional self-reliance. Table GC-2 shows expected outcomes for supplies contributing to regional self-reliance both in amount and as a percentage. The numbers shown in Table G-2 represent efforts to improve regional self-reliance for LBCWD's entire service area and include the total contributions of the District. Supporting narratives and documentation for all data shown in Table G-2 are provided below.

The results shown in Table G-2 demonstrate that LBCWD's service area is measurably improving its regional self-reliance. In the near-term (2025), the expected outcome for normal water year regional self-reliance increases by 1,232 AF from the 2010 baseline; this represents an increase of 25.5 percent of 2025 normal water year retail demands. In the long-term (2040), normal water year regional self-reliance is expected to increase by more than 2,223 AF from the 2010 baseline; this represents an increase of 45.9 percent of 2040 normal water year retail demands.

Table G-2 Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	2010	2015	2020	2025	2030	2035	2040
Water Use Efficiency	-	610	1,595	1,162	1,110	1,137	1,153
Water Recycling			-	70	70	70	70
Stormwater Capture and Use	-	-	-	-	-	-	-
Advanced Water Technologies		-	-	-	1,000	1,000	1,000
Conjunctive Use Projects	-	-	-	-	-	-	-
Local and Regional Water Supply and Storage Projects	-	-	-	-	-	-	-
Other Programs and Projects the Contribute to Regional Self-Reliance	-	-	-	-	-	-	-
Water Supplies Contributing to Regional Self-Reliance	-	610	1,595	1,232	2,180	2,207	2,223

Service Area Water Demands without Water Use Efficiency	2010	2015	2020	2025	2030	2035	2040
Service Area Water Demands without Water Use Efficiency (AF)	4,853	4,927	4,838	4,839	4,840	4,840	4,840

Change in Regional Self Reliance	2010	2015	2020	2025	2030	2035	2040
Water Supplies Contributing to Regional Self-Reliance (AF)	-	610	1,595	1,232	2,180	2,207	2,223
Change in Water Supplies Contributing to Regional Self-Reliance (AF)		610	1,595	1,232	2,180	2,207	2,223

Change in Regional Self Reliance (as a Percent of Water Demand w/out WUE)	2010	2015	2020	2025	2030	2035	2040
Water Supplies Contributing to Regional Self-Reliance (%)	0.0	12.4	33.0	25.5	45.0	45.6	45.9
Change in Water Supplies Contributing to Regional Self-Reliance (%)		12.4	33.0	25.5	45.0	45.6	45.9

Water Use Efficiency

The water use efficiency information shown in Table G-2 is taken directly from Table G-1 above.

Water Recycling

The water recycling values shown in Table G-2 reflect the total recycled water production being discussed with the El Toro Water District as described in Section 6.5.3 of the District's 2020 UWMP.

Advanced Water Technologies

The advanced water technologies values shown in Table 6-2 represents the District's consideration of participating in a regional desalination project in Orange County. This is discussed in Section 6.6 of the District's 2020 UWMP.

Reliance on Water Supplies from the Delta Watershed

MWD's service area as a whole, reduces reliance on the Delta through investments in non-Delta water supplies, local water supplies, and demand management measures. Quantifying LBCWD's investments in self-reliance, locally,

regionally, and throughout Southern California is infeasible for the reasons as noted in the following section on the accounting of supplies for MWD. Due to the regional nature of these investments, LBCWD is relying on MWD's regional accounting of measureable reductions in supplies from the Delta Watershed.

The results shown in MWD's UWMP Appendix 11, Table A.11-3, demonstrate that MWD's service area, which includes LBCWD, is measurably reducing its Delta reliance. In the near-term (2025), the expected outcome for normal water year reliance on supplies from the Delta watershed decreased by 301 TAF from the 2010 baseline; this represents a decrease of 3 percent of 2025 normal water year retail demands. In the long- term (2045), normal water year reliance on supplies from the Delta watershed decreased by 314 TAF from the 2010 baseline; this represents a decrease of just over 5 percent of 2045 normal water year retail demands.

Table C-2 Metropolitan Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
CVP/SWP Contract Supplies	1,472,000	1,029,000	984,000	1,133,000	1,130,000	1,128,000	1,126,000	1,126,000
Delta/Delta Tributary Diversions	-	-	-	-	-	-	-	-
Transfers and Exchanges of Supplies from the Delta Watershed	20,000	44,000	91,000	58,000	52,000	52,000	52,000	52,000
Other Water Supplies from the Delta Watershed	-	-	-	-	-	-	-	-
Total Water Supplies from the Delta Watershed	**1,492,000**	**1,073,000**	**1,075,000**	**1,191,000**	**1,182,000**	**1,180,000**	**1,178,000**	**1,178,000**

Service Area Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Demands without Water Use Efficiency Accounted For	5,493,000	5,499,000	5,219,000	4,938,000	5,019,000	5,143,000	5,248,000	5,361,000

Change in Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Supplies from the Delta Watershed	1,492,000	1,073,000	1,075,000	1,191,000	1,182,000	1,180,000	1,178,000	1,178,000
Change in Supplies from the Delta Watershed	**NA**	**(419,000)**	**(417,000)**	**(301,000)**	**(310,000)**	**(312,000)**	**(314,000)**	**(314,000)**
Percent Change in Supplies from the Delta Watershed(as a Percent of Demand w/out WUE)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
Percent of Supplies from the Delta Watershed	27.2%	19.5%	20.6%	24.1%	23.6%	22.9%	22.4%	22.0%
Change in Percent of Supplies from the Delta Watershed	**NA**	**-7.6%**	**-6.6%**	**-3.0%**	**-3.6%**	**-4.2%**	**-4.7%**	**-5.2%**

Infeasibility of Accounting Supplies from the Delta Watershed for Metropolitan's Member Agencies and their Customers

Metropolitan's service area, as a whole, reduces reliance on the Delta through investments in non-Delta water supplies, local water supplies, and regional and local demand management measures. Metropolitan's member agencies coordinate reliance on the Delta through their membership in Metropolitan, a regional cooperative providing wholesale water service to its 26 member agencies. Accordingly, regional reliance on the Delta can only be measured regionally—not by individual Metropolitan member agencies and not by the customers of those member agencies.

Metropolitan's member agencies, and those agencies' customers, indirectly reduce reliance on the Delta through their collective efforts as a cooperative. Metropolitan's member agencies do not control the amount of Delta water they receive from Metropolitan. Metropolitan manages a statewide integrated conveyance system consisting of its participation in the State Water Project (SWP), its Colorado River Aqueduct (CRA) including Colorado River water resources, programs and water exchanges, and its regional storage portfolio. Along with the SWP, CRA, storage programs, and Metropolitan's conveyance and distribution facilities, demand management programs increase the future reliability of water resources for the region. In addition, demand management programs provide system-wide benefits by decreasing the demand for imported water, which helps to decrease the burden on the district's infrastructure and reduce system costs, and free up conveyance capacity to the benefit of all member agencies.

Metropolitan's costs are funded almost entirely from its service area, with the exception of grants and other assistance from government programs. Most of Metropolitan's revenues are collected directly from its member agencies. Properties within Metropolitan's service area pay a property tax that currently provides approximately 8 percent of the fiscal year 2021 annual budgeted revenues. The rest of Metropolitan's costs are funded through rates

and charges paid by Metropolitan's member agencies for the wholesale services it provides to them.[1] Thus, Metropolitan's member agencies fund nearly all operations Metropolitan undertakes to reduce reliance on the Delta, including Colorado River Programs, storage facilities, Local Resources Programs and Conservation Programs within Metropolitan's service area.

Because of the integrated nature of Metropolitan's systems and operations, and the collective nature of Metropolitan's regional efforts, it is infeasible to quantify each of Metropolitan member agencies' individual reliance on the Delta. It is infeasible to attempt to segregate an entity and a system that were designed to work as an integrated regional cooperative.

In addition to the member agencies funding Metropolitan's regional efforts, they also invest in their own local programs to reduce their reliance on any imported water. Moreover, the customers of those member agencies may also invest in their own local programs to reduce water demand. However, to the extent those efforts result in reduction of demands on Metropolitan, that reduction does not equate to a like reduction of reliance on the Delta. Demands on Metropolitan are not commensurate with demands on the Delta because most of Metropolitan member agencies receive blended resources from Metropolitan as determined by Metropolitan—not the individual member LBCWD—and for most member agencies, the blend varies from month-to-month and year-to-year due to hydrology, operational constraints, use of storage and other factors.

Colorado River Programs

As a regional cooperative of member agencies, Metropolitan invests in programs to ensure the continued reliability and sustainability of Colorado River supplies. Metropolitan was established to obtain an allotment of Colorado River water, and its first mission was to construct and operate the CRA. The CRA consists of five pumping plants, 450 miles of high voltage power lines, one electric substation, four regulating reservoirs, and 242 miles of aqueducts, siphons, canals, conduits and pipelines terminating at Lake Mathews in Riverside County. Metropolitan owns, operates, and manages the CRA. Metropolitan is responsible for operating, maintaining, rehabilitating, and repairing the CRA, and is responsible for obtaining and scheduling energy resources adequate to power pumps at the CRA's five pumping stations.

Colorado River supplies include Metropolitan's basic Colorado River apportionment, along with supplies that result from existing and committed programs, including supplies from the Imperial Irrigation District (IID)-Metropolitan Conservation Program, the implementation of the Quantification Settlement Agreement (QSA) and related agreements, and the exchange agreement with San Diego County Water Authority (SDCWA). The QSA established the baseline water use for each of the agreement parties and facilitates the transfer of water from agricultural agencies to urban uses. Since the QSA, additional programs have been implemented to increase Metropolitan's CRA supplies. These include the PVID Land Management, Crop Rotation, and Water Supply Program, as well as the Lower Colorado River Water Supply Project. The 2007 Interim Guidelines provided for the coordinated operation of Lake Powell and Lake Mead, as well as the Intentionally Created Surplus (ICS) program that allows Metropolitan to store water in Lake Mead.

Storage Investments/Facilities

Surface and groundwater storage are critical elements of Southern California's water resources strategy and help Metropolitan reduce its reliance on the Delta. Because California experiences dramatic swings in weather and hydrology, storage is important to regulate those swings and mitigate possible supply shortages. Surface and groundwater storage provide a means of storing water during normal and wet years for later use during dry years, when imported supplies are limited. The Metropolitan system, for purposes of meeting demands during times of shortage, regulating system flows, and ensuring system reliability in the event of a system outage, provides over 1,000,000 acre-feet of system storage capacity. Diamond Valley Lake provides 810,000 acre-feet of that storage capacity, effectively doubling Southern California's previous surface water storage capacity. Other existing imported

[1] A standby charge is collected from properties within the service areas of 21 of Metropolitan's 26 member agencies, ranging from $5 to $14.20 per acre annually, or per parcel if smaller than an acre. Standby charges go towards those member agencies' obligations to Metropolitan for the Readiness-to-Serve Charge. The total amount collected annually is approximately $43.8 million, approximately 2 percent of Metropolitan's fiscal year 2021 annual budgeted revenues.

water storage available to the region consists of Metropolitan's raw water reservoirs, a share of the SWP's raw water reservoirs in and near the service area, and the portion of the groundwater basins used for conjunctive-use storage.

Since the early twentieth century, DWR and Metropolitan have constructed surface water reservoirs to meet emergency, drought/seasonal, and regulatory water needs for Southern California. These reservoirs include Pyramid Lake, Castaic Lake, Elderberry Forebay, Silverwood Lake, Lake Perris, Lake Skinner, Lake Mathews, Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, Orange County Reservoir, and Metropolitan's Diamond Valley Lake (DVL). Some reservoirs such as Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, and Orange County Reservoir, which have a total combined capacity of about 3,500 AF, are used solely for regulating purposes. The total gross storage capacity for the larger remaining reservoirs is 1,757,600 AF. However, not all of the gross storage capacity is available to Metropolitan; dead storage and storage allocated to others reduce the amount of storage that is available to Metropolitan to 1,665,200 AF.

Conjunctive use of the aquifers offers another important source of dry year supplies. Unused storage in Southern California groundwater basins can be used to optimize imported water supplies, and the development of groundwater storage projects allows effective management and regulation of the region's major imported supplies from the Colorado River and SWP. Over the years, Metropolitan has implemented conjunctive use through various programs in the service area; the following table lists the groundwater conjunctive use programs that have been developed in the region.

Program	Metropolitan Agreement Partners	Program Term	Max Storage AF	Dry-Year Yield AF/Yr
Long Beach Conjunctive Use Storage Project (Central Basin)	Long Beach	June 2002-2027	13,000	4,300
Foothill Area Groundwater Storage Program (Monkhill/ Raymond Basin)	Foothill MWD	February 2003-2028	9,000	3,000
Orange County Groundwater Conjunctive Use Program	MWDOC OCWD	June 2003-2028	66,000+	22,000
Chino Basin Conjunctive Use Programs	IEUA TVMWD Watermaster	June 2003-2028	100,000	33,000
Live Oak Basin Conjunctive Use Project (Six Basins)	TVMWD City of La Verne	October 2002-2027	3,000	1,000
City of Compton Conjunctive Use Project (Central Basin)	Compton	February 2005-2030	2,289	763
Long Beach Conjunctive Use Program Expansion in Lakewood (Central Basin)	Long Beach	July 2005-2030	3,600	1,200
Upper Claremont Basin Groundwater Storage Program (Six Basins)	TVMWD	Sept. 2005- 2030	3,000	1,000
Elsinore Basin Conjunctive Use Storage Program	Western MWD Elsinore Valley MWD	May 2008- 2033	12,000	4,000
TOTAL			**211,889**	**70,263**

Metropolitan Demand Management Programs

Demand management costs are Metropolitan's expenditures for funding local water resource development programs and water conservation programs. These Demand Management Programs incentivize the development of local water supplies and the conservation of water to reduce the need to import water to deliver to Metropolitan's member agencies. These programs are implemented below the delivery points between Metropolitan's and its member agencies' distribution systems and, as such, do not add any water to Metropolitan's supplies. Rather, the effect of these downstream programs is to produce a local supply of water for the local agencies and to reduce demands by member agencies for water imported through Metropolitan's system. The following discussions outline how Metropolitan funds local resources and conservation programs for the benefit of all of its member agencies and the entire Metropolitan service area. Notably, the history of demand management by Metropolitan's member agencies and the local agencies that purchase water from Metropolitan's members has spanned more than four decades. The significant history of the programs is another reason it would be difficult to attempt to assign a portion of such funding to any one individual member LBCWD.

Local Resources Programs

In 1982, Metropolitan began providing financial incentives to its member agencies to develop new local supplies to assist in meeting the region's water needs. Because of Metropolitan's regional distribution system, these programs benefit all member agencies regardless of project location because they help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on Metropolitan's infrastructure, reduce system costs and free up conveyance capacity to the benefit of all the agencies that rely on water from Metropolitan.

For example, the Groundwater Replenishment System (GWRS) operated by the Orange County Water District is the world's largest water purification system for indirect potable reuse. It was funded, in part, by Metropolitan's member agencies through the Local Resources Program. Annually, the GWRS produces approximately 103,000 acre-feet of reliable, locally controlled, drought-proof supply of high-quality water to recharge the Orange County Groundwater Basin and protect it from seawater intrusion. The GWRS is a premier example of a regional project that significantly reduced the need to utilize imported water for groundwater replenishment in Metropolitan's service area, increasing regional and local supply reliability and reducing the region's reliance on imported supplies, including supplies from the State Water Project.

Metropolitan's local resource programs have evolved through the years to better assist Metropolitan's member agencies in increasing local supply production. The following is a description and history of the local supply incentive programs.

Local Projects Program

In 1982, Metropolitan initiated the Local Projects Program (LPP), which provided funding to member agencies to facilitate the development of recycled water projects. Under this approach, Metropolitan contributed a negotiated up-front funding amount to help finance project capital costs. Participating member agencies were obligated to reimburse Metropolitan over time. In 1986, the LPP was revised, changing the up-front funding approach to an incentive-based approach. Metropolitan contributed an amount equal to the avoided State Water Project pumping costs for each acre-foot of recycled water delivered to end-use consumers. This funding incentive was based on the premise that local projects resulted in the reduction of water imported from the Delta and the associated pumping cost. The incentive amount varied from year to year depending on the actual variable power cost paid for State Water Project imports. In 1990, Metropolitan's Board increased the LPP contribution to a fixed rate of $154 per acre-foot, which was calculated based on Metropolitan's avoided capital and operational costs to convey, treat, and distribute water, and included considerations of reliability and service area demands.

Groundwater Recovery Program

The drought of the early 1990s sparked the need to develop additional local water resources, aside from recycled water, to meet regional demand and increase regional water supply reliability. In 1991, Metropolitan conducted the Brackish Groundwater Reclamation Study which determined that large amounts of degraded groundwater in the

region were not being utilized. Subsequently, the Groundwater Recovery Program (GRP) was established to assist the recovery of otherwise unusable groundwater degraded by minerals and other contaminants, provide access to the storage assets of the degraded groundwater, and maintain the quality of groundwater resources by reducing the spread of degraded plumes.

Local Resources Program

In 1995, Metropolitan's Board adopted the Local Resources Program (LRP), which combined the LPP and GRP into one program. The Board allowed for existing LPP agreements with a fixed incentive rate to convert to the sliding scale up to $250 per acre-foot, similar to GRP incentive terms. Those agreements that were converted to LRP are known as "LRP Conversions."

Competitive Local Projects Program

In 1998, the Competitive Local Resources Program (Competitive Program) was established. The Competitive Program encouraged the development of recycled water and recovered groundwater through a process that emphasized cost-efficiency to Metropolitan, timing new production according to regional need while minimizing program administration cost. Under the Competitive Program, agencies requested an incentive rate up to $250 per acre-foot of production over 25 years under a Request for Proposals (RFP) for the development of up to 53,000 acre-feet per year of new water recycling and groundwater recovery projects. In 2003, a second RFP was issued for the development of an additional 65,000 acre-feet of new recycled water and recovered groundwater projects through the LRP.

Seawater Desalination Program

Metropolitan established the Seawater Desalination Program (SDP) in 2001 to provide financial incentives to member agencies for the development of seawater desalination projects. In 2014, seawater desalination projects became eligible for funding under the LRP, and the SDP was ended.

2007 Local Resources Program

In 2006, a task force comprised of member LBCWD representatives was formed to identify and recommend program improvements to the LRP. As a result of the task force process, the 2007 LRP was established with a goal of 174,000 acre-feet per year of additional local water resource development. The new program allowed for an open application process and eliminated the previous competitive process. This program offered sliding scale incentives of up to $250 per acre-foot, calculated annually based on a member LBCWD's actual local resource project costs exceeding Metropolitan's prevailing water rate.

2014 Local Resources Program

A series of workgroup meetings with member agencies was held to identify the reasons why there was a lack of new LRP applications coming into the program. The main constraint identified by the member agencies was that the $250 per acre-foot was not providing enough of an incentive for developing new projects due to higher construction costs to meet water quality requirements and to develop the infrastructure to reach end-use consumers located further from treatment plants. As a result, in 2014, the Board authorized an increase in the maximum incentive amount, provided alternative payment structures, included onsite retrofit costs and reimbursable services as part of the LRP, and added eligibility for seawater desalination projects. The current LRP incentive payment options are structured as follows:

- Option 1 – Sliding scale incentive up to $340/AF for a 25-year agreement term
- Option 2 – Sliding scale incentive up to $475/AF for a 15-year agreement term
- Option 3 – Fixed incentive up to $305/AF for a 25-year agreement term

On-site Retrofit Programs

In 2014, Metropolitan's Board also approved the On-site Retrofit Pilot Program which provided financial incentives to public or private entities toward the cost of small-scale improvements to their existing irrigation and industrial systems to allow connection to existing recycled water pipelines. The On-site Retrofit Pilot Program helped reduce

recycled water retrofit costs to the end-use consumer which is a key constraint that limited recycled water LRP projects from reaching full production capacity. The program incentive was equal to the actual eligible costs of the on-site retrofit, or $975 per acre-foot of up-front cost, which equates to $195 per acre-foot for an estimated five years of water savings ($195/AF x 5 years) multiplied by the average annual water use in previous three years, whichever is less. The Pilot Program lasted two years and was successful in meeting its goal of accelerating the use of recycled water.

In 2016, Metropolitan's Board authorized the On-site Retrofit Program (ORP), with an additional budget of $10 million. This program encompassed lessons learned from the Pilot Program and feedback from member agencies to make the program more streamlined and improve its efficiency. As of fiscal year 2019/20, the ORP has successfully converted 440 sites, increasing the use of recycled water by 12,691 acre-feet per year.

Stormwater Pilot Programs

In 2019, Metropolitan's Board authorized both the Stormwater for Direct Use Pilot Program and a Stormwater for Recharge Pilot Program to study the feasibility of reusing stormwater to help meet regional demands in Southern California. These pilot programs are intended to encourage the development, monitoring, and study of new and existing stormwater projects by providing financial incentives for their construction/retrofit and monitoring/reporting costs. These pilot programs will help evaluate the potential benefits delivered by stormwater capture projects and provide a basis for potential future funding approaches. Metropolitan's Board authorized a total of $12.5 million for the stormwater pilot programs ($5 million for the District Use Pilot and $7.5 million for the Recharge Pilot).

Current Status and Results of Metropolitan's Local Resource Programs

Today, nearly one-half of the total recycled water and groundwater recovery production in the region has been developed with an incentive from one or more of Metropolitan's local resource programs. During fiscal year 2020, Metropolitan provided about $13 million for production of 71,000 acre-feet of recycled water for non-potable and indirect potable uses. Metropolitan provided about $4 million to support projects that produced about 50,000 acre-feet of recovered groundwater for municipal use. Since 1982, Metropolitan has invested $680 million to fund 85 recycled water projects and 27 groundwater recovery projects that have produced a cumulative total of about 4 million acre-feet.

Conservation Programs

Metropolitan's regional conservation programs and approaches have a long history. Decades ago, Metropolitan recognized that demand management at the consumer level would be an important part of balancing regional supplies and demands. Water conservation efforts were seen as a way to reduce the need for imported supplies and offset the need to transport or store additional water into or within the Metropolitan service area. The actual conservation of water takes place at the retail consumer level. Regional conservation approaches have proven to be effective at reaching retail consumers throughout Metropolitan's service area and successfully implementing water saving devices, programs and practices. Through the pooling of funding by Metropolitan's member agencies, Metropolitan is able to engage in regional campaigns with wide-reaching impact. Regional investments in demand management programs, of which conservation is a key part along with local supply programs, benefit all member agencies regardless of project location. These programs help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on Metropolitan's infrastructure, reduce system costs, and free up conveyance capacity to the benefit of all member agencies.

Incentive-Based Conservation Programs

Conservation Credits Program

In 1988, Metropolitan's Board approved the Water Conservation Credits Program (Credits Program). The Credits Program is similar in concept to the Local Projects Program (LPP). The purpose of the Credits Program is to encourage local water agencies to implement effective water conservation projects through the use of financial incentives. The Credits Program provides financial assistance for water conservation projects that reduce demands on Metropolitan's imported water supplies and require Metropolitan's assistance to be financially feasible.

Initially, the Credits Program provided 50 percent of a member LBCWD's program cost, up to a maximum of $75 per acre-foot of estimated water savings. The $75 Base Conservation Rate was established based Metropolitan's avoided cost of pumping SWP supplies. The Base Conservation Rate has been revisited by Metropolitan's Board and revised twice since 1988, from $75 to $154 per acre-foot in 1990 and from $154 to $195 per acre-foot in 2005.

In fiscal year 2020 Metropolitan processed more than 30,400 rebate applications totaling $18.9 million.

Member LBCWD Administered Program

Some member agencies also have unique programs within their service areas that provide local rebates that may differ from Metropolitan's regional program. Metropolitan continues to support these local efforts through a member LBCWD administered funding program that adheres to the same funding guidelines as the Credits Program. The Member LBCWD Administered Program allows member agencies to receive funding for local conservation efforts that supplement, but do not duplicate, the rebates offered through Metropolitan's regional rebate program.

Water Savings Incentive Program

There are numerous commercial entities and industries within Metropolitan's service area that pursue unique savings opportunities that do not fall within the general rebate programs that Metropolitan provides. In 2012, Metropolitan designed the Water Savings Incentive Program (WSIP) to target these unique commercial and industrial projects. In addition to rebates for devices, under this program, Metropolitan provides financial incentives to businesses and industries that created their own custom water efficiency projects. Qualifying custom projects can receive funding for permanent water efficiency changes that result in reduced potable demand.

Non-Incentive Conservation Programs

In addition to its incentive-based conservation programs, Metropolitan also undertakes additional efforts throughout its service area that help achieve water savings without the use of rebates. Metropolitan's non-incentive conservation efforts include:

- residential and professional water efficient landscape training classes
- water audits for large landscapes
- research, development and studies of new water saving technologies
- advertising and outreach campaigns
- community outreach and education programs
- advocacy for legislation, codes, and standards that lead to increased water savings

Current Status and Results of Metropolitan's Conservation Programs

Since 1990, Metropolitan has invested $824 million in conservation rebates that have resulted in a cumulative savings of 3.27 million acre-feet of water. These investments include $450 million in turf removal and other rebates during the last drought which resulted in 175 million square feet of lawn turf removed. During fiscal year 2020, 1.06 million acre-feet of water is estimated to have been conserved. This annual total includes Metropolitan's Conservation Credits Program; code-based conservation achieved through Metropolitan-sponsored legislation; building plumbing codes and ordinances; reduced consumption resulting from changes in water pricing; and pre-1990 device retrofits.

Infeasibility of Accounting Regional Investments in Reduced Reliance Below the Regional Level

The accounting of regional investments that contribute to reduced reliance on supplies from the Delta watershed is straightforward to calculate and report at the regional aggregate level. However, any similar accounting is infeasible for the individual member agencies or their customers. As described above, the region (through Metropolitan) makes significant investments in projects, programs and other resources that reduce reliance on the Delta. In fact, all of Metropolitan's investments in Colorado River supplies, groundwater and surface storage, local resources development and demand management measures that reduce reliance on the Delta are collectively funded by revenues generated from the member agencies through rates and charges.

Metropolitan's revenues cannot be matched to the demands or supply production history of an individual LBCWD, or consistently across the agencies within the service area. Each project or program funded by the region has a different online date, useful life, incentive rate and structure, and production schedule. It is infeasible to account for all these things over the life of each project or program and provide a nexus to each member LBCWD's contributions to Metropolitan's revenue stream over time. Accounting at the regional level allows for the incorporation of the local supplies and water use efficiency programs done by member agencies and their customers through both the regional programs and through their own specific local programs. As shown above, despite the infeasibility of accounting reduced Delta reliance below the regional level, Metropolitan's member agencies and their customers have together made substantial contributions to the region's reduced reliance.

Laguna Beach County Water District's 2015 UWMP Appendix I and Availability of Documents

The information contained in this Appendix G is also intended to be a new Appendix I attached to LBCWD's 2015 UWMP consistent with WR P1 subsection (c)(1)(C) (Cal. Code Regs. tit. 23, § 5003). As stated in WR P1(c)(1)(C), the policy requires that, **commencing in 2015**, UWMPs include expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance. WR P1 further states that those outcomes shall be reported in the UWMP as the reduction in the amount of water used, or in the percentage of water used, from the Delta.

LBCWD provided notice of the availability of the draft 2020 UWMP (including this Appendix G which will also be a new Appendix I to its 2015 UWMP) 2020 WSCP, and the public hearing to consider adoption of both plans and Appendix I to the 2015 UWMP in accordance with CWC Sections 10621(b) and 10642, and Government Code Section 6066, and Chapter 17.5 (starting with Section 7290) of Division 7 of Title 1 of the Government Code. The notice of availability of the documents was sent to cities and counties in LBCWD's service area. In addition, a public notice advertising the public hearing was provided. Copies of the 60-day notification letter sent to the relevant agencies, cities, and the County of Orange and the notice published in the newspapers are included in the District's 2020 UWMP Appendix I. This Appendix G to the District's 2020 UWMP will also be recognized and treated as Appendix I to SWD's 2015 UWMP.

The District held the public hearing for the 1) draft 2020 UWMP, 2) Appendix I to the 2015 UWMP, and 3) 2020 WSCP on June 17, 2021, at the Board of Directors meeting. On June 17, LBCWD's Board determined that the 2020 UWMP and WSCP accurately represent the water resources plan for its service area and it determined that Appendix G included in 2020 UWMP and Appendix I to the 2015 UWMP include all of the elements described in Delta Plan Policy WR P1, *Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance* (Cal. Code Regs. tit. 23, § 5003), which need to be included in a water supplier's UWMP to support a certification of consistency for a future covered action. As stated in its resolution, the Board adopted the 2020 UWMP, Appendix I to the 2015 UWMP, and the 2020 WSCP and authorized their submittal to the State of California. The resolution is also included in the 2020 UWMP Appendix I.

References

References below were provided by MWDOC. Additional references for this document can be found in the District's 2020 UWMP Appendix B.

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2017/12-Dec/Reports/064863458.pdf

http://www.mwdh2o.com/PDF_About_Your_Water/Annual_Achievement_Report.pdf

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2016/12-Dec/Reports/064845868.pdf

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2012/05%20-%20May/Letters/064774100.pdf

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2020/10%20-%20Oct/Letters/10132020%20BOD%209-3%20B-L.pdf

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2001/10-October/Letters/003909849.pdf

Appendix H

Water Shortage Ordinance

ORDINANCE NO. 100

AN ORDINANCE OF THE BOARD OF DIRECTORS OF LAGUNA BEACH COUNTY WATER DISTRICT ESTABLISHING A WATER USE EFFICIENCY & WATER SUPPLY SHORTAGE PROGRAM FOR USERS OF POTABLE WATER PROVIDED BY THE DISTRICT

Be it ordained by the Board of Directors of the Laguna Beach County Water District as follows:

Section I. Title

Laguna Beach County Water District Water Use Efficiency & Water Supply Shortage Ordinance ("Ordinance")

Section II. Findings

1. A reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of Southern California.

2. Southern California is a semi-arid region, largely dependent on imported water supplies from Northern California and the Colorado River. Population growth, drought, climate change, environmental concerns, government policy changes, restrictions on pumping and other factors in our region, in other parts of the State and in the western U.S. make Southern California highly-susceptible to water supply reliability issues.

3. Careful water management requires active water use efficiency measures not only in times of drought but at all times. It is essential to ensure a reliable minimum supply of water to meet current and future water supply needs.

4. California Constitution Article X, Section 2 declares for the general welfare:

    a. Water resources be put to beneficial use
    b. Prevention of water waste and unreasonable water use or methods of water use
    c. Full exercise of water use efficiency with a view to reasonable and beneficial water use

5. California Water Code Section 375 authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce potable water consumption and conserve supplies.

6. California Water Code Section 31027 sets forth the public notification, public meeting and public hearing requirements for water providers proposing the establishment of a water conservation program, ordinance or resolution.

7. California Water Code Sections 350, et. seq., sets forth the determination and notification procedures for water suppliers seeking to declare a water shortage or a water emergency.

8. California Water Code Section 356 allows for the adoption of regulations and restrictions that include discontinuance of service as an enforcement option where a water shortage emergency condition has been declared.

9. California Water Code Section 377 authorizes water suppliers to enforce a comprehensive water conservation program to reduce potable water consumption through establishment of non-compliance charges and other penalties, subject to advance notification to water users.

10. California Water Code Section 370, et. seq., authorizes water suppliers to adopt water allocation programs for water users and allocation-based water conservation pricing.

11. The adoption and enforcement of a Water Use Efficiency & Water Supply Shortage Ordinance is necessary to manage the District's potable water supply short- and long-term and to minimize and/or avoid the effects of drought and water shortage within the District. Such a program is essential to ensure a reliable and sustainable minimum supply of water for public health, safety and welfare.

Section III. Declaration of Purpose and Intent

1. To minimize or avoid the effect and hardship of potential shortages of potable water to the greatest extent possible, this Ordinance establishes a Water Use Efficiency & Water Supply Shortage Program designed to:

    a. Reduce potable water consumption (demand) through efficiency
    b. Enable effective potable water supply planning
    c. Assure reasonable and beneficial use of potable water
    d. Prevent waste of potable water and maximize efficient use in the District

2. The Ordinance establishes:

    a. Permanent mandatory water use standards designed to alter behaviors related to potable water-use efficiency during non-shortage conditions.
    b. Voluntary water use efficiency guidelines, which the District may choose to implement prior to moving into mandatory restrictions when a 5 to 15 percent reduction in consumption is needed from District customers.
    c. Three mandatory levels of potential response to escalating water supply shortages, which the District may choose to implement during times of water shortage or declared water emergency. The three levels of response consist of increasing water use restrictions as a result of worsening drought conditions, emergencies, and/or decreasing supplies.
    d. A water use efficiency and supply shortage program that reduces water consumption within the District through efficiency, enables effective water supply planning, assures reasonable and beneficial use of water, and prevents waste of water.

e. Guidelines for the efficient use of water within the District to avoid and minimize the effect and hardship of water shortage to the greatest extent possible.

Section IV. Definitions

1. General

a. "The District" means Laguna Beach County Water District.
b. "The Board" means the Laguna Beach County Water District Board of Directors.
c. "The Commission" means the Laguna Beach County Water District Commission
d. "Person" means any person or persons, corporation, public or private entity, governmental agency or institution, or any other user of water provided by the District.
e. "Potable Water" means water that is suitable for drinking.
f. "Recycled Water" means the reclamation and reuse of non-potable water and/or wastewater for beneficial use, such as irrigation. Also known as "Reclaimed Water."
g. "Water Waste" refers to uses of water that are limited or prohibited under the Ordinance because they exceed necessary or intended use and could reasonably be prevented, such as runoff from outdoor watering.
h. "Base Water Supply" means the District's average annual water purchases from its wholesaler over a given period, e.g. 2004-2006.
i. "Billing Unit" is equal to 100 cubic feet (1 CCF) of water, which is 748 gallons. Water use is measured in units of 100-cubic-feet and multiplied by applicable water usage rates for billing. Also known as a "unit of water."
j. "Undue Hardship" is a unique circumstance in which a requirement of the Ordinance would result in a disproportionate impact on a water user or property upon which water is used compared to the impact on water users generally or similar properties or classes of water use.

2. Irrigation

a. "Automatic Shut-Off Hose Nozzle" refers to a water-efficient nozzle for use with residential or commercial hoses that must be pressed to start or stop the flow of water.
b. "Irrigation Controller" is the part of an automated irrigation system that instructs the valves to open and close to start or stop the flow of water.
    1. "Sensor-based irrigation controller" operates based on input from a combination of sensors (rain, solar, soil moisture) installed in or around the landscaped area.
    2. "Weather-based irrigation controller" operates automatically based on evapo-transpiration rates (ET) and historic or real-time weather data.
c. "Irrigation System" refers to a manual or automated watering system consisting of pipes, hoses, spray heads and/or sprinkler devices or valves. Also known as a "Landscape Irrigation System."

d. "Large Landscape Areas" means a lawn, landscape, or other vegetated area, or combination thereof, equal to more than one (1) acre of irrigable land.
e. "Valves" refer to the part of an irrigation system that open and close manually or electronically to start or stop the flow of water.

3. Other

a. "Pre-Rinse Kitchen Spray Valves" refer to highly water-efficient sprayers that commercial kitchens use to rinse dishes in the sink before washing and for other preliminary cleaning purposes.
b. "Single-Pass Cooling System" refers to an air conditioning, refrigeration or other cooling system that removes heat by transferring it to a supply of clean water and dumping the water down the drain – after a single use. This type of cooling system is extremely water-inefficient compared to systems that re-circulate the water.

Section V. Application of Ordinance

1. Ordinance provisions apply to any person or entity using potable water provided by the District. This includes individuals, persons, corporations, public or private entities, governmental agencies or institutions, or any other users of water provided by the District.

2. The provisions of the Ordinance shall not apply to the following:

f. Water use necessary to protect public health and safety or for essential government services, such as police, fire, and similar services.

b. Water used by commercial nurseries and growers to sustain plants, trees, shrubs, crops or other vegetation intended for commercial sale.

3. This Ordinance is intended solely to further the efficient use of potable water. It is not intended to implement any provision of federal, state or local statutes, ordinances or regulations relating to protection of water quality or control of drainage or runoff. Refer to the local jurisdiction or Regional Water Quality Control Board for information on storm water ordinances or management plans.

Section VI: Permanent Mandatory Water Use Efficiency Measures

The following Permanent Mandatory Water Use Efficiency Measures for potable water are in effect at all times, whether or not there is a water supply shortage or emergency.

1. General Restrictions

a. Limits on Watering Hours. Watering or irrigating is prohibited any day of the week between 8:00 a.m. and 8:00 p.m. This applies to lawns, landscaping, and all other vegetated areas.

1. The following are exempt from this restriction:

    a. Watering with a hand-held bucket or similar container
    b. Watering with a hand-held hose equipped with an automatic shut-off hose nozzle
    c. Adjusting or repairing an irrigation system for very short periods of time.

b. Water Flow or Runoff. It is prohibited to water lawns, landscaping, and vegetated areas in a manner that causes or allows water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch.

c. Obligation to Fix Leaks, Breaks or Malfunctions in lines, fixtures or facilities. Loss or escape of water through breaks, leaks or malfunctions in the water user's plumbing, distribution or irrigation system is prohibited for any period of time after such water waste should have reasonably been discovered and corrected. Leaks, breaks, or malfunctions must be corrected in no more than three (3) days of District notification. The District, at its sole discretion, may temporarily shut-off service if unable to contact the account holder on record.

d. Hosing or Washing Down Hard or Paved Surfaces. It is prohibited to use water to hose or wash down hard or paved surfaces, such as sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys.

1. The following are exempt from this restriction:

    a. Hosing or washing down with a hand-held bucket or similar container
    b. Hosing or washing down with a hand-held hose equipped with an automatic shut-off hose nozzle
    c. Hosing or washing down with a low-volume high-pressure cleaning machine equipped to recycle used water

e. Hosing or Washing Down Vehicles. It is prohibited to use water to hose or wash down a motorized or non-motorized vehicle, including but not limited to automobiles, trucks, vans, buses, motorcycles, boats or trailers.

2. The following are exempt from this restriction:

    a. Hosing or washing down vehicles with a hand-held bucket or similar container
    b. Hosing or washing down vehicles with a hand-held hose equipped with an automatic shut-off hose nozzle
    c. Commercial car washing facility that recycles water
    d. Mobile car washing services equipped to recycle used water

f. Re-Circulating Decorative Water Fountains and Features. All new decorative water fountains and water features must re-circulate water -- or users must secure a waiver from the District.

g. Unauthorized Use of Fire Hydrants Prohibited. No person may use water from any fire hydrant for any purpose other than fire suppression or emergency aid without first:

1. Requesting and posting the appropriate fees at the District.
2. Obtaining a hydrant meter to record all water consumption for a specified project. Absent a meter, water theft and meter tampering fees will be applied as appropriate.

2. Commercial Kitchen Requirements

a. Water-Efficient Pre-Rinse Kitchen Spray Valves. All new food preparation establishments, such as restaurants, cafes, and hotels, are prohibited from using non-water efficient kitchen spray valves.
b. Best-Available Water-Conserving Technology. All water-using equipment in new commercial kitchens must use the best-available, water-conserving technology.
c. Automatic Shut-Off Hose Nozzles. When hosing or washing kitchen or garbage areas or other areas for sanitary reasons as required by the Health Department, hoses shall be equipped with automatic shut-off hose nozzles.

3. Commercial Water Recirculation Requirements

a. Water Served Only Upon Request. Eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, clubs or other public places where food or drinks are sold, served or offered for sale are prohibited from providing drinking water to any person unless expressly requested.
b. Option Not To Have Towels/Linens Laundered. Hotels, motels and other commercial lodging establishments must provide guests the option of not having their used towels and linens laundered. Lodging establishments must prominently display notice of this option in each room and/or bathroom, using clear and easily understood language.
c. No Installation of Non-re-circulating Water Systems in Car Wash and Laundry Systems. Installation of non-re-circulating water systems is prohibited in new commercial conveyor car wash and new laundry systems.
d. No Installation of Single-Pass Cooling Systems. Installation of single-pass cooling systems is prohibited in buildings requesting new water service.

4. Construction Site Requirements

a. Recycled or non-potable water must be used, when available.
b. No potable water may be used for soil compaction or dust control where there is a reasonably available source of recycled or non-potable water approved by the Department of Public Health and appropriate for such use.
c. Water hoses shall be equipped with automatic shut-off nozzles, given such devices are available for the size and type of hoses in use.

5. Wasteful Water Use. Upon notice by the District, persons shall cease to cause or permit the indiscriminate use of water not otherwise prohibited above which is wasteful and without reasonable purpose.

Section VII: Water Supply Shortage Watch (Water Watch)
5 – 15 percent shortage in imported water supplied to the District and/or up to 15 percent reduction needed in consumer demand

The District will declare a Water Supply Shortage Watch when it determines that a reduction in consumer demand is necessary in order to make more efficient use of limited water supplies and appropriately respond to existing water conditions.

The type of event that may prompt the District to declare a Level 1 Water Supply Shortage Watch could include, among other factors, a finding that its wholesale water provider has allocated no more than 85 percent of the District's base water supply.

In addition to:

1. Permanent Water Use Efficiency Measures identified in Section VI remaining in effect,

The District may also implement any or all of the following actions to reduce consumer demand.

2. Public Outreach. The District may expand water use efficiency programs and notify District customers of need to conserve.
3. Extraordinary Voluntary Water Use Efficiency Measures. The District may implement extraordinary voluntary water use efficiency measures upon declaring a Water Watch.
4. Water Allocations/Water Budget: The District may establish or adjust a water allocation for property served by the District using a method that does not penalize persons for the implementation of conservation methods or the installation of water saving devices. The District must provide notice of the allocation by including it in the regular billing statement for the fee or charge or by any other mailing to the address to which the District customarily mails the billing statement for fees or charges for on-going water service.

   Following the effective date of the water allocation as established by the District, any person that uses water in excess of the allocation will be subject to a penalty, in an amount to be determined by the District, for each billing unit of water in excess of the allocation. The penalty for excess water usage will be cumulative to any other remedy or penalty that may be imposed for violation of this ordinance.

5. Water Supply Shortage Rates: The District may increase water rates, other than Tier 1, by an amount necessary, as determined by the District. The increase in water rates may vary from categories of customers.

6. Other Prohibited Uses. The District may implement other prohibited water uses as deemed necessary, after notice to customers.

Section VIII: Level 1 - Water Supply Shortage Alert (Water Alert)
15 – 30 percent shortage in imported water supplied to the District and/or up to 30 percent reduction needed in consumer demand

A Level 1 Water Supply Shortage Alert exists when the District determines that an additional reduction in consumer demand is necessary to make more efficient use of limited water supplies and appropriately respond to water conditions.

The type of event that may prompt the District to declare a Level 1 Water Supply Shortage includes, among other factors, a finding that its wholesale water provider allocated no more than 70 percent of the District's base water supply.

In addition to:

1. Permanent Water Use Efficiency Measures identified in Section VI remaining in effect; and,

2. Voluntary Water Use Efficiency Measures identified in Section VII remaining in effect.

3. Water Allocations/Water Budgets implemented in Section VII remaining in effect.

4. Water Supply Shortage Rates implemented in Section VII remaining in effect.

The District may also implement any or all of the following actions to reduce consumer demand:

5. Additional Mandatory Water Use Efficiency Measures: The District may implement the following additional mandatory water use efficiency measures, which would apply for the duration of the Level 1 Water Supply Shortage Alert:

    a. Limits on Watering Days. Watering lawns, landscaping and other vegetated areas is limited to no more than three (3) days per week. The District will establish and post a watering schedule.
    b. Timeframe to Fix Leaks, Breaks or Malfunctions in water users' pipelines, fixtures or facilities. Loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing, distribution or irrigation system must be fixed in no more than forty-eight (48) hours following notification from the District – unless other arrangements are made with the District or the system is shut off while waiting for repairs. The District, at its sole discretion, may temporarily shut-off service if unable to contact the account holder on record.
    c. Other Prohibited Uses: The District may implement other prohibited water uses as deemed necessary, following notification of customers.

Section IX. Level 2 - Water Supply Shortage Warning (Water Warning)
30 – 50 percent shortage in imported water supplied to the District and/or up to 50 percent reduction needed in consumer demand

A Level 2 Water Supply Shortage Warning exists when the District determines that a further additional reduction in consumer demand is necessary in order to make more efficient use of limited water supplies and appropriately respond to existing water conditions.

The type of event that may prompt the District to declare a Level 2 Water Supply Shortage Warning could include, among other factors, a finding that its wholesale water provider allocated less than 50 percent of the District's base water supply.

In addition to:

6. Permanent Water Use Efficiency Measures identified in Section VI remaining in effect; and,

7. Voluntary Water Use Efficiency Measures identified in Section VII remaining in effect; and,

8. Level 1 Water Use Efficiency Measures identified in Section VIII remaining in effect.

9. Water Allocations/Water Budgets identified in Section VII remaining in effect.

10. Water Supply Shortage Rates identified in Section VII remaining in effect.

The District may also implement any or all of the following actions to reduce consumer demand:

11. Additional Mandatory Water Use Efficiency Measures: The District may implement the following additional mandatory water use efficiency measures, which would apply for the duration of the Level 2 Water Supply Shortage Warning:

    a. Limits on Watering Days. Watering lawns, landscaping and other vegetated areas is limited to no more than two (2) days per week. The District will establish and post a watering schedule.

        1. The following are exempt from this restriction (subject to hour restrictions, Section VII.1.a, b):

            a. Watering with a hand-held bucket or similar container
            b. Watering with a hand-held hose equipped with a automatic shut-off hose nozzle
            c. Irrigation systems that exclusively use very-low-flow drip type systems where emitters discharge no more than two (2) gallons of water per hour
            d. Adjusting or repairing an irrigation system for very short periods of time
            e. Public works projects and actively-irrigated environmental mitigation projects
            f. Maintenance of existing landscaping necessary for fire protection and/or soil erosion control

g. Maintenance of plant materials identified as rare or essential to the well being of endangered/rare species

b. Filling or Refilling Ornamental Fountains and Ponds. Filling or refilling ornamental lakes and ponds is prohibited.

1. The following are exempt from this restriction

a. Ornamental fountains and ponds that sustain aquatic life -- provided such life is of significant value and were actively managed in the water feature prior to declaring the shortage.

c. Filling or Refilling Residential Pools or Spas. Filling residential swimming pools or outdoor spas is prohibited; refilling more than one (1) foot of water is prohibited.

1. The following are exempt from this restriction:

a. Individuals who, due to health reasons or medical conditions, find it necessary to fill or refill their pools or spas.

d. Hosing or Washing Down Vehicles. It is prohibited to use water to hose or wash down a motorized or non-motorized vehicle, including but not limited to automobiles, trucks, vans, buses, motorcycles, boats or trailers.

1. The following are exempt from this restriction:

a. Commercial car washing facility equipped to recycle water
b. Mobile car washing services equipped to recycle used water

e. New Potable Water Service. The District will not provide new potable water service, new water meters (temporary or permanent) or will-serve letters for the duration of the shortage.

1. The following are exempt from this restriction:

a. Projects necessary to protect public health, safety and welfare
b. Projects that have a valid, unexpired city building permit
c. Projects in which applicants can provide – to the satisfaction of the District – substantial evidence of an enforceable commitment that water demands will be offset prior to the provision of a new water meter(s)
d. Resetting or turning-on meters to restore or continue water service interrupted for one year or less.

12. Other Prohibited Uses: The District may implement other prohibited water uses as deemed necessary, following notification of customers.

Section X. Level 3 - Water Supply Shortage Emergency (Water Emergency)
30 – 50 percent shortage in imported water supplied to the District and/or more than 50 percent reduction needed in consumer demand

A Level 3 Water Supply Shortage exists when the District determines that a further additional reduction in consumer demand is necessary in order to make more efficient use of limited water supplies and appropriately respond to existing water conditions.

The type of event that may prompt the District to declare a Level 3 Water Supply Shortage Emergency could include, among other factors, a finding that its wholesale water provider allocated less than 50 percent of the District's base water supply.

In addition to:

1. Permanent Water Use Efficiency Measures identified in Section VI remaining in effect; and,

2. Voluntary Water Use Efficiency Measures identified in Section VII remaining in effect; and,

3. Level 1 Water Use Efficiency Measures identified in Section VIII remaining in effect; and,

4. Lever 2 Water Use Efficiency Measures identified in Section IX remaining in effect.

5. Water Allocations/Water Budgets identified in Section VII remaining in effect.

6. Water Supply Shortage Rates identified in Section VII remaining in effect.

The District may also implement any or all of the following actions to reduce consumer demand:

7. Water Use Efficiency Measures. The District may implement the following additional mandatory water use efficiency measures, which would apply for the duration of the Level 3 Water Supply Shortage Emergency:

    a. All Watering Prohibited. Watering is prohibited on any day at any time for lawns, landscaping and all vegetated areas. The District will post the no-watering restriction.

        1. The following are exempt from this restriction (subject to hour restrictions in Section VII.1.a, b):

            a. Watering with a hand-held bucket or similar container
            b. Maintenance of existing landscaping necessary for fire protection and/or soil erosion control
            c. Maintenance of plant materials identified as rare or essential to the well being of endangered/rare species

8. Discontinuance of Service: Pursuant to Water Code Section 356, the District may discontinue service to customers who willfully violate provisions of this section.

9. Other Prohibited Uses: The District may implement other prohibited water uses as deemed necessary, following notification of customers

Section XI. Declaration & Notification of Water Shortages/Emergencies

1. Declaration of a Water Watch, Level 1 Water Alert or Level 2 Water Warning: The District may declare a Water Watch, Level 1 Water Alert or Level 2 Water Warning at a regular or special public meeting in accordance with State law.

2. Declaration of Level 3 Water Emergency: The District may declare a Level 3 Water Emergency in accordance with Water Code Sections 350, 351, and 352.

3. Notification of a Level 3 Water Emergency

    a. Except as otherwise provided by State law, the District must publish a copy of the water emergency resolution in a newspaper used for the publication of official notices within the jurisdiction of the District within ten (10) business days of the date that the emergency is declared.
    b. Except as otherwise provided by State law, additional mandatory water use efficiency requirements will take effect on the tenth (10) business day after the date that the emergency is declared.

4. Adjustment to Budget-based Water Allocation Program or Change in Tiered Rates

    a. The District may adjust budget-based water allocations and/or increase water usage rates, other than Tier 1 rates, for any or all classes of water users in accordance with the procedures specified in Water Code Section 374.

        1. The District will provide notice of the change to customers and the date the change will take effect.

Section XII. Hardship Waiver

1. Undue and Disproportionate Hardship: If, due to unique circumstances, a specific requirement of this Ordinance would result in undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the person may apply for a waiver to the requirements as provided in this section.

2. Written Finding: The waiver may be granted or conditionally granted only upon a written finding of the existence of facts demonstrating an undue hardship.

a. Application for a Waiver: Application for a waiver must be on a form prescribed by the District and accompanied by a non-refundable processing fee in an amount set by the District.

b. Supporting Documentation: photographs, maps, drawings, and other information, including a written statement of the applicant, must accompany the application.

c. Required Findings for Waiver: Based on the information and supporting documents provided in the application, additional information provided as requested, and water use information for the property as shown by the records of the District, the District's General Manager, in making the waiver determination, will take into consideration the following:

1. That the waiver does not constitute a grant of special privilege inconsistent with the limitations upon other residents and businesses;
2. That because of special circumstances applicable to the property or its use, the strict application of this Ordinance would have a disproportionate impact on the property or use that exceeds the impacts to residents and businesses generally;
3. That the authorizing of such waiver will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the District to effectuate the purpose of this Ordinance and will not be detrimental to the public interest;
4. That the condition or situation of the subject property or the intended use of the property for which the waiver is sought is not common, recurrent or general in nature; and
5. That no person shall be given relief on appeal for hardship unless the customer has installed water saving devices, as determined by the District, and made every reasonable effort to reduce water use.

d. Approval Authority

1. The District's General Manager or his designee(s) must act upon any completed Application for a Waiver no later than ten (10) business days after receipt by the District. The General Manager or his designee(s) may approve, conditionally approve, or deny the waiver.
2. The applicant requesting the waiver must be promptly notified in writing of any action taken. Unless specified otherwise, at the time a waiver is approved, it will apply to the subject property for the duration of the water supply shortage or emergency.

e. Appeals

1. A customer may appeal the denial of a waiver to the District's Commission by written request for a hearing within ten (10) business days after notification to deny the waiver. The request shall state the grounds for appeal.

2. At a public meeting, the Commission shall review the appeal and, at its sole discretion, may affirm, reverse or modify the waiver denial. The decision of the Commission is final.

Section XIII: Penalties and Violations

1. Misdemeanor: Pursuant to Water Code Section 377 and 31029, any violation of this chapter may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty (30) days, or by a fine not exceeding six hundred dollars ($600), or by both.

2. Civil Penalties: Civil penalties for failure to comply with any provisions of the Ordinance are as follows:

   a. First Instance of Non-Compliance: The District will issue a written warning and deliver a copy of the Ordinance by mail or door hanger.
   b. Second Instance of Non-Compliance: A second violation within the preceding twelve (12) calendar months is punishable by a fine not to exceed one hundred dollars ($100).
   c. Third Instance of Non-Compliance: A third instance of non-compliance with the Ordinance within the preceding twelve (12) calendar months is punishable by a fine not to exceed two hundred and fifty dollars ($250)
   d. Fourth and Subsequent Instances of Non-Compliance: A fourth or any subsequent instance of non-compliance with this Ordinance is punishable by a fine not to exceed five hundred dollars ($500).
      1. Water Flow Restrictor Device. In addition to any fines, the District may install a water flow restrictor device of approximately one gallon per minute capacity for meter services up to one and one-half inch size and comparatively sized restrictors for larger services. If the District installs a water flow restrictor, installation would follow written notice of intent to the customer and would be in place for a minimum of forty-eight (48) hours.
      2. Termination of Service: In addition to any fines and the installation of a water flow restrictor, the District may disconnect and/or terminate a customer's water service, pursuant to Water Code Section 356.

3. Costs for Water Flow Restrictors and Service Disconnection: A person or entity in non-compliance with this Ordinance is responsible for payment of the District's charges for installing and/or removing any flow-restricting device and for disconnecting and/or reconnecting service per the District's schedule of charges then in effect. The charge for installing and/or removing any flow restricting device must be paid to the District before the device is removed. Nonpayment will be subject to the same remedies as nonpayment of basic water rate.

4. Separate Offenses: Each day that a person or entity is non-compliant with the Ordinance is a separate offense.

5. Notice and Hearing.

a. The District will issue a Notice of Violation by mail or personal delivery at least ten (10) days before taking enforcement action. Such notice must describe the violation and the date by which corrective action must be taken. A customer may appeal the Notice of Violation by filing a written notice of appeal with the District no later than the close of business on the day before the date scheduled for enforcement action. Any Notice of Violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled, and the District will mail written notice of the hearing date to the customer at least ten (10) days before the date of the hearing.

b. Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the District may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violations and the current declared water Level condition.

Section XIV: Severability

If any section, subsection, sentence, clause or phrase in this Ordinance is for any reason held invalid, the validity of the remainder of the Ordinance will not be affected. The District's Board of Directors hereby declares it would have passed this Ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses, or phrases thereof is declared invalid.

NOW, THEREFORE, BE IT RESOLVED, the Board of Directors of Laguna Beach County Water District, does hereby resolve and order as follows:

1. That Ordinance 100: Water Use Efficiency & Water Supply Shortage for Laguna Beach County Water District as submitted be and hereby is approved.

ADOPTED, SIGNED, AND APPROVED this 16th day of June, 2009.

President

ATTEST:

Secretary

CERTIFICATION

I, Renae M. Hinchey, Secretary of the Laguna Beach County Water District, of Orange County, California, do hereby certify that the foregoing Ordinance No. 100 was duly adopted at a regular meeting of the Board of Directors of said District, held on the 16th day of June, 2009, by the following vote of Members of the Board:

AYES:	Directors: -	Egly, Boyd, Iseman, Pearson, Rollinger
NOES:	Directors: -	None
ABSENT:	Directors: -	None

And I further certify that Jane Egly as President, and Renae M. Hinchey, as Secretary, signed and approved said Ordinance on the 16th day of June, 2009.

Renae M. Hinchey

Secretary, Laguna Beach County Water District

(District Seal)

STATE of CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Renae M. Hinchey, Secretary of the Laguna Beach County Water District of Orange County, California, do hereby certify that the foregoing is a full, true and clear copy of Ordinance No. 100 passed and adopted by the Board of Directors of said District at a regular meeting hereof held on June 16, 2009. In witness whereof, I have hereunto set by hand and affixed the official seal of said district this 16th day of June, 2009.

(District Seal)

Renae M. Hinchey

Secretary, Laguna Beach County Water District

RESOLUTION NO. 797

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LAGUNA BEACH COUNTY WATER DISTRICT OF ORANGE COUNTY, CALIFORNIA CALLING FOR ACTIVATION OF THE DISTRICT'S "LEVEL 1 - WATER SUPPLY SHORTAGE ALERT (WATER ALERT)" PURSUANT TO DISTRICT ORDINANCE 100

WHEREAS, Article 10, Section 2 of the California Constitution declares that waters of the State of California are to be put to beneficial use, and that waste, unreasonable use, or unreasonable method of use of water be prevented, and that water be conserved for the public welfare; and

WHEREAS, the State of California is experiencing record dry year conditions, with 2014 projected to become the driest year on record; and

WHEREAS, now in its third consecutive year of a drought, annual precipitation levels in the State of California are inadequate to fill key reservoirs throughout the State; and

WHEREAS, the Colorado River Basin drought has stretched into a 14th year of drought, continuing to negatively impact storage levels; and

WHEREAS, the Laguna Beach County Water District depends on imported water from Northern California and the Colorado River; and

WHEREAS, conservation of current water supplies and minimization of the effects of water supply shortages that are the result of drought are essential to the public health, safety, and welfare; and

WHEREAS, on January 17, 2014, the Governor declared a State of Emergency in California due to the current drought conditions and called for statewide voluntary twenty percent (20%) conservation of water and requested that local agencies implement water shortage contingency plans; and

WHEREAS, on March 27, 2014, the Laguna Beach County Water District adopted Resolution 791 encouraging residents and businesses to take the necessary actions to reduce their water usage through enhanced water use efficiency measures in an effort to extend stored water supplies and prepare for a prolonged drought; and

WHEREAS, on April 25, 2014, the Governor issued an Executive Order to Redouble State Drought Actions, and called on all Californians to redouble their efforts to conserve water, and directed the State Water Resources Control Board to adopt emergency regulations pursuant to Water Code section 1058.5 to ensure that urban water suppliers implement drought response plans to limit outdoor irrigation and other wasteful water practices; and

WHEREAS, on July 2, 2014, the State Water Resources Control Board adopted Resolution 2014-0031, adopting regulations requiring mandatory actions ("Emergency Drought Regulations," now codified as Title 23, Regulations 863, 864, and 865), with key parts of the Emergency Drought Regulations being:

Regulation 864 applies to all water users by prohibiting:

1) The application of potable water to any driveway or sidewalk;

2) Use of potable water to water outdoor landscapes in a manner that causes runoff to adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots or structures;

3) Use of a hose that dispenses potable water to wash a motor vehicle, unless the hose is fitted with a shut-off nozzle; and

4) Use of potable water in a fountain or decorative water feature, unless the water is recirculated. Recycled water is not mandated, but encouraged for fountain use.

Regulation 865 requires in pertinent part that urban water suppliers, which means those that have more than 3,000 water connections or that supply more than 3,000 acre-feet of water annually such as the Laguna Beach County Water District, do either of the following:

1) Implement all requirements and actions of the stage of its water shortage contingency plan that imposes mandatory restrictions on outdoor irrigation of ornamental landscapes or turf with potable water their water shortage contingency plans at a level that triggers mandatory restrictions on outdoor water use; or

2) Submit a request to the Executive Director of the State Water Resources Control Board for approval of an alternate plan that includes allocation-based rate structures, with the Executive Director having discretion to approve such an alternate plan upon determining that the rate structure, in conjunction with other measures, achieves a level of conservation that would be superior to that achieved by implementing limitations on outdoor irrigation of ornamental landscapes or turf with potable water by the persons it serves to no more than two days per week.

WHEREAS, on July 28, 2014, the State of California through the Office of Administrative Law approved the Emergency Drought Regulations pursuant to sections 11346.1 and 11349.6 of the California Government Code, with these regulations effective on July 28, 2014 and set to expire on April 25, 2015; and

WHEREAS, the Laguna Beach County Water District adopted Ordinance No. 100 on June 16, 2009, Establishing a Water Use Efficiency & Water Supply Shortage Program for Users of Potable Water Provided by the District, otherwise known as being the Laguna Beach County Water District's Water Shortage Contingency Plan; and

WHEREAS, despite the ongoing and commendable conservation efforts of the residents and businesses within the Laguna Beach County Water District, the Laguna Beach County Water District hereby determines that additional reduction in consumer demand is necessary pursuant to the Emergency Drought Regulations, thereby triggering the need for immediate action for implementing the appropriate stage of the Water Shortage Contingency Plan, with the Laguna Beach County Water District's intention being for it and the residents and businesses to be compliant with the Emergency Drought Regulations and to further help ensure a reliable and adequate water supply is available.

NOW, THEREFORE BE IT RESOLVED, that the Laguna Beach County Water District finds pursuant to the State's Emergency Drought Regulations that Ordinance 100, Section VIII, a Level 1 - Water Supply Shortage Alert (Water Alert)("Level 1 Water Alert") exists and immediate implementation of the Level 1 Water Alert is needed, which provides for the following measures in addition to existing conservation efforts and measures as set forth in the Water Shortage Contingency Plan:

1) Limits on Watering Days. Watering lawns, landscaping and other vegetated areas is limited to no more than three (3) days per week.

2) Timeframe to Fix Leaks, Breaks or Malfunctions in water users' pipelines, fixtures, or facilities. Loss or escape of water through breaks, leaks or other malfunctions in the water users' plumbing, distribution or irrigation system must be fixed in no more than forty-eight (48) hours following notification from the District - unless other arrangements are made with the District or the system is shut off while waiting for repairs. The District, at its sole discretion, may temporarily shut-off service if unable to contact the account holder on record.

ADOPTED, SIGNED, AND APPROVED this 7th day of August, 2014.

Kelly H Boyd
President

ATTEST:

Rose M. Hickey
Secretary

CERTIFICATION

I, Renae M. Hinchey, Secretary of the Laguna Beach County Water District, of Orange County, California, do hereby certify that the foregoing Resolution No. 797 was duly adopted at a regular meeting of the Board of Directors of said District, held on the 7th day of August, 2014, by the following vote of Members of the Board:

AYES:	Directors: - Boyd, Whalen, Pearson
NOES:	Directors: - None
ABSENT:	Directors: - Dicterow, Iseman

And I further certify that Kelly H. Boyd as President, and Renae M. Hinchey, as Secretary, signed and approved said Resolution on the 7th day of August, 2014.

Renae M. Hinchey

Secretary, Laguna Beach County Water District

(District Seal)

STATE of CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Renae M. Hinchey, Secretary of the Laguna Beach County Water District of Orange County, California, do hereby certify that the foregoing is a full, true and clear copy of Resolution No. 797 passed and adopted by the Board of Directors of said District at a regular meeting hereof held on August 7, 2014. In witness whereof, I have hereunto set by hand and affixed the official seal of said district this 7th day of August, 2014.

Renae M. Hinchey

Secretary, Laguna Beach County Water District

(District Seal)

Appendix I

Public Participation and Plan Adoption

LAGUNA BEACH COUNTY WATER DISTRICT

INCORPORATED 1925

April 9, 2021

John Pietig, City Manager
City of Laguna Beach
505 Forest Avenue
Laguna Beach, CA 92651

RE: Laguna Beach County Water District 2020 Urban Water Management Plan and Water Shortage Contingency Plan Preparation

Dear John:

As required by the Urban Water Management Planning Act of the California Water Code and the Water Conservation Act of 2009, commonly referred to as SBX7-7, this letter serves as formal notification that the Laguna Beach County Water District (District) is currently updating its Urban Water Management Plan (UWMP). The Act specifically requires urban water suppliers providing water to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to update their UWMP every five years. UWMP's are prepared by California's urban water suppliers to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands.

Water Code Section 10621(b) requires an urban water supplier updating its UWMP to notify cities and counties within its service area of the update at least sixty (60) days prior to holding its public hearing. The District is also adopting its Water Shortage Contingency Plan as part of the 2020 UWMP and is considering an Addendum to its 2015 UWMP to demonstrate consistency with the Delta Plan Policy to Reduce Reliance on the Delta Through Improved Regional Self-Reliance (California Code Reg., title 23, § 5003).

A public hearing on the District's 2020 UWMP, WSCP, and the 2015 UWMP Addendum is scheduled for June 17, 2021 at 5:00 pm. Copies of each will be available for review beginning May 19, 2021 on the District's website (LBCWD.com) and at our main office located at 306 Third Street, Laguna Beach. The District invites you to submit comments regarding its 2020 UWMP update, Water Shortage Contingency Plan, and 2015 UWMP Addendum.

The deadline for adopting and submitting the UWMP and WSCP to the California Department of Water Resources is July 1, 2021. A final copy of the UWMP will be made available within 30 days of final adoption by the District's Board of Directors. Please contact Christopher Regan, assistant general manager, at (949) 494-1041 or cregan@lbcwd.org if you have questions.

Sincerely,

Keith Van Der Maaten
General Manager

RESOLUTION 864

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LAGUNA BEACH COUNTY WATER DISTRICT OF ORANGE COUNTY, CALIFORNIA, ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Urban Water Management Planning Act (Wat. Code §10610, et seq. (the Act)), requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually prepare and adopt, in accordance with prescribed requirements, an Urban Water Management Plan (UWMP) every five years; and

WHEREAS, the Act specifies the requirements and procedures for adopting such UWMPs; and

WHEREAS, the Act generally requires that said Plan be updated and adopted at least once every five years on or before July 1, in years ending in six and one; and

WHEREAS, the Laguna Beach County Water District (District) meets the definition of an urban water supplier for purposes of the Act; and

WHEREAS, the 2020 UWMP for the District has been prepared in accordance with the requirements of the Act, found at Water Code §10642; and

WHEREAS, in accordance with applicable law, including Water Code §10642, and Government Code §6066, a Notice of a Public Hearing regarding the District's 2020 UWMP was published within the jurisdiction of the District on May 21 and 28, 2021, and June 4, 2021; and

WHEREAS, in accordance with applicable law, including but not limited to Water Code section 10642, a public hearing was held on June 17 at 5:00 pm, at the District's headquarters Board Room at 306 Third Street, Laguna Beach to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the 2020 UWMP and issues related thereto; and

WHEREAS, pursuant to said public hearing on the District's 2020 UWMP, the District among other things, encouraged the active involvement of diverse social, cultural, and economic members of the community within the District's service area with regard to the 2020

UWMP and encouraged community input regarding the District's 2020 UWMP; and

WHEREAS, the District desires to adopt the 2020 UWMP prior to July 1, 2021 in order to comply with the Act; and

WHEREAS, the Board of Directors of the District has duly reviewed, discussed, and considered such 2020 UWMP and has determined the 2020 UWMP to be consistent with the Act and to be an accurate representation of the water resource plan for the District.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Laguna Beach County Water District that, on June 17, 2021, this District hereby adopts this 2020 Urban Water Management Plan for submittal to the state of California.

ADOPTED, SIGNED, AND APPROVED this 17th day of June 2021.

President

ATTEST:

Secretary

CERTIFICATION

I, Keith Van Der Maaten, Secretary of the LAGUNA BEACH COUNTY WATER DISTRICT, of Orange County, California, do hereby certify that the foregoing Resolution No. 864 was duly adopted at a regular meeting of the Board of Directors of said District, held on the 17th day of June, 2021, by the following vote of members of the Board of Directors:

AYES: WHALEN, KEMPF, BLAKE, ISEMAN

NOES: NONE

ABSENT: WEISS

And I further certify that Robert Whalen, as President, and Keith Van Der Maaten, as Secretary, signed and approved said Resolution on the 17th day of June, 2021.

Secretary
LAGUNA BEACH COUNTY WATER DISTRICT

(District Seal)

STATE of CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, KEITH VAN DER MAATEN, Secretary of the LAGUNA BEACH COUNTY WATER DISTRICT of Orange County, California, do hereby certify that the foregoing is a full, true and clear copy of Resolution No. 864 passed and adopted by the Board of Directors of said District at a regular meeting hereof held on June 17, 2021.

IN WITNESS WHEREOF, I have hereunto set by hand and affixed the official seal of said district this 17th day of June 2021.

(District Seal)

Secretary of said District

RESOLUTION NO. 865

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LAGUNA BEACH COUNTY WATER DISTRICT OF ORANGE COUNTY, CALIFORNIA, ADOPTING A WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, The California Urban Water Management Planning Act, (Wat. Code §10610, et seq. (the Act)), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000-acre feet of water annually, prepare and adopt, in accordance with prescribed requirements, a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan (UWMP); and

WHEREAS, the Act specifies the requirements and procedures for adopting such WSCPs; and

WHEREAS, pursuant to recent amendments to the Act, urban water suppliers are required to adopt and electronically submit their WSCPs to the California Department of Water Resources (DWR) by July 1, 2021; and

WHEREAS, pursuant to the Act, "urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually; and

WHEREAS, the Laguna Beach County Water District (District) meets the definition of an urban water supplier for purposes of the Act and is required to prepare and adopt a WSCP as part of its 2020 UWMP; and

WHEREAS, the District has prepared a WSCP in accordance with the Act, and in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its WSCP; and

WHEREAS, in accordance with the Act, the District has prepared its WSCP with its own staff, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its WSCP, and has also utilized DWR's Urban Water Management Plan Guidebook 2020, including its related appendices, in preparing its WSCP; and

WHEREAS, in accordance with applicable law, including Water Code §10642, and Government Code §6066, a Notice of a Public Hearing regarding the District's WSCP was published within the jurisdiction of the District on May 21, 2021, May 28, 2021, and June 4, 2021; and

WHEREAS, in accordance with applicable law, including but not limited to Water Code §10642, a public hearing was held on June 17 at 5:00 pm, at the District's headquarters Board Room at 306 Third Street, Laguna Beach to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the WSCP and issues related thereto; and

WHEREAS, pursuant to said public hearing on the District's WSCP, the District, among other things, encouraged the active involvement of diverse social, cultural, and economic members of the community within the District's service area with regard to the WSCP, and encouraged community input regarding the District's WSCP; and

WHEREAS, the District's Board of Directors has reviewed and considered the purposes and requirements of the Act, the contents of the WSCP, and the documentation contained in the administrative record in support of the WSCP, and has determined that the factual analyses and conclusions set forth in the WSCP are legally sufficient; and

WHEREAS, the District's Board of Directors desires to adopt the WSCP and to incorporate it as part of its 2020 UWMP prior to July 1, 2021 in order to comply with the Act.

NOW THEREFORE BE IT RESOLVED, the Board of Directors of the Laguna Beach County Water District hereby resolves as follows:

1. The WSCP is hereby adopted as amended by changes incorporated by the Board of Directors as a result of input received (if any) at the public hearing and ordered filed with the Secretary of the Board of Directors and shall be incorporated into the District's 2020 UWMP;

2. The General Manager is hereby authorized and directed to include a copy of this Resolution in the District's 2020 UWMP;

3. The General Manager is hereby authorized and directed, in accordance with Water Code §10621(d) and §10644(a)(1)-(2), to electronically submit a copy of the WSCP, as part of its 2020 UWMP, to DWR no later than July 1, 2021;

4. The General Manager is hereby authorized and directed, in accordance with Water Code §10644(a), to submit a copy of the WSCP, as part of its 2020 UWMP, to the California State Library, and to any city or county within which the District provides water supplies no later than thirty (30) days after this adoption date;

5. The General Manager is hereby authorized and directed, in accordance with Water Code §10645, to make the WSCP available for public review at the District's offices during normal business hours and on its website at www.lbcwd.com no later than thirty (30) days after filing a copy of the WSCP, as part of its 2020 UWMP, with DWR;

6. The General Manager is hereby authorized and directed to implement the WSCP in accordance with the Act and to provide recommendations to the Board of Directors regarding the necessary budgets, procedures, rules, regulations, or further actions to carry out the effective and equitable implementation of the WSCP.

ADOPTED, SIGNED, AND APPROVED this 17th day of June, 2021.

President

ATTEST

Secretary

CERTIFICATION

I, Keith Van Der Maaten, Secretary of the Laguna Beach County Water District, of Orange County, California, do hereby certify that the foregoing Resolution No. 865 was duly adopted at a regular meeting of the Board of Directors of said District, held on the 17th day of June, 2021, by the following vote of Members of the Board:

AYES:	WHALEN, KEMPF, BLAKE, ISEMAN
NOES:	NONE
ABSENT:	WEISS

And I further certify that Robert Whalen as President, and Keith Van Der Maaten, as Secretary, signed and approved said Resolution on the 17th day of June, 2021.

Secretary, Laguna Beach County Water District

(District Seal)

STATE OF CALIFORNIA)

) ss.

COUNTY OF ORANGE)

I, Keith Van Der Maaten, Secretary of the Laguna Beach County Water District of Orange County, California, do hereby certify that the foregoing is a full, true and clear copy of Resolution No. 865 passed and adopted by the Board of Directors of said District at a regular meeting hereof held on June 17, 2021. In witness whereof, I have hereunto set by hand and affixed the official seal of said district this June 17, 2021.

(District Seal)

Secretary, Laguna Beach County Water District

RESOLUTION NO. 866

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LAGUNA BEACH COUNTY WATER DISTRICT OF ORANGE COUNTY, CALIFORNIA, ADOPTING AN ADDENDUM TO THE 2015 URBAN WATER MANAGEMENT PLAN

WHEREAS, The California Urban Water Management Planning Act, (Wat. Code §10610, et seq. (the Act)), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (Plan); and

WHEREAS, the Laguna Beach County Water District (District) meets the definition of an urban retail water supplier for purposes of the Act; and

WHEREAS, the Act generally requires that said Plan be updated and adopted at least once every five years on or before July 1, in years ending in six and one; and

WHEREAS, pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009 (Wat. Code § 85000, et seq.), the Delta Plan, and Water Code section 85021, which declares that the State's policy is to "reduce reliance on the Delta in meeting California's future water needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency," urban water suppliers are encouraged by the California Department of Resources (DWR) and the Delta Stewardship Council (DSC) to consider adopting an Addendum to their 2015 Plans to demonstrate consistency with the Delta Plan Policy WR P1 to Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (Cal. Code Regs. tit. 23, § 5003); and

WHEREAS, the District has prepared an Addendum to its 2015 Plan in accordance with Delta Plan Policy WR P1, and in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its Addendum; and

WHEREAS, in accordance with the Act and Delta Plan Policy WR P1, the District has prepared its Addendum to the 2015 Plan with its own staff, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its Addendum to its 2015 Plan, and has also utilized DWR's Urban Water Management Plan Guidebook

2020, including its related appendices, in preparing its Addendum to the 2015 Plan; and

WHEREAS, in accordance with applicable law, including Water Code section 10642, and Government Code section 6066, a Notice of a Public Hearing regarding the District's Addendum to the 2015 Plan was published within the jurisdiction of the District on May 21, and 28, 2021 and June 4, 2021; and

WHEREAS, in accordance with applicable law, including but not limited to Water Code section 10642, a public hearing was held on June 17 at 5:00 pm, at the District's headquarters Board Room at 306 Third Street, Laguna Beach to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the Addendum to the 2015 Plan and issues related thereto; and

WHEREAS, pursuant to said public hearing on the District's Addendum to the 2015 Plan, the District among other things, encouraged the active involvement of diverse social, cultural, and economic members of the community within the District's service area with regard to the Addendum to the 2015 Plan and encouraged community input regarding the District's Addendum to the 2015 Plan; and

WHEREAS, the District has reviewed and considered the purposes and requirements of the Act and Delta Plan Policy WR P1, the contents of the Addendum to the 2015 Plan, and the documentation contained in the administrative record in support of the Addendum to the 2015 Plan, and has determined that the factual analyses and conclusions set forth in the Addendum to the 2015 Plan are legally sufficient; and

WHEREAS, the District desires to adopt the Addendum to the 2015 Plan prior to July 1, 2021 in order to comply with the Act and Delta Plan Policy WR P1.

NOW THEREFORE BE IT RESOLVED, the Board of Directors of the Laguna Beach County Water District hereby resolves as follows:

1. The Addendum to the District's 2015 Urban Water Management Plan to demonstrate consistency with the Delta Plan Policy to Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance is hereby adopted as amended by changes incorporated by the Board of Directors as a result of input received (if any) at the public hearing and ordered filed with the Secretary of the Board of Directors;

2. The General Manager is hereby authorized and directed to include a copy of this Resolution in the District's 2015 Plan Addendum;

3. The General Manager is hereby authorized and directed, in accordance with Water Code sections 10621(d) and 10644(a)(1)-(2), to electronically submit a copy of the Addendum to the 2015 Plan to DWR no later than July 1, 2021;

4. The General Manager is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit a copy of the Addendum to the 2015 Plan to the California State Library, and to any city or county within which the District provides water supplies no later than thirty (30) days after this adoption date;

5. The General Manager is hereby authorized and directed, in accordance with Water Code section 10645, to make the Addendum to the 2015 Plan available for public review at the District's offices during normal business hours and on its website at www.lbcwd.org no later than thirty (30) days after filing a copy of the Addendum to the 2015 Plan with DWR.

ADOPTED, SIGNED, AND APPROVED this 17th day of June 2021.

President

ATTEST

Secretary

CERTIFICATION

I, Keith Van Der Maaten, Secretary of the LAGUNA BEACH COUNTY WATER DISTRICT, of Orange County, California, do hereby certify that the foregoing Resolution No. 866 was duly adopted at a regular meeting of the Board of Directors of said District, held on the 17th day of June, 2021, by the following vote of members of the Board of Directors:

AYES: WHALEN, KEMPF, BLAKE, ISEMAN

NOES: NONE

ABSENT: WEISS

And I further certify that Robert Whalen, as President, and Keith Van Der Maaten, as Secretary, signed and approved said Resolution on the 17th day of June, 2021.

Secretary, Laguna Beach County Water District

(District Seal)

STATE of CALIFORNIA)

) ss.

COUNTY OF ORANGE)

I, KEITH VAN DER MAATEN, Secretary of the LAGUNA BEACH COUNTY WATER DISTRICT of Orange County, California, do hereby certify that the foregoing is a full, true and clear copy of Resolution No. 866 passed and adopted by the Board of Directors of said District at a regular meeting hereof held on June 17, 2021.

IN WITNESS WHEREOF, I have hereunto set by hand and affixed the official seal of said district this 17th day of June 2021.

(District Seal)

Secretary of said District