

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX A

DWR STANDARDIZED TABLES

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 *
<i>Add additional rows as needed</i>			
CA1910021	Liberty Utilities - Compton	6,978	2,792
CA1910161	Liberty Utilities - Lynwood	4,480	1,792
CA1910211	Liberty Utilities - Bellflower/Norwalk	16,599	6,640
TOTAL		28,057	11,224

*** Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES: Source for "Number of Municipal Connections 2020":
<https://sdwis.waterboards.ca.gov/PDWW/>

Submittal Table 2-2: Plan Identification

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance <i>if applicable</i> (select from drop down list)
<input checked="" type="checkbox"/>	Individual UWMP		
	<input type="checkbox"/>	Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/>	Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)		

NOTES:

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
<input type="checkbox"/>	Supplier is a wholesaler
<input checked="" type="checkbox"/>	Supplier is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables are in calendar years
<input type="checkbox"/>	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
01/01	
Units of measure used in UWMP * (select from drop down)	
Unit	AF
<i>* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>	
NOTES:	

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

Central Basin Municipal Water District

NOTES:

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

Population Served	2020	2025	2030	2035	2040	2045(<i>opt</i>)
	132,691	133,407	134,111	134,819	135,530	136,245

NOTES: The 2020 population and the population projected through 2045 were obtained from data in SCAG's 2020-2045 Regional Transportation Plan (See Section 3.4.1 and Section 5.4.1).

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable¹ Water - Actual

Use Type	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 ²
Add additional rows as needed			
Single Family		Drinking Water	7,211
Multi-Family		Drinking Water	1,213
Commercial		Drinking Water	1,080
Industrial		Drinking Water	77
Institutional/Governmental	Public Authority	Drinking Water	461
Losses		Drinking Water	915
Other	Fire Services and Temporary Meter Services	Drinking Water	15
TOTAL			10,972

¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.

² Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES: Recycled water demands are provided in Table 4-3 and Table 6-4.

Submittal Table 4-2 Retail: Use for Potable and Non-Potable¹ Water - Projected

Use Type	Additional Description (as needed)	Projected Water Use ² <i>Report To the Extent that Records are Available</i>				
		2025	2030	2035	2040	2045 (opt)
<p>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</p>						
Add additional rows as needed						
Single Family		7,366	7,405	7,444	7,483	7,523
Multi-Family		1,239	1,246	1,252	1,259	1,265
Commercial		1,103	1,109	1,115	1,121	1,127
Industrial		79	79	79	80	80
Institutional/Governmental		471	473	476	478	481
Losses		935	939	944	949	954
Other		15	15	15	16	16
TOTAL		11,208	11,266	11,325	11,386	11,446

¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)

	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable <i>From Tables 4-1R and 4-2 R</i>	10,972	11,208	11,266	11,325	11,386	11,446
Recycled Water Demand ¹ <i>From Table 6-4</i>	252	260	260	260	260	260
Optional Deduction of Recycled Water Put Into Long-Term Storage ²						
TOTAL WATER USE	11,224	11,468	11,526	11,585	11,646	11,706

¹ Recycled water demand fields will be blank until Table 6-4 is complete

² Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier *may* deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.

NOTES:

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss ^{1,2}
01/2016	291
01/2017	308
01/2018	330
01/2019	184
01/2020	915

¹ Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.

² Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES: The "Volume of Water Loss" quantities for CY 2016 through CY 2019 were obtained from the annual AWWA Water Loss Audits (and based on the combination of apparent losses and real losses). The AWWA Water Loss Audits were reported on a calendar year basis. The AWWA Water Loss Audit for calendar year 2020 will be prepared by October 2021. The "Volume of Water Loss" quantity for CY 2020 was estimated based on metered water production less metered water deliveries to customers.

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) <i>Drop down list (y/n)</i>	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Section 4.2.6 and Chapter 8
Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i>	Yes

NOTES:

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	1998	2007	99.8	142
5 Year	2003	2007	99.0	

**All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*

NOTES:

Submittal Table 5-2: 2020 Compliance
From SB X7-7 2020 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* <i>(Adjusted if applicable)</i>		
74	0	74	142	Y

**All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)*

NOTES:

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 <i>Drop Down List</i> May use each category multiple times	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
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Add additional rows as needed

Alluvial Basin	Central Basin	3,970	5,038	6,841	7,173	5,782
TOTAL		3,970	5,038	6,841	7,173	5,782

*** Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

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

<input type="checkbox"/>	There is no wastewater collection system. The supplier will not complete the table below.
	Percentage of 2020 service area covered by wastewater collection system <i>(optional)</i>
	Percentage of 2020 service area population covered by wastewater collection system <i>(optional)</i>

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	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? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
Los Angeles County Sanitation Districts	Estimated	8,900	Los Angeles County Sanitation Districts	Los Coyotes Water Reclamation Plant and Joint Water Pollution Control Plant	No	No
Total Wastewater Collected from Service Area in 2020:		8,900				

* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

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.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional) ²	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area? <i>Drop down list</i>	Treatment Level <i>Drop down list</i>	2020 volumes ¹				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Total							0	0	0	0	0

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.
² If the Wastewater Discharge ID Number is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at <https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility>

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: Los Angeles County Sanitation District

Name of Supplier Operating the Recycled Water Distribution System: Central Basin Municipal Water District

Supplemental Water Added in 2020 (volume) *Include units*: 0

Source of 2020 Supplemental Water: Not Applicable

Beneficial Use Type <i>Insert additional rows if needed.</i>	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity) <i>Include volume units¹</i>	General Description of 2020 Uses	Level of Treatment <i>Drop down list</i>	2020 ¹	2025 ¹	2030 ¹	2035 ¹	2040 ¹	2045 ¹ (opt)
Agricultural irrigation										
Landscape irrigation (exc golf courses)	Schools, Parks, City Landscape	249	Schools, Parks, City Landscape	Tertiary	241	249	249	249	249	249
Golf course irrigation		11		Tertiary	11	11	11	11	11	11
Commercial use										
Industrial use										
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment										
Wetlands or wildlife habitat										
Groundwater recharge (IPR)										
Reservoir water augmentation (IPR)										
Direct potable reuse										
Other (Description Required)										
Total:					252	260	260	260	260	260
2020 Internal Reuse										

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES:

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. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.

Beneficial Use Type	2015 Projection for 2020 ¹	2020 Actual Use ¹
<i>Insert additional rows as needed.</i>		
Agricultural irrigation		
Landscape irrigation (exc golf courses)	215	241
Golf course irrigation	9	11
Commercial use		
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)		
Total	224	252

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTE:

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

<input type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.
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Section 6.2.5	Provide page location of narrative in UWMP
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Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
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Add additional rows as needed

Recycled Water System Expansion	Potential system expansion routes and development of phased CIP within CBMWD service area pursuant to Central Basin Municipal Water District's 2012 Recycled Water Master Plan	Ongoing	20

Total			20
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**Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

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.

Section 6.2.8 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 <i>Drop Down List</i>	Expected Increase in Water Supply to Supplier* <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Supplier Name</i>				

Add additional rows as needed

Construction of Well 28D	No		Completion of new Central Basin groundwater well	2022	All Year Types	3,200 AFY

***Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

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				
Groundwater (not desalinated)	Central Basin	5,782	Drinking Water	
Purchased or Imported Water	Central Basin Municipal Water District	5,190	Drinking Water	
Recycled Water		252	Recycled Water	
Total		11,224		0

**Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

Submittal Table 6-9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
		2025		2030		2035		2040		2045 (opt)	
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		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											
Groundwater (not desalinated)	Central Basin	6,000		6,250		6,500		6,750		7,000	
Purchased or Imported Water	Central Basin Municipal Water District	5,208		5,016		4,825		4,636		4,446	
Recycled Water	Central Basin Municipal Water District	260		260		260		260		260	
Total		11,468	0	11,526	0	11,585	0	11,646	0	11,706	0
<p>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</p> <p>NOTES</p>											

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)

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	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	% of Average Supply
Average Year	2020	11,224	100%
Single-Dry Year	2017	10,140	90.3%
Consecutive Dry Years 1st Year	2011	11,837	105.5%
Consecutive Dry Years 2nd Year	2012	11,828	105.4%
Consecutive Dry Years 3rd Year	2013	11,155	99.4%
Consecutive Dry Years 4th Year	2014	9,787	87.2%
Consecutive Dry Years 5th Year	2015	9,605	85.6%

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.

***Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)	11,468	11,526	11,585	11,646	11,706
Demand totals (autofill from Table 4-3)	11,468	11,526	11,585	11,646	11,706
Difference	0	0	0	0	0

NOTES:

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (Opt)
Supply totals*	10,800	10,857	10,915	10,972	11,030
Demand totals*	10,800	10,857	10,915	10,972	11,030
Difference	0	0	0	0	0

**Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison

		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	12,608	12,674	12,741	12,808	12,876
	Demand totals	12,608	12,674	12,741	12,808	12,876
	Difference	0	0	0	0	0
Second year	Supply totals	12,598	12,664	12,731	12,798	12,866
	Demand totals	12,598	12,664	12,731	12,798	12,866
	Difference	0	0	0	0	0
Third year	Supply totals	11,881	11,944	12,007	12,070	12,134
	Demand totals	11,881	11,944	12,007	12,070	12,134
	Difference	0	0	0	0	0
Fourth year	Supply totals	10,424	10,479	10,534	10,590	10,646
	Demand totals	10,424	10,479	10,534	10,590	10,646
	Difference	0	0	0	0	0
Fifth year	Supply totals	10,230	10,284	10,338	10,393	10,448
	Demand totals	10,230	10,284	10,338	10,393	10,448
	Difference	0	0	0	0	0
Sixth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

***Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.**

NOTES:

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

2021	Total
Total Water Use	11,991
Total Supplies	11,837
Surplus/Shortfall w/o WSCP Action	(154)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	154
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	1%

2022	Total
Total Water Use	12,136
Total Supplies	11,828
Surplus/Shortfall w/o WSCP Action	(308)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	308
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	3%

2023	Total
Total Water Use	11,590
Total Supplies	11,155
Surplus/Shortfall w/o WSCP Action	(435)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	435
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	4%

2024	Total
Total Water Use	10,297
Total Supplies	9,787
Surplus/Shortfall w/o WSCP Action	(510)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	510
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	5%

2025	Total
Total Water Use	10,230
Total Supplies	9,605
Surplus/Shortfall w/o WSCP Action	(625)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	625
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	6%

**Submittal Table 8-1
Water Shortage Contingency Plan Levels**

Shortage Level	Percent Shortage Range	Shortage Response Actions <i>(Narrative description)</i>
1	Up to 10%	Outdoor irrigation is restricted to no more than three (3) days per week, no more than 10 minutes per day per station, with no watering between 8:00 a.m. and 7:00 p.m. All leaks, breaks, or other malfunction must be repaired within five (5) days of written notification.
2	Up to 20%	In addition to Shortage Level 1; Outdoor irrigation is restricted to no more than two (2) days per week. All leaks, breaks, or other malfunction must be repaired within three (3) days of written notification. All usage in excess of the residential customer's allocation will be charged at the regular Schedule No. 1 quantity rate plus a drought emergency surcharge rate that is calculated from the Tier 1 quantity rate multiplied by a factor of 1.0. All usage for non-residential customers served under Tariff Schedule No. 3 will be charged at the regular Schedule No. 3 quantity rate plus a drought emergency surcharge rate that is calculated as the quantity rate multiplied by a factor of 0.15.
3	Up to 30%	In addition to Shortage Level 2, Liberty Utilities - Apple Valley may add actions if conditions warrant.
4	Up to 40%	In addition to Shortage Level 3; All usage in excess of the residential customer's allocation will be charged at the regular Schedule No. 1 quantity rate plus a drought emergency surcharge rate that is calculated from the Tier 1 quantity rate multiplied by a factor of 1.5. All usage for non-residential customers served under Tariff Schedule No. 3 will be charged at the regular Schedule No. 3 quantity rate plus a drought emergency surcharge rate that is calculated as the quantity rate multiplied by a factor of 0.30.
5	Up to 50%	In addition to Shortage Level 4, Liberty Utilities - Apple Valley may add actions if conditions warrant.
6	>50%	In addition to Shortage Level 5; All usage in excess of residential customer's allocation will be charged at the regular Schedule No.1 quantity rate plus a drought emergency surcharge rate that is calculated from the Tier 1 quantity rate multiplied by a factor of 2.0. All usage for non-residential customers served under Tariff

NOTES:

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only</i> <i>Drop Down List</i>
<i>Add additional rows as needed</i>				
1	Landscape - Limit landscape irrigation to specific days	Collective reduction from all Shortage Level 1 actions is up to 664 AFY	Maximum 23days a week.	Yes
1	Landscape - Limit landscape irrigation to specific times	Collective reduction from all Shortage Level 1 actions is up to 664 AFY	between 8 a.m. or after 7 p.m.	Yes
2	Other	Collective reduction from Shortage Level 1 plus all Shortage Level 2 actions is up to 1,329 AFY	All actions under Shortage Level 1	Yes
2	Implement or Modify Drought Rate Structure or Surcharge	Collective reduction from all Shortage Level 2 actions is up to 1,329 AFY	All users in excess of allocation will be charged regular rate plus surcharge.	Yes
3	Other	Collective reduction from Shortage Level 2 plus all Shortage Level 3 actions is up to 1,993 AFY	All actions under Shortage Level 2	Yes
4	Other	Collective reduction from Shortage Level 3 plus all Shortage Level 4 actions is up to 2,658 AFY	All actions under Shortage Level 3	Yes
4	Implement or Modify Drought Rate Structure or Surcharge	Collective reduction from all Shortage Level 4 actions is up to 2,658 AFY	All users in excess of allocation will be charged regular rate plus surcharge.	Yes
5	Other	Collective reduction from Shortage Level 4 plus all Shortage Level 5 actions is up to 3,322 AFY	All actions under Shortage Level 4	Yes
6	Other	Collective reduction from Shortage Level 5 plus all Shortage Level 6 actions is greater than 3,322 AFY	All actions under Shortage Level 5	Yes
6	Implement or Modify Drought Rate Structure or Surcharge	Collective reduction from all Shortage Level 6 actions is greater than 3,322 AFY	All users in excess of allocation will be charged regular rate plus surcharge.	Yes

NOTES:

Submittal Table 8-3: Supply Augmentation and Other Actions

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>			
1	Transfers	Not applicable (see Notes)	
2	Transfers	Not applicable (see Notes)	
3	Transfers	Not applicable (see Notes)	
4	Transfers	Not applicable (see Notes)	
5	Transfers	Not applicable (see Notes)	
6	Transfers	Not applicable (see Notes)	

NOTES: Liberty Utilities - Park Water will consider increased production from the Central Basin using existing facilities to address increased demands. As noted on Table 8-2, Liberty Utilities - Park Water plans to implement demand reduction measures in the event water supplies from existing sources are not sufficient to meet anticipated demands.

Submittal Table 10-1 Retail: Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
Artesia	Yes	Yes
Bell Gardens	Yes	Yes
Bellflower	Yes	Yes
Compton	Yes	Yes
Lynwood	Yes	Yes
Norwalk	Yes	Yes
Santa Fe Springs	Yes	Yes
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
Los Angeles County	Yes	Yes
NOTES:		

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX B

DEMONSTRATION OF REDUCED IMPORTED WATER RELIANCE

**DEMONSTRATION OF CONSISTENCY WITH THE DELTA PLAN FOR
PARTICIPANTS IN COVERED ACTIONS
(CY 2015 THROUGH CY 2045)
LIBERTY UTILITIES (PARK WATER) CORPS.**

Introduction

Pursuant to the California Department of Water Resources (DWR), an urban water supplier that anticipates participating in or receiving water from a proposed project (or “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 Sacramento-San Joaquin Delta (Delta) should provide information in their 2015 and 2020 Urban Water Management Plans (UWMPs) for use in demonstrating consistency with Delta Plan Policy WR P1, “*Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance*”. In addition, pursuant to California Code of Regulations, Title 23, § 5003:

(c)(1) Water suppliers that have done all of 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).

Liberty Utilities (Park Water) Corps (Liberty Utilities – Park Water) is sub-agency of the Central Basin Municipal Water District, which in turn is a member agency of the Metropolitan Water District of Southern California (MWD). As noted in MWD’s document entitled “*Infeasibility of Accounting Supplies from the Delta Watershed for Metropolitan’s Member Agencies and their Customers*” (which is included in MWD’s Regional 2020 UWMP and is provided as Attachment 1 below), “... 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....”

In addition, MWD’s 2020 Regional UWMP indicates “...in accordance with UMWP requirements, Metropolitan’s member agencies and their customers (many of them, retail agencies) also report demands and supplies for their service areas in their respective UWMPs. The data reported by those agencies are not additive to the regional totals shown in Metropolitan’s UWMP; rather, their reporting represents subtotals of the regional total and should be considered as such for the purposes of determining reduced reliance on the Delta...While the demands that Metropolitan’s member agencies and their customers report in their UWMPs are a good reflection of the demands in their respective service areas, they do not adequately represent each water supplier’s contributions to reduced reliance on the Delta. In order to calculate and report their reliance on water supplies from the Delta watershed, water suppliers that receive water from the Delta through other regional or wholesale water suppliers would need to determine the amount of Delta water that they receive from the regional or wholesale supplier. Two specific pieces of information are needed to accomplish this: first is the quantity of demands on the regional or wholesale water supplier that accurately reflect a supplier’s contributions to reduced reliance on the Delta, and second is the quantity of a supplier’s demands on

the regional or wholesale water supplier that are met by supplies from the Delta watershed...For water suppliers that make investments in regional projects or programs it may be infeasible to quantify their demands on the regional or wholesale water supplier in a way that accurately reflects their individual contributions to reduced reliance on the Delta.” Nonetheless, Liberty Utilities – Park Water has taken proactive measures to help reduce regional reliance on imported water supplies and is discussed in the following sections.

Reduced Reliance Calculation Tables

Pursuant to DWR guidance, Tables C-1 through C-4 were prepared to show the potential reduction of reliance on imported supply for Liberty Utilities – Park Water. Liberty Utilities – Park Water has used these tables to demonstrate its reduced regional reliance on imported water supplies, but not specifically Delta Watershed supplies. For each of the tables, a “Baseline year” was selected. Water demands during subsequent years (from 2015 through 2045 in five-year increments) were compared to water demands during the Baseline year. Table C-1 considers the population and service area water demands, and a demand in gallons per capita per day (GPCD) water use rate was calculated for each of the years following the Baseline year. The calculated reduction in GPCD from the Baseline year was then translated to an estimated amount of water saved as a result of water conservation measures. Table C-2 references the estimated amount of water saved from Table C-1 and shows Liberty Utilities – Park Water’s water demand without water use efficiency in effect.

A method of showing reduced regional reliance on imported water supplies is to show increased regional self-reliance. Table C-3 lists water supply sources that contribute to regional self-reliance, including water use efficiency (from Table C-1 and C-2) and groundwater recharge activities. Regional self-reliance is expressed both in terms of acre feet (AF) and as a percentage.

The calculation of reduced regional reliance on imported water supplies is shown on Table C-4. Table C-4 also shows the percent change in imported water supplies relative to Liberty Utilities – Park Water’s total supply. A negative percent change of imported water supplies indicates Liberty Utilities – Park Water has reduced regional reliance on imported water supplies.

Since the Baseline year, Liberty Utilities – Park Water has decreased its reduced regional reliance on imported water supplies in 2015, 2020, and anticipates doing so through 2045.

Liberty Utilities – Park Water has reduced its reliance on imported water supply in up to three separate categories, as follows:

- The demand in GPCD for the "Baseline year" was compared to the GPCDs in subsequent years (from 2015 through 2045, in five-year increments). The reduced GPCD multiplied by the population in these subsequent years is indicative of the potential reduced regional reliance on imported water supplies and is included in Table C-1.
- The recycled water use from 2015 through 2045, in five-year increments, also demonstrates reduced regional reliance on imported water supplies and included in Table C-1
- To the extent the Water Replenishment District of Southern California (WRD) has, or plans to, use recycled water to replenish the Central Basin, Liberty Utilities – Park Water’s proportional share (up to the total replenishment water obligation) will be included on Table C-1.

These categories of reduced imported water reliance are discussed below. The sum of the increased regional self-reliance and the sum of the reduced regional reliance imported water demand resulting from these categories is reflected on Table C-3 and Table C-4, respectively, and is reflective of Liberty Utilities – Park Water’s overall reduced reliance.

Reduced GPCD

Section 6.2.2 of the 2020 UWMP describes the management of the Central Basin. Liberty Utilities – Park Water purchases groundwater produced from the Central Basin, which is adjudicated and managed by the WRD. In addition, Liberty Utilities – Park Water can purchase treated imported water from Central Basin Municipal Water District which is ultimately provided by the Metropolitan Water District of Southern California.

Chapter 9 of the 2020 UWMP describes the Demand Management Measures which Liberty Utilities – Park Water has implemented to reduce the amount water used by its customers. In addition, Chapter 6 of the 2020 UWMP describes the groundwater basin management measures implemented by WRD. Collectively these actions translate to a reduction in the GPCD usage rate which is described further in Chapter 5 of the 2020 UWMP. These actions directly impact total water demands, and consequently, the quantity of imported water which may be required. Absent the proactive measures taken by Liberty Utilities – Park Water, it is anticipated there may have been a greater demand on imported water.

Pursuant to DWR guidance, reduced reliance on imported water supplies can be demonstrated by first selecting a “Baseline” water demand, represented by total potable water demands during CY 2010. Table C-1 summarizes the “Baseline” water usage by Liberty Utilities – Park Water in CY 2010 (assuming demand reduction efforts had not been implemented); actual water usage in 2015 and 2020; and projected water usage through 2045 in five-year increments. Table C-2 demonstrates that, but for the water conservation efforts implemented by Liberty Utilities – Park Water, there may have been a greater reliance on untreated imported water supplies during the Baseline year as compared to subsequent years. The reduction is considered the reduced imported water reliance.

Liberty Utilities – Park Water’s potable water demand of 10,928 AF during CY 2010, along with the corresponding service area population of approximately 128,439, were used to determine the Baseline GPCD. Subsequently, the actual demands for CY 2015 and CY

2020 were compared to the calculated population to obtain the recent GPCD which includes the water conservation measures which have been implemented (those demand management measures are described in Chapter 9 of the 2020 UWMP). The “Water Supplies Contributing to Regional Self-Reliance” are also provided in Table C-1. The differences between the Baseline GPCD and the 2015 and 2020 GPCDs are effectively considered a demonstration of the reduced regional reliance on imported water supplies with the understanding that any potential increased demand by Liberty Utilities – Park Water resulting from increased population could have been required, absent Liberty Utilities – Park Water’s new water supplies which contribute to self-reliance. A similar methodology is used for the projected potable water demands (2020 UWMP Table 4-3) and populations (2020 UWMP Table 3-1).

Recycled Water Use

Liberty Utilities – Park Water has also constructed infrastructure to deliver recycled water to its customers instead of continuing to use its potable water supplies. The historical recycled water demands for CY 2015 and CY 2020, along with the projected recycled water demands (from Table 4-3 of the 2020 UWMP) are incorporated in Table C-1. These quantities are in addition to the reduced demand resulting from decreased GPCD.

Recycled Water for Groundwater Replenishment

MWD is currently partnering with LACSD to investigate the viability of providing up to 150 million gallons per day (MGD) (approximately 168,000 AFY) of advanced treated wastewater from LACSD’s Joint Water Pollution Control Plant located in Carson, California (Carson Plant)¹. The “Regional Recycled Water Program” (RRWP) would deliver purified water from the Carson Plant in up to 60 miles of transmission pipelines to groundwater basins within MWD’s service area, including the Central, West Coast, Main San Gabriel, and Orange County Basins. The purified water would be used for groundwater recharge, groundwater storage, and industrial facilities. In addition, purified

water could potentially be treated further at two of MWD's existing water treatment plants for direct potable reuse. The locations of the proposed pipeline alignments are provided in the figure below.

Regional Recycled Water Program Location



Source: <http://www.mwdh2o.com/DocSvcsPubs/rrwp/index.html>

MWD began construction of a \$17 million small-scale demonstration plant (0.5 MGD) in late 2017 which was completed in October 2019. The results of the demonstration plant will allow MWD and others to determine if expansion to a full-scale plant is beneficial. The full-scale plant would take approximately 11 years to construct once approved (with a cost of over \$3 billion).

Pursuant to MWD's "Regional Recycled Water Program Conceptual Planning Studies Report", February 2019, the proposed RRWP would potentially deliver up to 9 MGD (about 10,000 AFY) of purified water for injection at the Montebello Forebay or for spreading at the Rio Hondo Spreading Grounds in Pico Rivera for Central Basin replenishment purposes. Water produced from the proposed RRWP would offset an equal amount of untreated imported water from the State Water Project and/or the Colorado

River, which otherwise historically may have been used for groundwater replenishment (including in the Central Basin). As noted in Section 6.2.2 of the 2020 UWMP, all producers in Central Basin are levied a “Replenishment Assessment” to replenish Central Basin on each acre-foot of groundwater produced. Therefore, the benefit to each producer in this Plan is based on the proportional share of its anticipated production to the total Central Basin production.

WRD has developed the “Water Independence Now” (WIN) Project, formerly referred to as the Groundwater Reliability Improvement Program (GRIP), which consists of about 10,500 AFY of highly treated recycled water blended with an additional 10,500 AFY of recycled water, for a total of 21,000 AFY. This recycled water is produced from LACSD’s San Jose Creek Water Reclamation Plant and is used to replenish the Central Basin. The WIN Project will offset an equal amount of SWP water. As noted in Section 6.2.2 of the 2020 UWMP, all producers in Central Basin are levied a “Replenishment Assessment” to replenish Central Basin on each acre-foot of groundwater produced. Therefore, the benefit to each producer in this Plan is based on the proportional share of its anticipated production to the total Central Basin production. The recharged water hypothetically assigned to Liberty Utilities – Park Water is based on Liberty Utilities – Park Water’s share (0.3956%) of the Central Basin's total Allowable Pumping Allocation (217,367 AFY) multiplied by the amount of recycled water replenished and is shown on Table C-3.

The decrease in GPCD, increase in recycled water use, and enhanced groundwater recharge programs compared to the Baseline year has resulted in an overall decrease in reliance on imported water supplies. As shown in Table C-4, the percentage of imported water supplies relative to Liberty Utilities – Park Water’s total supply has decreased, and is projected to decrease, from the percentage in the Baseline year.

Metropolitan Water District of Southern California

In addition, as the wholesale provider, the Metropolitan Water District of Southern California has included a detailed discussion regarding measurable reduction in Delta reliance in Appendix 11 of its 2020 Regional Urban Water Management Plan. That discussion is included by reference and also included in Attachment 1 of this Plan.

Reduced Reliance Calculation - Liberty Utilities - Park Water

Table C-1: Optional Calculation of Water Use Efficiency - To be completed if Water Supplier does not specifically estimate Water Use Efficiency as a supply

Service Area	Water Use Efficiency Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For									
Non-Potable Water Demands		11,188	9,787	11,224	11,468	11,527	11,586	11,646	11,706
Potable Service Area Demands with Water Use Efficiency Accounted For		260	208	252	260	260	260	260	260
		10,928	9,580	10,972	11,208	11,267	11,326	11,386	11,446
Total Service Area Population									
Service Area Population		128,439	126,637	132,691	133,407	134,111	134,819	135,530	136,245
Water Use Efficiency Since Baseline									
Per Capita Water Use (GPCD)		76	68	74	75	75	75	75	75
Change in Per Capita Water Use from Baseline (GPCD)			(8)	(2)	(1)	(1)	(1)	(1)	(1)
Estimated Water Use Efficiency Since Baseline			1,195	318	143	144	145	145	146

Table C-2: Calculation of Service Area Water Demands Without Water Use Efficiency

Service Area	Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Total Service Area Water Demands									
Service Area Water Demands with Water Use Efficiency Accounted For		11,188	9,787	11,224	11,468	11,527	11,586	11,646	11,706
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline		-	1,195	318	143	144	145	145	146
Service Area Water Demands without Water Use Efficiency Accounted For		11,188	10,982	11,542	11,611	11,671	11,731	11,791	11,852

Table C-3: Calculation of Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Use Efficiency	1,195	318	143	144	145	145	146
Water Recycling	208	252	260	260	260	260	260
Stormwater Capture and Use	-	73	73	73	73	73	73
Advanced Water Technologies (WIN Project) ¹	-	-	-	-	40	40	40
Advanced Water Technologies (RRWP - Central Basin) ²	-	-	-	-	-	-	-
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	1,403	643	476	477	517	518	519
Baseline (2010)							
Service Area Water Demands without Water Use Efficiency							
Service Area Water Demands without Water Use Efficiency Accounted For	10,982	11,542	11,611	11,671	11,731	11,791	11,852
Baseline (2010)							
Change in Regional Self Reliance (Acre-Feet)							
Water Supplies Contributing to Regional Self-Reliance	1,403	643	476	477	517	518	519
Change in Water Supplies Contributing to Regional Self-Reliance	1,403	643	476	477	517	518	519
Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)							
Percent of Water Supplies Contributing to Regional Self-Reliance	12.8%	5.6%	4.1%	4.1%	4.4%	4.4%	4.4%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance	12.8%	5.6%	4.1%	4.1%	4.4%	4.4%	4.4%

Table C-4: Calculation of Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Acre-Feet)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies from the Delta Watershed (Acre-Feet)							
CVP/SWP Contract Supplies							
Delta/Delta Tributary Diversions							
Transfers and Exchanges							
Other Water Supplies from the Delta Watershed (Untreated) ³	73	-	-	-	-	-	-
Other Water Supplies from the Delta Watershed (Treated) ⁴	6,060	5,190	5,208	5,017	4,787	4,596	4,407
Total Water Supplies from the Delta Watershed	6,133	5,190	5,208	5,017	4,787	4,596	4,407
Service Area Water Demands without Water Use Efficiency							
Service Area Water Demands without Water Use Efficiency Accounted For	10,982	11,542	11,611	11,671	11,731	11,791	11,852
Change in Supplies from the Delta Watershed (Acre-Feet)							
Water Supplies from the Delta Watershed	6,133	5,190	5,208	5,017	4,787	4,596	4,407
Change in Water Supplies from the Delta Watershed	(2,540)	(3,483)	(3,465)	(3,656)	(3,886)	(4,076)	(4,266)
Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)							
Percent of Water Supplies from the Delta Watershed	55.8%	45.0%	44.9%	43.0%	40.8%	39.0%	37.2%
Change in Percent of Water Supplies from the Delta Watershed	-21.7%	-32.6%	-32.7%	-34.5%	-36.7%	-38.5%	-40.3%

¹ As part of the Water Independence Now Project, the Albert Robles Center was completed in 2019 and supplies about 21,000 AFY to Central Basin for replenishment purposes. The projected amount available to San Gabriel Valley Water Company is based on SGVWC's share of the total Allowable Pumping Allocation (0.3956%) and recent historical replenishment.

² The RRRP is anticipated to result in 10,000 AFY for the Central Basin starting in 2035. The projected amount available to SGVWC is based on the share of Central Basin's total Allowable Pumping Allocation (0.3956%).

³ Represents imported water for replenishment purposes by the Water Replenishment District of Southern California in the Central Basin.

⁴ Represents treated imported water supplies from Central Basin Municipal Water District, a member agency of Metropolitan Water District.

APPENDIX B
ATTACHMENT 1

- **Infeasibility of Accounting Supplies from the Delta Watershed for Metropolitan’s Member Agencies and their Customers**

- **Appendix 11 Addendum to the Metropolitan Water District of Southern California’s 2015 Urban Water Management Plan**

- **Appendix 11 “Quantifying Regional Self-Reliance and Reliance on Water Supplies from the Delta Watershed”, Metropolitan Water District of Southern California’s 2020 Urban Water Management Plan**

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

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.

Metropolitan as determined by Metropolitan—not the individual member agency—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 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 agency.

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 agency 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 agency'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 agency's program cost, up to a maximum of \$75 per acre-foot of estimated water savings. The \$75 Base Conservation Rate was established based on 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 Agency 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 agency administered funding program that adheres to the same funding guidelines as the Credits Program. The Member Agency 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 agency, 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 agency'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.

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[Link to Metropolitan's 2020 UWMP once final](#)

Appendix 11
Addendum to
The Metropolitan Water District of Southern California's
2015 Urban Water Management Plan

**Quantifying Regional Self-Reliance and
Reduced Reliance on Water
Supplies from the Delta Watershed**
June 2021

Appendix 11

METROPOLITAN'S REDUCED DELTA RELIANCE REPORTING

Addendum to Metropolitan's 2015 Urban Water Management Plan

A.11.1 Background

Under the Sacramento-San Joaquin Delta Reform Act of 2009, state and local public agencies proposing a covered action in the Delta,¹ 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.² 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.³

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).⁴

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;*

¹ Water Code, § 85057.5; Cal. Code Regs. tit. 23, § 5001.

² Water Code, § 85225; Delta Plan, App. D.

³ Water Code, §§ 85225.10-85225.25; Delta Plan, App. D.

⁴ Cal. Code Regs., tit. 23, § 5003.

(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.

A.11.2 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 Metropolitan's Delta reliance and regional self-reliance were developed using the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 (Guidebook Appendix C) issued in March 2021.

The data used in this analysis represent the total regional efforts of Metropolitan and its member agencies and their customers (many of them, retail agencies) and were developed in conjunction with Metropolitan's member agencies as part of the UWMP coordination process as described in Section 5 of Metropolitan's UWMP. In accordance with UWMP requirements, Metropolitan's member agencies and their customers (many of them, retail agencies) also report demands and supplies for their service areas in their respective UWMPs. The data reported by those agencies are not additive to the regional totals shown in Metropolitan's UWMP; rather, their reporting represents subtotals of the regional total and should be considered as such for the purposes of determining reduced reliance on the Delta.

While the demands that Metropolitan's member agencies and their customers report in their UWMPs are a good reflection of the demands in their respective service areas, they do not adequately represent each water supplier's contributions to reduced reliance on the Delta. In order to calculate and report their reliance on water supplies from the Delta watershed, water suppliers that receive water from the Delta through other regional or wholesale water suppliers would need to determine the amount of Delta water that they receive from the regional or wholesale supplier. Two specific pieces of information are needed to accomplish this: first is the quantity of demands on the regional or wholesale water supplier that accurately reflect a supplier's contributions to reduced reliance on the Delta, and second is the quantity of a supplier's demands on the regional or wholesale water supplier that are met by supplies from the Delta watershed.

For water suppliers that make investments in regional projects or programs it may be infeasible to quantify their demands on the regional or wholesale water supplier in a way that accurately reflects their individual contributions to reduced reliance on the Delta. Due to the extensive, long-standing and successful implementation of regional demand management and local resource

incentive programs in Metropolitan's service area, this infeasibility holds true for Metropolitan's members as well their customers. For Metropolitan's service area, reduced reliance on supplies from the Delta watershed can only be accurately accounted at the regional level, as is demonstrated in this analysis.

The following provides a summary of the near-term (2025) and long-term (2045) expected outcomes for Metropolitan's Delta reliance and regional self-reliance. The results show that as a region, Metropolitan and its members as well as their customers 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

- Near-term (2025) – Normal water year regional self-reliance is expected to increase by 813 TAF from the 2010 baseline; this represents an increase of almost 25 percent of 2025 normal water year retail demands (Table A.11-2).
- Long-term (2045) – Normal water year regional self-reliance is expected to increase by more than 1.28 MAF from the 2010 baseline, this represents an increase of more than 25 percent of 2045 normal water year retail demands (Table A.11-2).

Expected Outcomes for Reduced Reliance on Supplies from the Delta Watershed

- Near-term (2025) – 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 (Table A.11-3).
- 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 A.11-3).

A11.3 Demonstration of Reduced Reliance on the Delta

The methodology used to determine Metropolitan'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 Metropolitan's demonstration of reduced reliance include:

- 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 Metropolitan and its members as well as their customers.
- No projects or programs that are described in the UWMPs as "Projects Under Development" were included in the accounting of supplies.

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 Metropolitan's 2005 UWMP as the UWMPs generally do not provide normal water year data for the year that they are adopted (i.e., 2005 UWMP forecasts begin in 2010, 2010 UWMP forecasts begin in 2015, and so on).

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 Metropolitan's 2010 and 2015 UWMPs respectively. Expected outcomes for 2025-2045 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 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 Metropolitan that explicitly calculate and report water use efficiency savings in their UWMP will need to make an adjustment to properly reflect normal water year demands in the calculation of reduced reliance. As explained in the 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 A.11-1 shows the results of this adjustment for Metropolitan. Supporting narratives and documentation for all of the data shown in Table A.11-1 are provided below.

**Table A.11-1
Demands without Water Use Efficiency Accounted For**

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Demands with Water Use Efficiency Accounted For	4,628,000	4,563,000	4,163,000	3,763,000	3,821,000	3,893,000	3,936,000	3,985,000
Reported Water Use Efficiency	865,000	936,000	1,056,000	1,162,000	1,211,000	1,263,000	1,325,000	1,389,000
Service Area Demands without Water Use Efficiency Accounted For	5,493,000	5,499,000	5,219,000	4,925,000	5,032,000	5,156,000	5,261,000	5,374,000

Service Area Demands without Water Use Efficiency

The service area demands shown in Table A.11-1 represent the total retail water demands for Metropolitan's service area and include municipal and industrial demands, agricultural demands, seawater barrier demands, and storage replenishment demands. These demand types and the modeling methodologies used to calculate them are described in Section 2.2 and Appendix 1 of Metropolitan's UWMP.

Water Use Efficiency

The water use efficiency numbers shown in Table A.11-1 represent the total water use efficiency savings (conservation) for Metropolitan's region, including savings from active, code-based, price-effect and pre-1990 sources. These sources of water use efficiency and the methodologies used to calculate them are described in Section 2.2, Section 3.4, Section 3.7 and Appendix 1 of Metropolitan's UWMP.

The demand and water use efficiency data shown in Table A.11-1 were collected from the following sources:

- Baseline (2010) values – Metropolitan's 2005 UWMP, Table 2-6: Metropolitan Regional Water Demand Average Year
- 2015 values – Metropolitan's 2010 UWMP, Table 2-8: Metropolitan Regional Water Demands Average Year
- 2020 values – Metropolitan's 2015 UWMP, Table 2-3: Metropolitan Regional Water Demands Average Year
- 2025-2045 values – Metropolitan's 2020 UWMP, Table 2-3: Metropolitan Regional Water Demands Normal Water Year

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 A.11-2 shows expected outcomes for supplies contributing to regional self-reliance both in amount and as a percentage. The numbers shown in Table A.11-2 represent efforts to improve regional self-reliance for Metropolitan's entire service area and include the total contributions of Metropolitan and its members as well as their customers. Supporting narratives and documentation for the all of the data shown in Table A.11-2 are provided below.

The results shown in Table A.11-2 demonstrate that Metropolitan'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 747 TAF from the 2010 baseline; this represents an increase of about 23 percent of 2025 normal water year retail demands. In the long-term (2045), normal water year regional self-reliance is expected to increase by more than 1.2 MAF from the 2010 baseline; this represents an increase of 25 percent of 2045 normal water year retail demands.

**Table A.11-2
Supplies Contributing to Regional Self-Reliance**

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Use Efficiency	865,000	936,000	1,056,000	1,162,000	1,211,000	1,263,000	1,325,000	1,389,000
Water Recycling	316,000	348,000	436,000	550,000	613,000	687,000	698,000	706,000
Stormwater Capture and Use	100,000	103,000	110,000	80,000	82,000	82,000	82,000	82,000
Advanced Water Technologies	111,000	101,000	194,000	194,000	208,000	209,000	209,000	210,000
Conjunctive Use Projects	1,416,000	1,429,000	1,303,000	1,255,000	1,273,000	1,296,000	1,311,000	1,326,000
Local and Regional Water Supply and Storage Projects	252,000	224,000	261,000	257,000	257,000	258,000	258,000	258,000
Other Programs and Projects that Contribute to Regional Self-Reliance	875,000	1,250,000	1,200,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Water Supplies Contributing to Regional Self-Reliance	3,935,000	4,391,000	4,560,000	4,748,000	4,894,000	5,045,000	5,133,000	5,221,000

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	4,925,000	5,032,000	5,156,000	5,261,000	5,374,000

Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Supplies Contributing to Regional Self-Reliance	3,935,000	4,391,000	4,560,000	4,748,000	4,894,000	5,045,000	5,133,000	5,221,000
Change in Supplies Contributing to Regional Self-Reliance	NA	456,000	625,000	813,000	959,000	1,110,000	1,198,000	1,286,000

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Percent of Supplies Contributing to Regional Self-Reliance	71.6%	79.9%	87.4%	96.4%	97.3%	97.8%	97.6%	97.2%
Change in Percent of Supplies Contributing to Regional Self-Reliance	NA	8.2%	15.7%	24.8%	25.6%	26.2%	25.9%	25.5%

Water Use Efficiency

The water use efficiency information shown in Table A.11-2 is taken directly from Table A.11-1 above.

Water Recycling

The water recycling values shown in Table A.11-2 reflect the total recycled water production in Metropolitan's service area as described in Section 3.5 and Appendix 2 of Metropolitan's UWMP.

Stormwater Capture and Use

The stormwater capture and use data shown in Table A.11-2 include supplies from local surface water production as described in Section 1.4 and Appendix 2 of Metropolitan's UWMP.

These values do not include production from regional storage reservoirs; storage in these reservoirs is comprised of previously stored water from sources already reflected in Tables A.11-2 and A.11-3. These regional storage resources are generally used to provide additional regional self-reliance in dry years, which is not reflected in this normal water year analysis. The regional storage reservoirs and their yields are described in Section 3.6, Appendix 2 and Appendix 3 of Metropolitan's UWMP.

The stormwater capture and use values shown in Table A.11-2 also do not include stormwater capture that is used to recharge local groundwater basins. Stormwater capture for groundwater recharge supports production of groundwater in the region, and for the purposes of this analysis that production is already captured in Table A.11-2 under conjunctive use projects.

Advanced Water Technologies

The advanced water technologies data shown in Table A.11-2 include total groundwater recovery and seawater desalination production in Metropolitan's service area as described in Section 3.5 and Appendix 2 of Metropolitan's UWMP.

Conjunctive Use Projects

The values for conjunctive use projects shown in Table A.11-2 represent total groundwater production in the region as described in Section 1.4 and Appendix 2 of Metropolitan's UWMP.

The conjunctive use projects numbers shown in Table A.11-2 do not include production from regional groundwater conjunctive use programs. As described in the stormwater capture and use discussion above, these regional storage programs rely on previously stored water from sources already reflected in Tables A.11-2 and A.11-3 and are generally used to provide additional regional self-reliance in dry-years. The regional groundwater conjunctive use programs and their yields are described in Section 3.6 and Appendix 3.

Local and Regional Water Supply and Storage Programs

The data for local and regional water supply and storage programs shown in Table A.11-2 include supplies from the Los Angeles Aqueduct. This supply is described in Section 1.4 and Appendix 2 of Metropolitan's UWMP.

The local and regional supply numbers shown in Table A.11-2, except for "Other Programs and Projects that Contribute to Regional Self-Reliance" which is discussed below, were obtained from the following sources:

- Baseline (2010) values – Metropolitan's 2005 UWMP, Table 2-6: Metropolitan Regional Water Demand Average Year

- 2015 values – Metropolitan's 2010 UWMP, Table 2-8: Metropolitan Regional Water Demands Average Year
- 2020 values – Metropolitan's 2015 UWMP, Table 2-3: Metropolitan Regional Water Demands Average Year
- 2025-2045 values – Metropolitan's 2020 UWMP, Table 2-3: Metropolitan Regional Water Demands Normal Water Year

Other Programs and Projects that Contribute to Regional Self-Reliance

Other programs and projects that contribute to regional self-reliance shown in Table A.11-2 include current programs from the Colorado River Aqueduct. Colorado River supplies include Metropolitan's basic Colorado River apportionment, as well as supplies that result from existing and committed programs, including those from the IID-MWD Conservation Program, the implementation of the Quantification Settlement Agreement (QSA), related agreements, and the exchange agreement with SDCWA. Colorado River Aqueduct supplies and programs are described in Section 3.1 and Appendix 3 of Metropolitan's UWMP.

The values shown in Table A.11-2 for other programs and projects that contribute to regional self-reliance come from the following sources:

- Baseline (2010) values – Metropolitan's 2005 UWMP, Table A.3-7: Maximum Expected Colorado River Aqueduct Deliveries Year 2010 (Average Year)
- 2015 values – Metropolitan's 2010 UWMP, Table A.3-7: Maximum Expected Colorado River Aqueduct Deliveries Year 2015 (Average Year)
- 2020 values – Metropolitan's 2015 UWMP, Table A.3-7: Maximum Expected Colorado River Aqueduct Deliveries Year 2020 (Average Year)
- 2025-2045 values – Metropolitan's 2020 UWMP, Table A.3-7: Maximum Expected Colorado River Aqueduct Deliveries Years 2025, 2030, 2035, 2040, 2045 (Normal Water Year)

Reliance on Water Supplies from the Delta Watershed

In order for a covered action to demonstrate consistency with the Delta Plan, WR P1 subsection (c)(1)(C) requires that water suppliers report the expected outcomes for measurable reductions in supplies from the Delta watershed either as an amount or as a percentage. This analysis provides both calculations. Based on the methodology described in Guidebook Appendix C, and consistent with the approach of this analysis in not including projects under development, this accounting does not include any supplies from potential future covered actions. Table A.11-3 shows the expected outcomes for reliance on supplies from the Delta watershed for Metropolitan's service area. Supporting narratives and documentation for the all of the data shown in Table A.11-3 are provided below.

The results shown in Table A.11-3 demonstrate that Metropolitan's service area 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 A.11-3
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	4,925,000	5,032,000	5,156,000	5,261,000	5,374,000

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%	24.2%	23.5%	22.9%	22.4%	21.9%
Change in Percent of Supplies from the Delta Watershed	NA	-7.6%	-6.6%	-3.0%	-3.7%	-4.3%	-4.8%	-5.2%

CVP/SWP Contract Supplies

The CVP/SWP contract supplies shown in Table A.11-3 include Metropolitan's SWP Table A and Article 21 supplies. These supplies are described in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

The values shown in Table A.11-3 do not include Desert Water Agency/Coachella Valley Water District SWP contract supplies. These supplies are exchanged with Desert Water Agency and Coachella Valley Water District for an equal amount of Colorado River water, which is reflected in the Colorado River Aqueduct supplies shown in Table A.11-2. In addition, Desert Water Agency and Coachella Valley Water District should include their SWP contract supplies in their own accountings of reduced reliance. Additional information on these exchange agreements can be found in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

These values also do not include supplies from San Luis Carryover storage or Central Valley storage programs because storage in these programs comprises previously stored water from sources already reflected in Table A.11-3. These storage programs are generally used to provide additional regional self-reliance in dry years, which is not reflected in this normal water year analysis. The Central Valley storage projects and their yields are described in Section 3.3, and Appendix 3. San Luis Carryover storage is described in Section 3.2 and Appendix 3.

Transfers and Exchanges of Supplies from the Delta Watershed

The transfers and exchanges of supplies from the Delta watershed shown in Table A.11-3 include supplies from the San Bernardino Valley MWD Program, Yuba River Accord Purchase Program, the San Gabriel Valley MWD Program, Irvine Ranch Water District Storage and Exchange Program, and other generic SWP and Central Valley transfers and exchanges. These programs are described in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

Supplies from the Delta Watershed shown in Table A.11-3 are from the following sources:

- Baseline (2010) values – Metropolitan's 2005 UWMP, Table A.3-7: California Aqueduct Program Capabilities Year 2010 (Average Year)

- 2015 values – Metropolitan's 2010 UWMP, Table A.3-7: California Aqueduct Program Capabilities Year 2015 (Average Year)
- 2020 values – Metropolitan's 2015 UWMP, Table A.3-7: California Aqueduct Program Capabilities Year 2020 (Average Year)
- 2025-2045 values – Metropolitan's 2020 UWMP, Table A.3-7: California Aqueduct Program Capabilities Years 2025, 2030, 2035, 2040, 2045 (Normal Water Year)

A.11.4 UWMP Implementation

In addition to the analysis and documentation described above, WR P1 subsection (c)(1)(B) requires that all programs and projects included in the UWMP that are locally cost-effective and technically feasible, which reduce reliance on the Delta, are identified, evaluated, and implemented consistent with the implementation schedule. WR P1 (c)(1)(B) states that:

(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[.]

In accordance with Water Code Section 10631(f), water suppliers must already include in their UWMP a detailed description of expected future projects and programs that they may implement to increase the amount of water supply available to them in normal and single-dry water years and for a period of drought lasting five consecutive years. The UWMP description must also identify specific projects, include a description of the increase in water supply that is expected to be available from each project, and include an estimate regarding the implementation timeline for each project or program.

Section 3 of Metropolitan's UWMP summarizes the implementation plan and continued progress in developing a diversified water portfolio to meet the region's water needs.

Water Use Efficiency

The water use efficiency numbers used in this analysis include the total water use efficiency savings (conservation) for the service area, including savings from active, code-based, price-effect and pre-1990 savings. The specific water use efficiency programs and their implementation are described in Section 3.4 of Metropolitan's UWMP.

Water Recycling

The water recycling values used in this analysis reflect the total recycled water production in Metropolitan's service area. Water recycling programs and implementation are discussed in Section 3.5 of Metropolitan's UWMP. In addition, individual project-level details are provided in Appendix 5.

Stormwater Capture and Use

The stormwater capture and use data used in this analysis include supplies from local surface water production. Local surface water production and its implementation are discussed in Appendix 2 of Metropolitan's UWMP.

Advanced Water Technologies

The advanced water technologies data used in this analysis include total groundwater recovery and seawater desalination production in Metropolitan's service. Groundwater recovery and seawater desalination programs and implementation are described in Section 3.5 of Metropolitan's UWMP. In addition, individual project-level details are provided in Appendix 5.

Conjunctive Use Projects

The values for conjunctive use projects used in this analysis represent total groundwater production in the region. Groundwater production and its implementation are discussed in Appendix 2 of Metropolitan's UWMP.

Local and Regional Water Supply and Storage Programs

The data for local and regional water supply and storage programs shown in this analysis include supplies from the Los Angeles Aqueduct. This program and its implementation are described in Appendix 2 of Metropolitan's UWMP.

Other Programs and Projects that Contribute to Regional Self-Reliance

Other programs and projects that contribute to regional self-reliance used in this analysis include current programs from the Colorado River Aqueduct. Colorado River supplies include Metropolitan's basic Colorado River apportionment, as well as supplies that result from existing and committed programs, including those from the IID-MWD Conservation Program, the implementation of the Quantification Settlement Agreement (QSA), related agreements, and the exchange agreement with SDCWA. Colorado River Aqueduct programs and their implementation are described in Section 3.1 and Appendix 3 of Metropolitan's UWMP.

CVP/SWP Contract Supplies

The CVP/SWP contract supplies shown in this analysis include Metropolitan's SWP Table A and Article 21 supplies. These supplies and their implementation are described in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

Transfers and Exchanges of Supplies from the Delta Watershed

The transfers and exchanges of supplies from the Delta watershed shown in this analysis include supplies from the San Bernardino Valley MWD Program, Yuba River Accord Purchase Program, the San Gabriel Valley MWD Program, Irvine Ranch Water District Storage and Exchange Program, and other generic SWP and Central Valley transfers and exchanges. These programs and their implementation are described in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

A.11.5 2015 UWMP Appendix 11

The information contained in this Appendix 11 is also intended to be a new Appendix 11 attached to Metropolitan's 2015 UWMP consistent with WR P1 subsection (c)(1)(C) (Cal. Code Regs. tit. 23, § 5003). Metropolitan provided notice of the availability of the draft 2020 UWMP (including this Appendix 11 which will also be a new Appendix 11 to its 2015 UWMP) and WSCP and the public hearing to consider adoption of both plans and Appendix 11 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 public review drafts of the 2020 UWMP, Appendix 11 to the 2015 UWMP, and the WSCP were posted prominently on Metropolitan's website, mwdh2o.com, starting February 1, 2021, more than 60 days in advance of the public hearing on April 12, 2021. The notice of availability of the documents was sent to Metropolitan's member agencies, as well as cities and counties in Metropolitan's service area. In addition, a public notice advertising the public hearing in English and Spanish was published in 12 Southern California newspapers. The notification in English language newspapers was published on February 1 and 8, 2021. The notification was published on January 28-30, 2021 and February 1, 4-6, and 8, 2021 in Spanish language newspapers, satisfying the requirement for non-English language notification. Copies of: (1) the notification letter sent to the member agencies, cities and counties in Metropolitan's service area, and (2) the notice published in the newspapers are included in the 2020 UWMP Section 5. Thus, this Appendix 11 to Metropolitan's 2020 UWMP, which was adopted with Metropolitan's 2020 UWMP, will also be recognized and treated as Appendix 11 to Metropolitan's 2015 UWMP.

Metropolitan held the public hearing for the draft 2020 UWMP, draft Appendix 11 to the 2015 UWMP, and draft WSCP on April 12, 2021, at the Board's Water Planning and Stewardship Committee meeting, held online due to COVID-19 concerns. On May 11, 2021, Metropolitan's Board determined that the 2020 UWMP and the WSCP are consistent with the MWD Act and accurately represent the water resources plan for Metropolitan's service area. In addition, Metropolitan's Board determined that Appendix 11 to both the 2015 UWMP and the 2020 UWMP includes 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 Resolutions 9279, 9280, and 9281, the Board adopted the 2020 UWMP, Appendix 11 to the 2015 UWMP, and the WSCP and authorized their submittal to the State of California. Copies of Resolutions 9279, 9280, and 9281 are included in the 2020 UWMP Section 5, and Resolution 9281 for the WSCP is attached to the WSCP as Attachment C.

Appendix 11

QUANTIFYING REGIONAL SELF-RELIANCE AND REDUCED RELIANCE ON WATER SUPPLIES FROM THE DELTA WATERSHED

Appendix 11

METROPOLITAN'S

REDUCED DELTA RELIANCE REPORTING

A.11.1 Background

Under the Sacramento-San Joaquin Delta Reform Act of 2009, state and local public agencies proposing a covered action in the Delta,¹ 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.² 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.³

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).⁴

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;*

¹ Water Code, § 85057.5; Cal. Code Regs. tit. 23, § 5001.

² Water Code, § 85225; Delta Plan, App. D.

³ Water Code, §§ 85225.10-85225.25; Delta Plan, App. D.

⁴ Cal. Code Regs., tit. 23, § 5003.

(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.

A.11.2 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 Metropolitan's Delta reliance and regional self-reliance were developed using the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 (Guidebook Appendix C) issued in March 2021.

The data used in this analysis represent the total regional efforts of Metropolitan and its member agencies and their customers (many of them, retail agencies) and were developed in conjunction with Metropolitan's member agencies as part of the UWMP coordination process as described in Section 5 of Metropolitan's UWMP. In accordance with UWMP requirements, Metropolitan's member agencies and their customers (many of them, retail agencies) also report demands and supplies for their service areas in their respective UWMPs. The data reported by those agencies are not additive to the regional totals shown in Metropolitan's UWMP; rather, their reporting represents subtotals of the regional total and should be considered as such for the purposes of determining reduced reliance on the Delta.

While the demands that Metropolitan's member agencies and their customers report in their UWMPs are a good reflection of the demands in their respective service areas, they do not adequately represent each water supplier's contributions to reduced reliance on the Delta. In order to calculate and report their reliance on water supplies from the Delta watershed, water suppliers that receive water from the Delta through other regional or wholesale water suppliers would need to determine the amount of Delta water that they receive from the regional or wholesale supplier. Two specific pieces of information are needed to accomplish this: first is the quantity of demands on the regional or wholesale water supplier that accurately reflect a supplier's contributions to reduced reliance on the Delta, and second is the quantity of a supplier's demands on the regional or wholesale water supplier that are met by supplies from the Delta watershed.

For water suppliers that make investments in regional projects or programs it may be infeasible to quantify their demands on the regional or wholesale water supplier in a way that accurately reflects their individual contributions to reduced reliance on the Delta. Due to the extensive, long-

standing and successful implementation of regional demand management and local resource incentive programs in Metropolitan's service area, this infeasibility holds true for Metropolitan's members as well their customers. For Metropolitan's service area, reduced reliance on supplies from the Delta watershed can only be accurately accounted at the regional level, as is demonstrated in this analysis.

The following provides a summary of the near-term (2025) and long-term (2045) expected outcomes for Metropolitan's Delta reliance and regional self-reliance. The results show that as a region, Metropolitan and its members as well as their customers 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

- Near-term (2025) – Normal water year regional self-reliance is expected to increase by 813 TAF from the 2010 baseline; this represents an increase of almost 25 percent of 2025 normal water year retail demands (Table A.11-2).
- Long-term (2045) – Normal water year regional self-reliance is expected to increase by more than 1.28 MAF from the 2010 baseline, this represents an increase of more than 25 percent of 2045 normal water year retail demands (Table A.11-2).

Expected Outcomes for Reduced Reliance on Supplies from the Delta Watershed

- Near-term (2025) – 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 (Table A.11-3).
- 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 A.11-3).

A11.3 Demonstration of Reduced Reliance on the Delta

The methodology used to determine Metropolitan'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 Metropolitan's demonstration of reduced reliance include:

- 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 Metropolitan and its members as well as their customers.
- No projects or programs that are described in the UWMPs as "Projects Under Development" were included in the accounting of supplies.

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 Metropolitan's 2005 UWMP as the UWMPs generally do not provide normal water year data for

the year that they are adopted (i.e., 2005 UWMP forecasts begin in 2010, 2010 UWMP forecasts begin in 2015, and so on).

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 Metropolitan's 2010 and 2015 UWMPs respectively. Expected outcomes for 2025-2045 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 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 Metropolitan that explicitly calculate and report water use efficiency savings in their UWMP will need to make an adjustment to properly reflect normal water year demands in the calculation of reduced reliance. As explained in the 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 A.11-1 shows the results of this adjustment for Metropolitan. Supporting narratives and documentation for all of the data shown in Table A.11-1 are provided below.

**Table A.11-1
Demands without Water Use Efficiency Accounted For**

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Demands with Water Use Efficiency Accounted For	4,628,000	4,563,000	4,163,000	3,763,000	3,821,000	3,893,000	3,936,000	3,985,000
Reported Water Use Efficiency	865,000	936,000	1,056,000	1,162,000	1,211,000	1,263,000	1,325,000	1,389,000
Service Area Demands without Water Use Efficiency Accounted For	5,493,000	5,499,000	5,219,000	4,925,000	5,032,000	5,156,000	5,261,000	5,374,000

Service Area Demands without Water Use Efficiency

The service area demands shown in Table A.11-1 represent the total retail water demands for Metropolitan's service area and include municipal and industrial demands, agricultural demands, seawater barrier demands, and storage replenishment demands. These demand types and the modeling methodologies used to calculate them are described in Section 2.2 and Appendix 1 of Metropolitan's UWMP.

Water Use Efficiency

The water use efficiency numbers shown in Table A.11-1 represent the total water use efficiency savings (conservation) for Metropolitan's region, including savings from active, code-based, price-effect and pre-1990 sources. These sources of water use efficiency and the methodologies used to calculate them are described in Section 2.2, Section 3.4, Section 3.7 and Appendix 1 of Metropolitan's UWMP.

The demand and water use efficiency data shown in Table A.11-1 were collected from the following sources:

- Baseline (2010) values – Metropolitan's 2005 UWMP, Table 2-6: Metropolitan Regional Water Demand Average Year
- 2015 values – Metropolitan's 2010 UWMP, Table 2-8: Metropolitan Regional Water Demands Average Year
- 2020 values – Metropolitan's 2015 UWMP, Table 2-3: Metropolitan Regional Water Demands Average Year
- 2025-2045 values – Metropolitan's 2020 UWMP, Table 2-3: Metropolitan Regional Water Demands Normal Water Year

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 A.11-2 shows expected outcomes for supplies contributing to regional self-reliance both in amount and as a percentage. The numbers shown in Table A.11-2 represent efforts to improve regional self-reliance for Metropolitan's entire service area and include the total contributions of Metropolitan and its members as well as their customers. Supporting narratives and documentation for the all of the data shown in Table A.11-2 are provided below.

The results shown in Table A.11-2 demonstrate that Metropolitan'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 747 TAF from the 2010 baseline; this represents an increase of about 23 percent of 2025 normal water year retail demands. In the long-term (2045), normal water year regional self-reliance is expected to increase by more than 1.2 MAF from the 2010 baseline; this represents an increase of 25 percent of 2045 normal water year retail demands.

**Table A.11-2
Supplies Contributing to Regional Self-Reliance**

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Use Efficiency	865,000	936,000	1,056,000	1,162,000	1,211,000	1,263,000	1,325,000	1,389,000
Water Recycling	316,000	348,000	436,000	550,000	613,000	687,000	698,000	706,000
Stormwater Capture and Use	100,000	103,000	110,000	80,000	82,000	82,000	82,000	82,000
Advanced Water Technologies	111,000	101,000	194,000	194,000	208,000	209,000	209,000	210,000
Conjunctive Use Projects	1,416,000	1,429,000	1,303,000	1,255,000	1,273,000	1,296,000	1,311,000	1,326,000
Local and Regional Water Supply and Storage Projects	252,000	224,000	261,000	257,000	257,000	258,000	258,000	258,000
Other Programs and Projects that Contribute to Regional Self-Reliance	875,000	1,250,000	1,200,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Water Supplies Contributing to Regional Self-Reliance	3,935,000	4,391,000	4,560,000	4,748,000	4,894,000	5,045,000	5,133,000	5,221,000

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	4,925,000	5,032,000	5,156,000	5,261,000	5,374,000

Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Supplies Contributing to Regional Self-Reliance	3,935,000	4,391,000	4,560,000	4,748,000	4,894,000	5,045,000	5,133,000	5,221,000
Change in Supplies Contributing to Regional Self-Reliance	NA	456,000	625,000	813,000	959,000	1,110,000	1,198,000	1,286,000

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Percent of Supplies Contributing to Regional Self-Reliance	71.6%	79.9%	87.4%	96.4%	97.3%	97.8%	97.6%	97.2%
Change in Percent of Supplies Contributing to Regional Self-Reliance	NA	8.2%	15.7%	24.8%	25.6%	26.2%	25.9%	25.5%

Water Use Efficiency

The water use efficiency information shown in Table A.11-2 is taken directly from Table A.11-1 above.

Water Recycling

The water recycling values shown in Table A.11-2 reflect the total recycled water production in Metropolitan's service area as described in Section 3.5 and Appendix 2 of Metropolitan's UWMP.

Stormwater Capture and Use

The stormwater capture and use data shown in Table A.11-2 include supplies from local surface water production as described in Section 1.4 and Appendix 2 of Metropolitan's UWMP.

These values do not include production from regional storage reservoirs; storage in these reservoirs is comprised of previously stored water from sources already reflected in Tables A.11-2 and A.11-3. These regional storage resources are generally used to provide additional regional self-reliance in dry years, which is not reflected in this normal water year analysis. The regional storage reservoirs and their yields are described in Section 3.6, Appendix 2 and Appendix 3 of Metropolitan's UWMP.

The stormwater capture and use values shown in Table A.11-2 also do not include stormwater capture that is used to recharge local groundwater basins. Stormwater capture for groundwater recharge supports production of groundwater in the region, and for the purposes of this analysis that production is already captured in Table A.11-2 under conjunctive use projects.

Advanced Water Technologies

The advanced water technologies data shown in Table A.11-2 include total groundwater recovery and seawater desalination production in Metropolitan's service area as described in Section 3.5 and Appendix 2 of Metropolitan's UWMP.

Conjunctive Use Projects

The values for conjunctive use projects shown in Table A.11-2 represent total groundwater production in the region as described in Section 1.4 and Appendix 2 of Metropolitan's UWMP.

The conjunctive use projects numbers shown in Table A.11-2 do not include production from regional groundwater conjunctive use programs. As described in the stormwater capture and use discussion above, these regional storage programs rely on previously stored water from sources already reflected in Tables A.11-2 and A.11-3 and are generally used to provide additional regional self-reliance in dry-years. The regional groundwater conjunctive use programs and their yields are described in Section 3.6 and Appendix 3.

Local and Regional Water Supply and Storage Programs

The data for local and regional water supply and storage programs shown in Table A.11-2 include supplies from the Los Angeles Aqueduct. This supply is described in Section 1.4 and Appendix 2 of Metropolitan's UWMP.

The local and regional supply numbers shown in Table A.11-2, except for "Other Programs and Projects that Contribute to Regional Self-Reliance" which is discussed below, were obtained from the following sources:

- Baseline (2010) values – Metropolitan's 2005 UWMP, Table 2-6: Metropolitan Regional Water Demand Average Year

- 2015 values – Metropolitan's 2010 UWMP, Table 2-8: Metropolitan Regional Water Demands Average Year
- 2020 values – Metropolitan's 2015 UWMP, Table 2-3: Metropolitan Regional Water Demands Average Year
- 2025-2045 values – Metropolitan's 2020 UWMP, Table 2-3: Metropolitan Regional Water Demands Normal Water Year

Other Programs and Projects that Contribute to Regional Self-Reliance

Other programs and projects that contribute to regional self-reliance shown in Table A.11-2 include current programs from the Colorado River Aqueduct. Colorado River supplies include Metropolitan's basic Colorado River apportionment, as well as supplies that result from existing and committed programs, including those from the IID-MWD Conservation Program, the implementation of the Quantification Settlement Agreement (QSA), related agreements, and the exchange agreement with SDCWA. Colorado River Aqueduct supplies and programs are described in Section 3.1 and Appendix 3 of Metropolitan's UWMP.

The values shown in Table A.11-2 for other programs and projects that contribute to regional self-reliance come from the following sources:

- Baseline (2010) values – Metropolitan's 2005 UWMP, Table A.3-7: Maximum Expected Colorado River Aqueduct Deliveries Year 2010 (Average Year)
- 2015 values – Metropolitan's 2010 UWMP, Table A.3-7: Maximum Expected Colorado River Aqueduct Deliveries Year 2015 (Average Year)
- 2020 values – Metropolitan's 2015 UWMP, Table A.3-7: Maximum Expected Colorado River Aqueduct Deliveries Year 2020 (Average Year)
- 2025-2045 values – Metropolitan's 2020 UWMP, Table A.3-7: Maximum Expected Colorado River Aqueduct Deliveries Years 2025, 2030, 2035, 2040, 2045 (Normal Water Year)

Reliance on Water Supplies from the Delta Watershed

In order for a covered action to demonstrate consistency with the Delta Plan, WR P1 subsection (c)(1)(C) requires that water suppliers report the expected outcomes for measurable reductions in supplies from the Delta watershed either as an amount or as a percentage. This analysis provides both calculations. Based on the methodology described in Guidebook Appendix C, and consistent with the approach of this analysis in not including projects under development, this accounting does not include any supplies from potential future covered actions. Table A.11-3 shows the expected outcomes for reliance on supplies from the Delta watershed for Metropolitan's service area. Supporting narratives and documentation for the all of the data shown in Table A.11-3 are provided below.

The results shown in Table A.11-3 demonstrate that Metropolitan's service area 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 A.11-3
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	4,925,000	5,032,000	5,156,000	5,261,000	5,374,000

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%	24.2%	23.5%	22.9%	22.4%	21.9%
Change in Percent of Supplies from the Delta Watershed	NA	-7.6%	-6.6%	-3.0%	-3.7%	-4.3%	-4.8%	-5.2%

CVP/SWP Contract Supplies

The CVP/SWP contract supplies shown in Table A.11-3 include Metropolitan's SWP Table A and Article 21 supplies. These supplies are described in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

The values shown in Table A.11-3 do not include Desert Water Agency/Coachella Valley Water District SWP contract supplies. These supplies are exchanged with Desert Water Agency and Coachella Valley Water District for an equal amount of Colorado River water, which is reflected in the Colorado River Aqueduct supplies shown in Table A.11-2. In addition, Desert Water Agency and Coachella Valley Water District should include their SWP contract supplies in their own accountings of reduced reliance. Additional information on these exchange agreements can be found in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

These values also do not include supplies from San Luis Carryover storage or Central Valley storage programs because storage in these programs comprises previously stored water from sources already reflected in Table A.11-3. These storage programs are generally used to provide additional regional self-reliance in dry years, which is not reflected in this normal water year analysis. The Central Valley storage projects and their yields are described in Section 3.3, and Appendix 3. San Luis Carryover storage is described in Section 3.2 and Appendix 3.

Transfers and Exchanges of Supplies from the Delta Watershed

The transfers and exchanges of supplies from the Delta watershed shown in Table A.11-3 include supplies from the San Bernardino Valley MWD Program, Yuba River Accord Purchase Program, the San Gabriel Valley MWD Program, Irvine Ranch Water District Storage and Exchange Program, and other generic SWP and Central Valley transfers and exchanges. These programs are described in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

Supplies from the Delta Watershed shown in Table A.11-3 are from the following sources:

- Baseline (2010) values – Metropolitan's 2005 UWMP, Table A.3-7: California Aqueduct Program Capabilities Year 2010 (Average Year)

- 2015 values – Metropolitan's 2010 UWMP, Table A.3-7: California Aqueduct Program Capabilities Year 2015 (Average Year)
- 2020 values – Metropolitan's 2015 UWMP, Table A.3-7: California Aqueduct Program Capabilities Year 2020 (Average Year)
- 2025-2045 values – Metropolitan's 2020 UWMP, Table A.3-7: California Aqueduct Program Capabilities Years 2025, 2030, 2035, 2040, 2045 (Normal Water Year)

A.11.4 UWMP Implementation

In addition to the analysis and documentation described above, WR P1 subsection (c)(1)(B) requires that all programs and projects included in the UWMP that are locally cost-effective and technically feasible, which reduce reliance on the Delta, are identified, evaluated, and implemented consistent with the implementation schedule. WR P1 (c)(1)(B) states that:

(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[.]

In accordance with Water Code Section 10631(f), water suppliers must already include in their UWMP a detailed description of expected future projects and programs that they may implement to increase the amount of water supply available to them in normal and single-dry water years and for a period of drought lasting five consecutive years. The UWMP description must also identify specific projects, include a description of the increase in water supply that is expected to be available from each project, and include an estimate regarding the implementation timeline for each project or program.

Section 3 of Metropolitan's UWMP summarizes the implementation plan and continued progress in developing a diversified water portfolio to meet the region's water needs.

Water Use Efficiency

The water use efficiency numbers used in this analysis include the total water use efficiency savings (conservation) for the service area, including savings from active, code-based, price-effect and pre-1990 savings. The specific water use efficiency programs and their implementation are described in Section 3.4 of Metropolitan's UWMP.

Water Recycling

The water recycling values used in this analysis reflect the total recycled water production in Metropolitan's service area. Water recycling programs and implementation are discussed in Section 3.5 of Metropolitan's UWMP. In addition, individual project-level details are provided in Appendix 5.

Stormwater Capture and Use

The stormwater capture and use data used in this analysis include supplies from local surface water production. Local surface water production and its implementation are discussed in Appendix 2 of Metropolitan's UWMP.

Advanced Water Technologies

The advanced water technologies data used in this analysis include total groundwater recovery and seawater desalination production in Metropolitan's service. Groundwater recovery and seawater desalination programs and implementation are described in Section 3.5 of Metropolitan's UWMP. In addition, individual project-level details are provided in Appendix 5.

Conjunctive Use Projects

The values for conjunctive use projects used in this analysis represent total groundwater production in the region. Groundwater production and its implementation are discussed in Appendix 2 of Metropolitan's UWMP.

Local and Regional Water Supply and Storage Programs

The data for local and regional water supply and storage programs shown in this analysis include supplies from the Los Angeles Aqueduct. This program and its implementation are described in Appendix 2 of Metropolitan's UWMP.

Other Programs and Projects that Contribute to Regional Self-Reliance

Other programs and projects that contribute to regional self-reliance used in this analysis include current programs from the Colorado River Aqueduct. Colorado River supplies include Metropolitan's basic Colorado River apportionment, as well as supplies that result from existing and committed programs, including those from the IID-MWD Conservation Program, the implementation of the Quantification Settlement Agreement (QSA), related agreements, and the exchange agreement with SDCWA. Colorado River Aqueduct programs and their implementation are described in Section 3.1 and Appendix 3 of Metropolitan's UWMP.

CVP/SWP Contract Supplies

The CVP/SWP contract supplies shown in this analysis include Metropolitan's SWP Table A and Article 21 supplies. These supplies and their implementation are described in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

Transfers and Exchanges of Supplies from the Delta Watershed

The transfers and exchanges of supplies from the Delta watershed shown in this analysis include supplies from the San Bernardino Valley MWD Program, Yuba River Accord Purchase Program, the San Gabriel Valley MWD Program, Irvine Ranch Water District Storage and Exchange Program, and other generic SWP and Central Valley transfers and exchanges. These programs and their implementation are described in Section 3.2 and Appendix 3 of Metropolitan's UWMP.

A.11.5 2015 UWMP Appendix 11

The information contained in this Appendix 11 is also intended to be a new Appendix 11 attached to Metropolitan's 2015 UWMP consistent with WR P1 subsection (c)(1)(C) (Cal. Code Regs. tit. 23, § 5003). Metropolitan provided notice of the availability of the draft 2020 UWMP (including this Appendix 11 which will also be a new Appendix 11 to its 2015 UWMP) and WSCP and the public hearing to consider adoption of both plans and Appendix 11 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 public review drafts of the 2020 UWMP, Appendix 11 to the 2015 UWMP, and the WSCP were posted prominently on Metropolitan's website, mwdh2o.com, starting February 1, 2021, more than 60 days in advance of the public hearing on April 12, 2021. The notice of availability of the documents was sent to Metropolitan's member agencies, as well as cities and counties in Metropolitan's service area. In addition, a public notice advertising the public hearing in English and Spanish was published in 12 Southern California newspapers. The notification in English language newspapers was published on February 1 and 8, 2021. The notification was published on January 28-30, 2021 and February 1, 4-6, and 8, 2021 in Spanish language newspapers, satisfying the requirement for non-English language notification. Copies of: (1) the notification letter sent to the member agencies, cities and counties in Metropolitan's service area, and (2) the notice published in the newspapers are included in the 2020 UWMP Section 5. Thus, this Appendix 11 to Metropolitan's 2020 UWMP, which was adopted with Metropolitan's 2020 UWMP, will also be recognized and treated as Appendix 11 to Metropolitan's 2015 UWMP.

Metropolitan held the public hearing for the draft 2020 UWMP, draft Appendix 11 to the 2015 UWMP, and draft WSCP on April 12, 2021, at the Board's Water Planning and Stewardship Committee meeting, held online due to COVID-19 concerns. On May 11, 2021, Metropolitan's Board determined that the 2020 UWMP and the WSCP are consistent with the MWD Act and accurately represent the water resources plan for Metropolitan's service area. In addition, Metropolitan's Board determined that Appendix 11 to both the 2015 UWMP and the 2020 UWMP includes 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 Resolutions 9279, 9280, and 9281, the Board adopted the 2020 UWMP, Appendix 11 to the 2015 UWMP, and the WSCP and authorized their submittal to the State of California. Copies of Resolutions 9279, 9280, and 9281 are included in the 2020 UWMP Section 5, and Resolution 9281 for the WSCP is attached to the WSCP as Attachment C.

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2020 URBAN WATER MANAGEMENT PLAN

APPENDIX C

COMPLETED PLAN CHECKLIST

	Wholesale	2020 Guidebook Location	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
Retail	x	Chapter 1	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Chapter 1 Lay Description
	x	Chapter 1	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	Beginning of each Chapter
	x	Section 2.2	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 2.2
	x	Section 2.6	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 2.6
	x	Section 2.6.2	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	Section 2.6.2
	x	Section 2.6, Section 6.1	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Sections 2.6 and 6.1
	x	Section 2.6	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	Section 2.6
	x	Section 3.1	Describe the water supplier service area.	System Description	Section 3.1
	x	Section 3.3	Describe the climate of the service area of the supplier.	System Description	Section 3.3
	x	Section 3.4	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.4
	x	Section 3.4.2	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.4.2
	x	Sections 3.4 and 5.4	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4
	x	Section 3.5	Describe the land uses within the service area.	System Description	Section 3.5
	x	Section 4.2	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2
	x	Section 4.2.4	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.2.4
	x	Section 4.2.6	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	System Water Use	Section 4.2.6
	x	Section 4.2.6	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4.2.6
	x optional	Section 4.3.2.4	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4.3.2
	x optional	Section 4.4	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.4
	x	Section 4.5	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 4.5
	x	Chapter 5	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	Chapter 5
	x	Chapter 5	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Chapter 5
	x	Section 5.1	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	Not applicable

Retail	Wholesale	2020 Guidebook Location	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 5.2	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	Not applicable
x		Section 5.5	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	Sections 5.2, 5.3, and 5.5
x		Section 5.5 and Appendix E	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	Section 5.5
x	x	Sections 6.1 and 6.2	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	Sections 6.1, 6.2, 7.1, and 7.2
x	x	Sections 6.1	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, <i>including changes in supply due to climate change.</i>	System Supplies	Section 6.1
x	x	Section 6.1	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 6.1
x	x	Section 6.1.1	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 6.1.1
x	x	Section 6.2.8	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 6.2.8
x	x	Section 6.2	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2
x	x	Section 6.2.2	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 6.2.2
x	x	Section 6.2.2	Describe the groundwater basin.	System Supplies	Section 6.2.2
x	x	Section 6.2.2	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 6.2.2
x	x	Section 6.2.2.1	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 6.2.2
x	x	Section 6.2.2.4	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 6.2.2
x	x	Section 6.2.2	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 6.2.2
x	x	Section 6.2.7	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.2.7
x	x	Section 6.2.5	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 6.2.5
x	x	Section 6.2.5	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.5	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 6.2.5
x	x	Section 6.2.5	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 6.2.5
x	x	Section 6.2.5	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)	Section 6.2.5
x	x	Section 6.2.5	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.2.5
x	x	Section 6.2.6	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.2.6
x	x	Section 6.2.5	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 6.2.5
x	x	Section 6.2.8, Section 6.3.7	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 6.2.8 and 6.2.9

Retail	Wholesale	2020 Guidebook Location	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.4 and Appendix O	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 6.4
x	x	Section 7.2	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
x	x	Section 7.2.4	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
x	x	Section 7.3	Service Reliability Assessment: Assess the water supply reliability during normal, dry, 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.	Water Supply Reliability Assessment	Section 7.3
x	x	Section 7.3	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
x	x	Section 7.3	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
x	x	Section 7.3	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
x	x	Section 7.3	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
x	x	Section 7.3	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	Section 7.3
x	x	Chapter 8	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Chapter 8
x	x	Chapter 8	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Chapter 8
x	x	Section 8.10	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 8.10
x	x	Section 8.2	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
x	x	Section 8.2	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
x	x	Section 8.3	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
x	x	Section 8.3	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Section 8.3
x	x	Section 8.4	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
x	x	Section 8.4	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Section 8.4.1
x	x	Section 8.4	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Section 8.4.3
x	x	Section 8.4	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 8.4.4
x	x	Section 8.4	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Section 8.4.7
x	x	Section 8.4.6	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Section 8.4.6
x	x	Section 8.5	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

	Wholesale	2020 Guidebook Location	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
Retail	X	Section 8.5 and 8.6	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Sections 8.5 and 8.6
	X	Section 8.6	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Section 8.6
	X	Section 8.7	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Section 8.7
	X	Section 8.7	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Section 8.7
	X	Section 8.7	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 8.7
	X	Section 8.8	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 8.8
	X	Section 8.8	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
	X	Section 8.8	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
	X	Section 8.9	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Section 8.9
	X	Section 8.11	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
	X	Sections 8.12 and 10.4	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 and 10.4
	X	Section 8.12	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 days after adopted the plan.	Water Shortage Contingency Planning	Section 8.12
	X	Sections 9.1 and 9.3	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Not applicable
	X	Sections 9.2 and 9.3	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	Sections 9.2 and 9.3
	X	Chapter 10	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Chapter 10
	X	Section 10.2.1	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
	X	Section 10.4	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
	X	Sections 10.2.2, 10.3, and 10.5	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	Sections 10.2, 10.3, and 10.5
	X	Section 10.2.2	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 10.2.2
	X	Section 10.3.2	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.2
	X	Section 10.4	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3
	X	Section 10.4	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4
	X	Sections 10.4.1 and 10.4.2	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2
	X	Section 10.5	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 10.5

	Wholesale	2020 Guidebook Location	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
Retail	x	Section 10.5	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 10.5
	x	Section 10.6	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	Section 10.6
	x	Section 10.7.2	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Section 10.7.2

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX D

**60 – DAY NOTIFICATION LETTERS
AND PUBLIC HEARING NOTIFICATIONS**



01/14/2021

Mr. Richard J. Bruckner
Director
Los Angeles County Department of Regional Planning - 1390 Hall of Records
320 West Temple Street
Los Angeles, CA 90012

SUBJECT: 2020 Urban Water Management Plan Update

Dear Richard J. Bruckner:

Liberty Utilities Downey is currently in the process of reviewing its Urban Water Management Plan (UWMP) for the upcoming 2020 Update. The Urban Water Management Planning Act requires every urban water supplier, which provides water directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP and periodically update that plan at least once every five years. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. Liberty Utilities Downey is currently in the process of preparing the 2020 UWMP Update.

As an urban water supplier, Liberty Utilities Downey is required pursuant to Section 10620(d)(3) of the California Water Code to coordinate with water management agencies, relevant public agencies, and other water suppliers regarding the preparation of the UWMP. Pursuant to Section 10621(b) of the California Water Code, Liberty Utilities Downey will be reviewing the UWMP and will make amendments or changes, as appropriate. Liberty Utilities Downey invites you to submit comments in anticipation of the development of our 2020 UWMP Update. Comments should be received no later than February 19, 2021, and may be provided via email to Janelle.Rellosa@libertyutilities.com; or, send written comments to:

Liberty Utilities
P.O. Box 7002
Downey, CA 90241

Thank you,

Liberty Utilities
Downey



01/14/2021

City Clerk
City of Artesia
18747 Clarkdale Avenue
Artesia, CA 90701

SUBJECT: 2020 Urban Water Management Plan Update

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Downey, CA 90241

Thank you,

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01/14/2021

City Clerk
City of Bell Gardens
7100 Garfield Avenue
Bell Gardens, CA 90201

SUBJECT: 2020 Urban Water Management Plan Update

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Downey



01/14/2021

City Clerk
City of Bellflower
16600 Civic Center Drive
Bellflower, CA 90706

SUBJECT: 2020 Urban Water Management Plan Update

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P.O. Box 7002
Downey, CA 90241

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Liberty Utilities
Downey



01/14/2021

City Clerk
City of Compton
205 S Willowbrook Avenue
Compton, CA 90220

SUBJECT: 2020 Urban Water Management Plan Update

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P.O. Box 7002
Downey, CA 90241

Thank you,

Liberty Utilities
Downey



01/14/2021

City Clerk
City of Lynwood
11330 Bullis Road
Lynwood, CA 90262

SUBJECT: 2020 Urban Water Management Plan Update

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Liberty Utilities
P.O. Box 7002
Downey, CA 90241

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Liberty Utilities
Downey



01/14/2021

City Clerk
City of Norwalk
12700 Norwalk Boulevard
Norwalk, CA 90650

SUBJECT: 2020 Urban Water Management Plan Update

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Downey, CA 90241

Thank you,

Liberty Utilities
Downey



01/14/2021

City Clerk
City of Santa Fe Springs
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

SUBJECT: 2020 Urban Water Management Plan Update

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P.O. Box 7002
Downey, CA 90241

Thank you,

Liberty Utilities
Downey



01/14/2021

Central Basin Municipal Water District
6252 Telegraph Road
Commerce, CA 90040

SUBJECT: 2020 Urban Water Management Plan Update

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P.O. Box 7002
Downey, CA 90241

Thank you,

Liberty Utilities
Downey

Liberty Utilities (Park Water) Corp.

June 7, 2021

Liberty Park Water
9750 Washburn Rd
Downey CA 90241

Mr. Richard J. Bruckner, Director
Los Angeles County Department of Regional Planning - 1390 Hall of Records
320 West Temple Street
Los Angeles, CA 90012

**SUBJECT: Notice of Public Hearing for
2020 Urban Water Management Plan and
Water Shortage Contingency Plan**

Dear Mr. Richard J. Bruckner,

Liberty Utilities Park Water will hold a PUBLIC HEARING on June 24th for the purposes of adopting its 2020 Urban Water Management Plan and its Water Shortage Contingency Plan. Liberty Utilities Park Water 2020 Urban Water Management Plan incorporates its Water Shortage Contingency Plan.

The 2020 Urban Water Management Plan and Water Shortage Contingency Plan were prepared pursuant to the "Urban Water Management Planning Act" and the California Water Code. The California Department of Water Resources requires every urban water supplier to prepare and adopt an Urban Water Management Plan, including the Water Shortage Contingency Plan, and periodically update the Urban Water Management Plan at least once every five years, in years ending in six and one.

Liberty Utilities Park Water's PUBLIC HEARING will be held on:

Date: Thursday, June 24, 2021

Time: 1:00pm – 2:00pm

Place: Remote video conference via WebEx

The meeting link will be posted on Liberty Utilities Park Water's website at the following address:

<http://libertyutilities.com/parkwater/hearingnotice/>

Liberty Utilities Park Water invites all interested entities to attend and present their comments. A copy of the draft 2020 Urban Water Management Plan and Water Shortage Contingency Plan will be available at Liberty Utilities Park Water's website. Comments must be received no later than 10 a.m. on June 24, 2021, or may be delivered at the time of the hearing. Written comments may be sent via email to Gabriel.Gomez@LibertyUtilities.com or may be mailed to:

Liberty Utilities
Attn: Gabriel Gomez
9750 Washburn Rd
Downey CA 90241

Liberty Utilities (Park Water) Corp.

June 7, 2021

Liberty Park Water
9750 Washburn Rd
Downey CA 90241

City Clerk
City of Artesia
18747 Clarkdale Avenue
Artesia, CA 90701

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Water Shortage Contingency Plan**

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Downey CA 90241

Liberty Utilities (Park Water) Corp.

June 7, 2021

Liberty Park Water
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Downey CA 90241

City Clerk
City of Bell Gardens
7100 Garfield Avenue
Bell Gardens, CA 90201

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Downey CA 90241

Liberty Utilities (Park Water) Corp.

June 7, 2021

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9750 Washburn Rd
Downey CA 90241

City Clerk
City of Compton
205 S Willowbrook Avenue
Compton, CA 90220

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Liberty Utilities (Park Water) Corp.

June 7, 2021

Liberty Park Water
9750 Washburn Rd
Downey CA 90241

City Clerk
City of Lynwood
11330 Bullis Road
Lynwood, CA 90262

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June 7, 2021

Liberty Park Water
9750 Washburn Rd
Downey CA 90241

City Clerk
City of Norwalk
12700 Norwalk Boulevard
Norwalk, CA 90650

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Liberty Utilities (Park Water) Corp.

June 7, 2021

Liberty Park Water
9750 Washburn Rd
Downey CA 90241

City Clerk
City of Santa Fe Springs
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

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June 7, 2021

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9750 Washburn Rd
Downey CA 90241

City Clerk
City of Bellflower
16600 Civic Center Drive
Bellflower, CA 90706

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Liberty Utilities Park Water invites all interested entities to attend and present their comments. A copy of the draft 2020 Urban Water Management Plan and Water Shortage Contingency Plan will be available at Liberty Utilities Park Water's website. Comments must be received no later than 10 a.m. on June 24, 2021, or may be delivered at the time of the hearing. Written comments may be sent via email to Gabriel.Gomez@LibertyUtilities.com or may be mailed to:

Liberty Utilities
Attn: Gabriel Gomez
9750 Washburn Rd
Downey CA 90241

Liberty Utilities (Park Water) Corp.

June 7, 2021

Liberty Park Water
9750 Washburn Rd
Downey CA 90241

Central Basin Municipal Water District
6252 Telegraph Road
Commerce, CA 90040

**SUBJECT: Notice of Public Hearing for
2020 Urban Water Management Plan and
Water Shortage Contingency Plan**

Dear Central Basin Municipal Water District,

Liberty Utilities Park Water will hold a PUBLIC HEARING on June 24th for the purposes of adopting its 2020 Urban Water Management Plan and its Water Shortage Contingency Plan. Liberty Utilities Park Water 2020 Urban Water Management Plan incorporates its Water Shortage Contingency Plan.

The 2020 Urban Water Management Plan and Water Shortage Contingency Plan were prepared pursuant to the “Urban Water Management Planning Act” and the California Water Code. The California Department of Water Resources requires every urban water supplier to prepare and adopt an Urban Water Management Plan, including the Water Shortage Contingency Plan, and periodically update the Urban Water Management Plan at least once every five years, in years ending in six and one.

Liberty Utilities Park Water’s PUBLIC HEARING will be held on:

Date: Thursday, June 24, 2021

Time: 1:00pm – 2:00pm

Place: Remote video conference via WebEx

The meeting link will be posted on Liberty Utilities Park Water's website at the following address:

<http://libertyutilities.com/parkwater/hearingnotice/>

Liberty Utilities Park Water invites all interested entities to attend and present their comments. A copy of the draft 2020 Urban Water Management Plan and Water Shortage Contingency Plan will be available at Liberty Utilities Park Water's website. Comments must be received no later than 10 a.m. on June 24, 2021, or may be delivered at the time of the hearing. Written comments may be sent via email to Gabriel.Gomez@LibertyUtilities.com or may be mailed to:

Liberty Utilities
Attn: Gabriel Gomez
9750 Washburn Rd
Downey CA 90241

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX E

AWWA WATER LOSS AUDIT REPORTS



AWWA Free Water Audit Software: Reporting Worksheet

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Water Audit Report for: Liberty Utilities (Park Water) (1910161, 1910211, 1910021)
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.

WATER SUPPLIED

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

Volume from own sources:	+ ?	7	3,970.080	acre-ft/yr
Water imported:	+ ?	7	5,388.740	acre-ft/yr
Water exported:	+ ?	n/a		acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	acre-ft/yr
+ ?	3	
+ ?	5	
+ ?		

WATER SUPPLIED: **9,358.820** acre-ft/yr

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

AUTHORIZED CONSUMPTION

Billed metered:	+ ?	8	9,043.936	acre-ft/yr
Billed unmetered:	+ ?	10	0.040	acre-ft/yr
Unbilled metered:	+ ?	9	0.000	acre-ft/yr
Unbilled unmetered:	+ ?	5	23.397	acre-ft/yr

Click here: ?
for help using option

Pcnt:	Value:	acre-ft/yr
	23.397	

AUTHORIZED CONSUMPTION: **9,067.373** acre-ft/yr

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

291.447 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? **23.397** acre-ft/yr

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

Customer metering inaccuracies:	+ ?	5	68.342	acre-ft/yr
Systematic data handling errors:	+ ?	5	22.610	acre-ft/yr

Pcnt:	Value:	acre-ft/yr
0.25%		

0.75%		
0.25%	22.610	

Apparent Losses: **114.349** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **177.098** acre-ft/yr

WATER LOSSES: **291.447** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **314.844** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ?	10	254.9	miles
Number of active AND inactive service connections:	+ ?	9	28,311	
Service connection density:	?		111	conn./mile main

Are customer meters typically located at the curbside or property line?

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: + ? 9 72.0 psi

COST DATA

Total annual cost of operating water system:	+ ?	7	\$23,223,745	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	9	\$5.15	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	5	\$1,124.02	\$/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: Volume from own sources

3: Customer metering inaccuracies



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 Click to add a comment

Water Audit Report for: **Liberty Utilities (Park Water) (1910211)**
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.

WATER SUPPLIED

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

Volume from own sources:	<input type="button" value="+"/>	<input type="button" value="9"/>	<input type="text" value="3,640.460"/>	acre-ft/yr
Water imported:	<input type="button" value="+"/>	<input type="button" value="9"/>	<input type="text" value="2,259.960"/>	acre-ft/yr
Water exported:	<input type="button" value="+"/>	<input type="button" value="n/a"/>	<input type="text" value="0.000"/>	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	<input type="button" value="+"/>	<input type="button" value="6"/>	<input type="text" value="4.35%"/>	acre-ft/yr
Value:	<input type="button" value="+"/>	<input type="button" value="6"/>	<input type="text" value="0.37%"/>	acre-ft/yr
	<input type="button" value="+"/>	<input type="button" value="6"/>	<input type="text" value=""/>	acre-ft/yr

WATER SUPPLIED: acre-ft/yr

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

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="text" value="5,533.500"/>	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/>	<input type="button" value="10"/>	<input type="text" value="0.030"/>	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/>	<input type="button" value="10"/>	<input type="text" value="0.000"/>	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="text" value="71.754"/>	acre-ft/yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: acre-ft/yr

Click here:
for help using option buttons below

Pcnt:	<input type="button" value="+"/>	<input type="button" value="1"/>	<input type="text" value="1.25%"/>	acre-ft/yr
Value:	<input type="button" value="+"/>	<input type="button" value="1"/>	<input type="text" value=""/>	acre-ft/yr

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

acre-ft/yr

Apparent Losses

Unauthorized consumption: acre-ft/yr

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

Customer metering inaccuracies:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="text" value="41.815"/>	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/>	<input type="button" value="5"/>	<input type="text" value="13.834"/>	acre-ft/yr

Apparent Losses: acre-ft/yr

Pcnt:	<input type="button" value="+"/>	<input type="button" value="1"/>	<input type="text" value="0.25%"/>	acre-ft/yr
Value:	<input type="button" value="+"/>	<input type="button" value="1"/>	<input type="text" value=""/>	acre-ft/yr

<input type="text" value="0.75%"/>	<input type="button" value="+"/>	<input type="button" value="1"/>	<input type="text" value=""/>	acre-ft/yr
<input type="text" value="0.25%"/>	<input type="button" value="+"/>	<input type="button" value="1"/>	<input type="text" value="13.834"/>	acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

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

WATER LOSSES: acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/>	<input type="button" value="10"/>	<input type="text" value="254.9"/>	miles
Number of <u>active</u> AND <u>inactive</u> service connections:	<input type="button" value="+"/>	<input type="button" value="10"/>	<input type="text" value="16,895"/>	
Service connection density:	<input type="button" value=""/>	<input type="button" value="7"/>	<input type="text" value="66"/>	conn./mile main

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

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: psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/>	<input type="button" value="9"/>	<input type="text" value="\$13,563,826"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/>	<input type="button" value="5"/>	<input type="text" value="\$5.36"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/>	<input type="button" value="8"/>	<input type="text" value="\$821.88"/>	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 79 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: Customer retail unit cost (applied to Apparent Losses)
- 2: Billed metered
- 3: Unauthorized consumption



AWWA Free Water Audit Software: Reporting Worksheet

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Water Audit Report for: Liberty Utilities (Park Water) (1910021)
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.

WATER SUPPLIED

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

Volume from own sources:	+ ? 9	956.750	acre-ft/yr
Water imported:	+ ? 9	1,144.740	acre-ft/yr
Water exported:	+ ? n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	
+ ? 6	1.40%	acre-ft/yr
+ ? 6	0.32%	acre-ft/yr
+ ?		acre-ft/yr

WATER SUPPLIED: **2,084.629** acre-ft/yr

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

AUTHORIZED CONSUMPTION

Billed metered:	+ ? 7	1,934.600	acre-ft/yr
Billed unmetered:	+ ? 10	0.085	acre-ft/yr
Unbilled metered:	+ ? 10	0.000	acre-ft/yr
Unbilled unmetered:	+ ? 5	5.212	acre-ft/yr

AUTHORIZED CONSUMPTION: **1,939.897** acre-ft/yr

Click here: ?
for help using option

Pcnt: Value: 5.212 acre-ft/yr

Use buttons to select percentage of water supplied OR value

Pcnt: Value: 0.25% 4.837 acre-ft/yr

0.75% 4.837 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 5.212 acre-ft/yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+ ? 7	14.619	acre-ft/yr
Systematic data handling errors:	+ ? 5	4.837	acre-ft/yr

Apparent Losses: **24.667** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **120.065** acre-ft/yr

WATER LOSSES: **144.732** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **149.944** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ? 10	254.9	miles
Number of active AND inactive service connections:	+ ? 10	6,959	
Service connection density:	? 27	conn./mile main	

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

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: + ? 9 90.0 psi

COST DATA

Total annual cost of operating water system:	+ ? 9	\$4,925,749	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ? 5	\$5.36	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ? 8	\$821.88	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 79 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: Customer retail unit cost (applied to Apparent Losses)

2: Billed metered

3: Unauthorized consumption



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Water Audit Report for: **Liberty Utilities (Park Water) (1910161)**
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.

WATER SUPPLIED

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

Volume from own sources:	+ ? 9	440.530	acre-ft/yr
Water imported:	+ ? 9	1,113.070	acre-ft/yr
Water exported:	+ ? n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	
+ ? 6	2.21%	acre-ft/yr
+ ? 6	0.49%	acre-ft/yr
+ ?		acre-ft/yr

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

WATER SUPPLIED: **1,538.647** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+ ? 7	1,491.400	acre-ft/yr
Billed unmetered:	+ ? 10	0.040	acre-ft/yr
Unbilled metered:	+ ? 10	0.000	acre-ft/yr
Unbilled unmetered:	+ ?	19.233	acre-ft/yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: **1,510.673** acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt: Value: 1.25% acre-ft/yr

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 5 **3.847** acre-ft/yr

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

Customer metering inaccuracies:	+ ? 7	11.270	acre-ft/yr
Systematic data handling errors:	+ ? 5	3.729	acre-ft/yr

Apparent Losses: **18.845** acre-ft/yr

Pcnt: Value: 0.25% acre-ft/yr

0.75% 3.729 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? **9.129** acre-ft/yr

WATER LOSSES: **27.974** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: ? **47.207** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ? 10	254.9	miles
Number of active AND inactive service connections:	+ ? 10	4,520	
Service connection density:	? 18	18	conn./mile main

Are customer meters typically located at the curbside 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: + ? 9 68.4 psi

COST DATA

Total annual cost of operating water system:	+ ? 9	\$3,635,652	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ? 5	\$5.36	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ? 8	\$821.88	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 79 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: Customer retail unit cost (applied to Apparent Losses)
- 2: Billed metered
- 3: Unauthorized consumption



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+	Click to add a comment

Water Audit Report for: **Liberty Utilities (Park Water) (1910211)**
 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.

WATER SUPPLIED

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

Volume from own sources:	+	?	7	4,518.000	acre-ft/yr
Water imported:	+	?	7	1,606.000	acre-ft/yr
Water exported:	+	?			acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:		
+	?	3	-66.635
+	?	5	
+	?		

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

WATER SUPPLIED: **6,190.635** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+	?	7	5,945.260	acre-ft/yr
Billed unmetered:	+	?	n/a	0.000	acre-ft/yr
Unbilled metered:	+	?	n/a	0.000	acre-ft/yr
Unbilled unmetered:	+	?	5	15.477	acre-ft/yr

AUTHORIZED CONSUMPTION: **5,960.737** acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt:	Value:	
		15.477

Use buttons to select percentage of water supplied
 OR
 value

Pcnt:	Value:	
0.25%		
0.75%		
0.25%		

WATER LOSSES (Water Supplied - Authorized Consumption)

229.898 acre-ft/yr

Apparent Losses

Unauthorized consumption: **15.477** acre-ft/yr
 Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+	?	5	44.926	acre-ft/yr
Systematic data handling errors:	+	?	5	14.863	acre-ft/yr

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

Apparent Losses: **75.266** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **154.632** acre-ft/yr

WATER LOSSES: **229.898** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **245.375** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	9	155.5	miles
Number of active AND inactive service connections:	+	?	9	16,895	
Service connection density:	?			109	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: **79.5** psi

COST DATA

Total annual cost of operating water system:	+	?	10	\$13,245,386	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$5.92	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	3	\$749.70	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 68 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: Volume from own sources

2: Variable production cost (applied to Real Losses)

3: Customer metering inaccuracies



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Water Audit Report for: **Liberty Utilities (Park Water) (1910211)**
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.

WATER SUPPLIED

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

Volume from own sources:	+ ? 7	1,202.000	acre-ft/yr
Water imported:	+ ? 7	920.000	acre-ft/yr
Water exported:	+ ?		acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	acre-ft/yr
+ ? 3	-56.650	acre-ft/yr
+ ? 5		acre-ft/yr
+ ?		acre-ft/yr

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

WATER SUPPLIED: **2,178.650** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+ ? 7	2,091.675	acre-ft/yr
Billed unmetered:	+ ? n/a		acre-ft/yr
Unbilled metered:	+ ? n/a		acre-ft/yr
Unbilled unmetered:	+ ? 5	5.447	acre-ft/yr

AUTHORIZED CONSUMPTION: **2,097.122** acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt:	Value:	acre-ft/yr
	5.447	acre-ft/yr

Use buttons to select percentage of water supplied
OR
value

Pcnt:	Value:	acre-ft/yr
0.25%		acre-ft/yr
0.75%		acre-ft/yr
0.25%		acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

81.528 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? **5.447** acre-ft/yr

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

Customer metering inaccuracies:	+ ? 5	15.806	acre-ft/yr
Systematic data handling errors:	+ ? 5	5.229	acre-ft/yr

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

Apparent Losses: **26.482** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **55.046** acre-ft/yr

WATER LOSSES: **81.528** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **86.975** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ? 9	42.6	miles
Number of active AND inactive service connections:	+ ? 9	6,959	
Service connection density:	+ ?	163	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: + ? 9 85.0 psi

COST DATA

Total annual cost of operating water system:	+ ? 10	\$4,706,378	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ? 9	\$5.92	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ? 3	\$749.70	\$/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: Variable production cost (applied to Real Losses)

2: Volume from own sources

3: Water imported



AWWA Free Water Audit Software: Reporting Worksheet

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?	Click to access definition
+	Click to add a comment

Water Audit Report for: Liberty Utilities (Park Water) (1910161)
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.

WATER SUPPLIED

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

Volume from own sources:	+	?	7	1,121.000	acre-ft/yr
Water imported:	+	?	7	454.000	acre-ft/yr
Water exported:	+	?			acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	acre-ft/yr			
+	?	3	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	20.640	acre-ft/yr
+	?	5	<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>		acre-ft/yr
+	?		<input type="radio"/> <input type="radio"/> <input type="radio"/>		acre-ft/yr

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

WATER SUPPLIED: 1,554.360 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+	?	7	1,532.140	acre-ft/yr
Billed unmetered:	+	?	n/a		acre-ft/yr
Unbilled metered:	+	?	n/a		acre-ft/yr
Unbilled unmetered:	+	?	5	3.886	acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt:	Value:	acre-ft/yr
	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	3.886

Use buttons to select percentage of water supplied
OR
value

AUTHORIZED CONSUMPTION: 1,536.026 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

18.334 acre-ft/yr

Apparent Losses

Unauthorized consumption: 3.886 acre-ft/yr

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

Customer metering inaccuracies:	+	?	5	11.578	acre-ft/yr
Systematic data handling errors:	+	?	5	3.830	acre-ft/yr

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

Apparent Losses: 19.294 acre-ft/yr

Pcnt:	Value:	acre-ft/yr
0.25%	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	

0.75%	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	
0.25%	<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	

Check input values; APPARENT LOSSES should be less than WATER LOSSES

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: -0.960 acre-ft/yr

WATER LOSSES: 18.334 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 22.220 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	9	69.7	miles
Number of <u>active AND inactive</u> service connections:	+	?	9	4,520	
Service connection density:	?			65	conn./mile main

Are customer meters typically located at the curbside or property line? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line: 0 (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: 68.4 psi

COST DATA

Total annual cost of operating water system:	+	?	10	\$3,467,718	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$5.92	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	3	\$749.70	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 68 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: Volume from own sources

2: Variable production cost (applied to Real Losses)

3: Customer metering inaccuracies



AWWA Free Water Audit Software: Reporting Worksheet

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?	Click to access definition
+	Click to add a comment

Water Audit Report for: Liberty Utilities (Park Water) (1910211 - Bellflower Norwalk)
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.

WATER SUPPLIED

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

Volume from own sources:	+	?	8	4,823.230	acre-ft/yr
Water imported:	+	?	8	784.470	acre-ft/yr
Water exported:	+	?	n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

	Pcnt:	Value:	
+	?	6	-39.932
+	?	6	1.490
+	?		

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

WATER SUPPLIED: 5,646.142 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+	?	8	5,545.000	acre-ft/yr
Billed unmetered:	+	?	7	0.463	acre-ft/yr
Unbilled metered:	+	?	n/a		acre-ft/yr
Unbilled unmetered:	+	?	6	1.128	acre-ft/yr

Click here: ?
for help using option

Pcnt:	Value:	
0.25%	1.128	acre-ft/yr

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

AUTHORIZED CONSUMPTION: 5,546.591 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

99.551 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? 14.115 acre-ft/yr

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

Customer metering inaccuracies:	+	?	8	65.247	acre-ft/yr
Systematic data handling errors:	+	?	8	13.863	acre-ft/yr

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

Apparent Losses: ? 93.225 acre-ft/yr

Pcnt:	Value:	
0.25%		acre-ft/yr

1.16%		acre-ft/yr
0.25%		acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 6.326 acre-ft/yr

WATER LOSSES: 99.551 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: ? 100.679 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	9	155.5	miles
Number of <u>active AND inactive</u> service connections:	+	?	9	16,936	
Service connection density:	?			109	conn./mile main

Are customer meters typically located at the curbside 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: + ? 6 79.5 psi

COST DATA

Total annual cost of operating water system:	+	?	10	\$12,641,586	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$5.71	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	8	\$669.62	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 78 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: Volume from own sources

2: Unauthorized consumption

3: Systematic data handling errors



AWWA Free Water Audit Software: Reporting Worksheet

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?	Click to access definition
+	Click to add a comment

Water Audit Report for: Liberty Utilities (Park Water) (1910021- Compton Willowbrook)
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.

WATER SUPPLIED

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

Volume from own sources:	+ ?	8	2,203.460	acre-ft/yr
Water imported:	+ ?	8	24.920	acre-ft/yr
Water exported:	+ ?	7	171.000	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	acre-ft/yr
+ ? 6	-64.140	acre-ft/yr
+ ? 6	0.030	acre-ft/yr
+ ? 5	0.000	acre-ft/yr

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

WATER SUPPLIED: **2,121.490** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+ ?	8	1,992.000	acre-ft/yr
Billed unmetered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled metered:	+ ?	n/a	0.000	acre-ft/yr
Unbilled unmetered:	+ ?	6	45.215	acre-ft/yr

Unbilled Unmetered volume entered is greater than the recommended default value

AUTHORIZED CONSUMPTION: **2,037.215** acre-ft/yr

Click here: ? for help using option buttons below

Pcnt: Value: acre-ft/yr

45.215

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

84.275 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? **5.304** acre-ft/yr
 Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+ ?	8	-1.791	acre-ft/yr
Systematic data handling errors:	+ ?	8	4.980	acre-ft/yr

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

Apparent Losses: **8.493** acre-ft/yr

Pcnt: Value: acre-ft/yr

0.25%

-0.09%

0.25%

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **75.782** acre-ft/yr

WATER LOSSES: **84.275** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **129.490** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ?	9	64.0	miles
Number of active AND inactive service connections:	+ ?	9	7,071	
Service connection density:	?		110	conn./mile main

Are customer meters typically located at the curbstop or property line? (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: + ? 6 **85.0** psi

COST DATA

Total annual cost of operating water system:	+ ?	10	\$5,023,482	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	9	\$5.71	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	8	\$669.62	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 79 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: Volume from own sources
- 2: Unauthorized consumption
- 3: Systematic data handling errors



AWWA Free Water Audit Software: Reporting Worksheet

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?	Click to access definition
+	Click to add a comment

Water Audit Report for: **Liberty Utilities (Park Water) (1910161 Lynwood - Rancho Dominguez)**
 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.

WATER SUPPLIED

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

Volume from own sources:	+	?	8	1,479.280	acre-ft/yr
Water imported:	+	?	8	36.120	acre-ft/yr
Water exported:	+	?	8	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:		
+	?	6	51.960 acre-ft/yr
+	?	6	-0.130 acre-ft/yr
+	?		

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

WATER SUPPLIED: **1,463.570** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+	?	8	1,469.000	acre-ft/yr
Billed unmetered:	+	?	7	0.006	acre-ft/yr
Unbilled metered:	+	?	n/a		acre-ft/yr
Unbilled unmetered:	+	?	6	0.059	acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt:	Value:	
		0.059 acre-ft/yr

Use buttons to select percentage of water supplied
 OR
 value

AUTHORIZED CONSUMPTION: **1,469.065** acre-ft/yr

Check input values; WATER SUPPLIED should be greater than AUTHORIZED CONSUMPTION

WATER LOSSES (Water Supplied - Authorized Consumption)

-5.495 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? **3.659** acre-ft/yr

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

Customer metering inaccuracies:	+	?	8	-5.226	acre-ft/yr
Systematic data handling errors:	+	?	8	3.673	acre-ft/yr

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

Apparent Losses: **2.106** acre-ft/yr

Check input values; APPARENT LOSSES should be less than WATER LOSSES

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? **-7.601** acre-ft/yr

WATER LOSSES: **-5.495** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **-5.436** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	9	41.0	miles
Number of active AND inactive service connections:	+	?	9	4,535	
Service connection density:	?			111	conn./mile main

Are customer meters typically located at the curbside or property line? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line: + ?

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

Average operating pressure: + ? 6 68.4 psi

COST DATA

Total annual cost of operating water system:	+	?	10	\$3,416,197	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$5.71	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	8	\$669.62	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 78 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: Volume from own sources

2: Unauthorized consumption

3: Systematic data handling errors

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX F

CLIMATE CHANGE CONSIDERATIONS (CAL- ADAPT DATA)

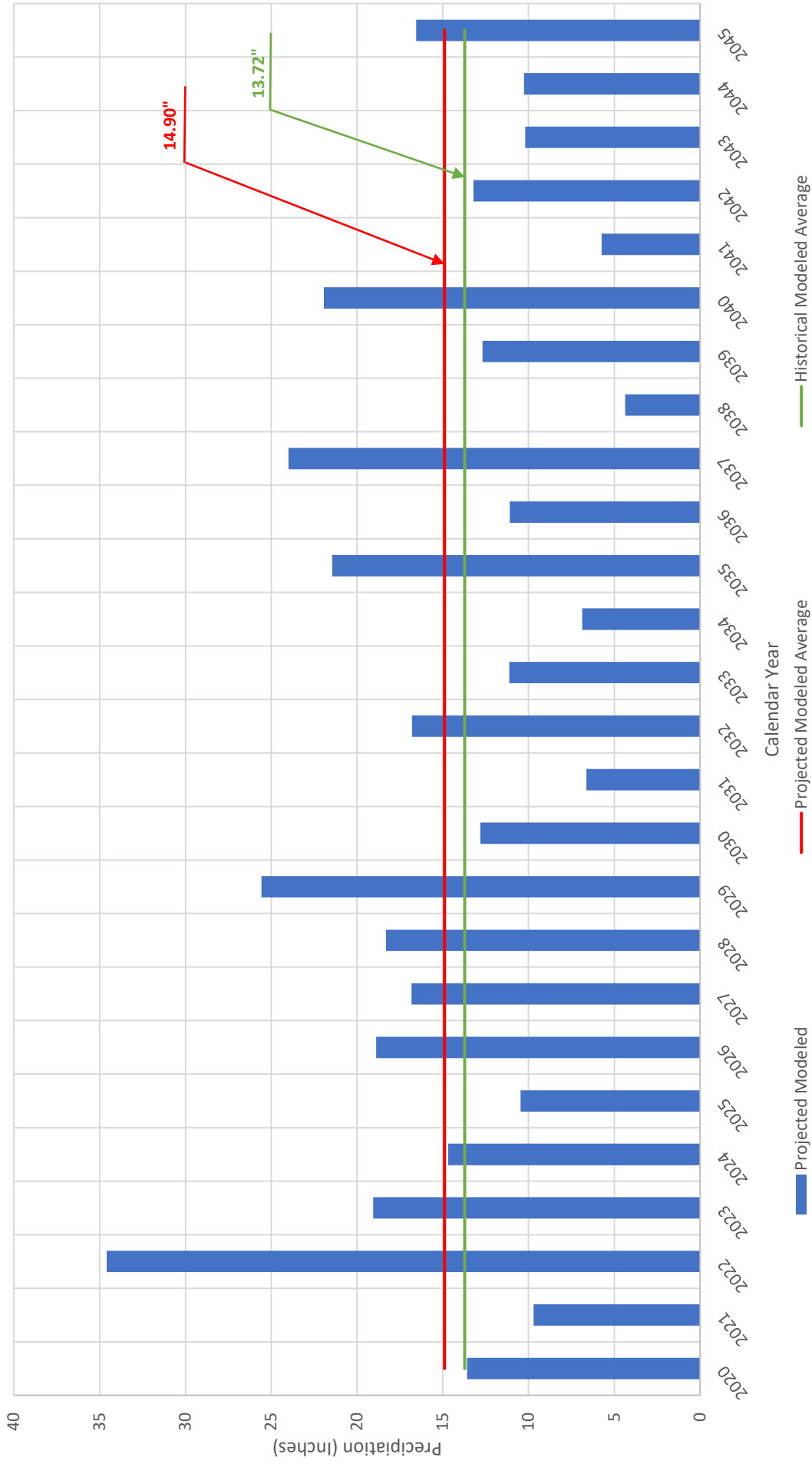
CENTRAL BASIN

MODELED ANNUAL AVERAGE PRECIPITATION

CAL-ADAPT METHOD: RCP 4.5 (CANESM2)

CAL-ADAPT DATA

Central Basin Modeled Annual Average Precipitation Cal-Adapt Method: RCP 4.5 (CanESM2)



Data Source: Cal-Adapt

Notes:

Projected Modeled Average includes modeled years 2020 through 2045

Historical Modeled Average includes modeled years 1950 through 2019

Cal-Adapt defines the general circulation model (GCM) CanESM2 as an "average simulation"

Cal-Adapt defines RCP 4.5 as a scenario in which emissions peak around 2040, then decline

Cal-Adapt
Annual Averages Tool - Precipitation
Central Basin

location User Defined Boundary - Central Basin
climate variable Precipitation
units inches
scenario rcp45

Projected Modeled Average: 14.89874 [inches]
Historical Modeled Average: 13.72240 [inches]

name	date	Year	Historical Average	Modeled Average	value
CanESM2	Sun Jan 01 1950 00:00:00 GMT-0800 (Pacific Standard Time)	1950			2.711204
CanESM2	Mon Jan 01 1951 00:00:00 GMT-0800 (Pacific Standard Time)	1951			14.92971
CanESM2	Tue Jan 01 1952 00:00:00 GMT-0800 (Pacific Standard Time)	1952			14.37643
CanESM2	Thu Jan 01 1953 00:00:00 GMT-0800 (Pacific Standard Time)	1953			10.62691
CanESM2	Fri Jan 01 1954 00:00:00 GMT-0800 (Pacific Standard Time)	1954			16.24152
CanESM2	Sat Jan 01 1955 00:00:00 GMT-0800 (Pacific Standard Time)	1955			23.99039
CanESM2	Sun Jan 01 1956 00:00:00 GMT-0800 (Pacific Standard Time)	1956			7.088746
CanESM2	Tue Jan 01 1957 00:00:00 GMT-0800 (Pacific Standard Time)	1957			10.47703
CanESM2	Wed Jan 01 1958 00:00:00 GMT-0800 (Pacific Standard Time)	1958			4.384411
CanESM2	Thu Jan 01 1959 00:00:00 GMT-0800 (Pacific Standard Time)	1959			8.905023
CanESM2	Fri Jan 01 1960 00:00:00 GMT-0800 (Pacific Standard Time)	1960			13.33926
CanESM2	Sun Jan 01 1961 00:00:00 GMT-0800 (Pacific Standard Time)	1961			13.29385
CanESM2	Mon Jan 01 1962 00:00:00 GMT-0800 (Pacific Standard Time)	1962			22.25729
CanESM2	Tue Jan 01 1963 00:00:00 GMT-0800 (Pacific Standard Time)	1963			5.046277
CanESM2	Wed Jan 01 1964 00:00:00 GMT-0800 (Pacific Standard Time)	1964			23.65362
CanESM2	Fri Jan 01 1965 00:00:00 GMT-0800 (Pacific Standard Time)	1965			29.53302
CanESM2	Sat Jan 01 1966 00:00:00 GMT-0800 (Pacific Standard Time)	1966			11.89462
CanESM2	Sun Jan 01 1967 00:00:00 GMT-0800 (Pacific Standard Time)	1967			17.65118
CanESM2	Mon Jan 01 1968 00:00:00 GMT-0800 (Pacific Standard Time)	1968			16.5368
CanESM2	Wed Jan 01 1969 00:00:00 GMT-0800 (Pacific Standard Time)	1969			31.08076
CanESM2	Thu Jan 01 1970 00:00:00 GMT-0800 (Pacific Standard Time)	1970			11.10033
CanESM2	Fri Jan 01 1971 00:00:00 GMT-0800 (Pacific Standard Time)	1971			3.89031
CanESM2	Sat Jan 01 1972 00:00:00 GMT-0800 (Pacific Standard Time)	1972			11.90623
CanESM2	Mon Jan 01 1973 00:00:00 GMT-0800 (Pacific Standard Time)	1973			11.35168
CanESM2	Tue Jan 01 1974 00:00:00 GMT-0800 (Pacific Standard Time)	1974			27.6406
CanESM2	Wed Jan 01 1975 00:00:00 GMT-0800 (Pacific Standard Time)	1975			7.240355
CanESM2	Thu Jan 01 1976 00:00:00 GMT-0800 (Pacific Standard Time)	1976			13.72431
CanESM2	Sat Jan 01 1977 00:00:00 GMT-0800 (Pacific Standard Time)	1977			16.3902
CanESM2	Sun Jan 01 1978 00:00:00 GMT-0800 (Pacific Standard Time)	1978			8.943045
CanESM2	Mon Jan 01 1979 00:00:00 GMT-0800 (Pacific Standard Time)	1979			8.955363
CanESM2	Tue Jan 01 1980 00:00:00 GMT-0800 (Pacific Standard Time)	1980			5.315283
CanESM2	Thu Jan 01 1981 00:00:00 GMT-0800 (Pacific Standard Time)	1981			12.0593
CanESM2	Fri Jan 01 1982 00:00:00 GMT-0800 (Pacific Standard Time)	1982			21.42766
CanESM2	Sat Jan 01 1983 00:00:00 GMT-0800 (Pacific Standard Time)	1983			12.02122
CanESM2	Sun Jan 01 1984 00:00:00 GMT-0800 (Pacific Standard Time)	1984			14.33201
CanESM2	Tue Jan 01 1985 00:00:00 GMT-0800 (Pacific Standard Time)	1985			33.68452
CanESM2	Wed Jan 01 1986 00:00:00 GMT-0800 (Pacific Standard Time)	1986			6.287982
CanESM2	Thu Jan 01 1987 00:00:00 GMT-0800 (Pacific Standard Time)	1987			15.10777
CanESM2	Fri Jan 01 1988 00:00:00 GMT-0800 (Pacific Standard Time)	1988			9.260901
CanESM2	Sun Jan 01 1989 00:00:00 GMT-0800 (Pacific Standard Time)	1989			15.46279
CanESM2	Mon Jan 01 1990 00:00:00 GMT-0800 (Pacific Standard Time)	1990			16.02319
CanESM2	Tue Jan 01 1991 00:00:00 GMT-0800 (Pacific Standard Time)	1991			18.35758
CanESM2	Wed Jan 01 1992 00:00:00 GMT-0800 (Pacific Standard Time)	1992			15.34088
CanESM2	Fri Jan 01 1993 00:00:00 GMT-0800 (Pacific Standard Time)	1993			11.07439
CanESM2	Sat Jan 01 1994 00:00:00 GMT-0800 (Pacific Standard Time)	1994			13.77059
CanESM2	Sun Jan 01 1995 00:00:00 GMT-0800 (Pacific Standard Time)	1995			11.83516
CanESM2	Mon Jan 01 1996 00:00:00 GMT-0800 (Pacific Standard Time)	1996			12.02629
CanESM2	Wed Jan 01 1997 00:00:00 GMT-0800 (Pacific Standard Time)	1997			40.54302
CanESM2	Thu Jan 01 1998 00:00:00 GMT-0800 (Pacific Standard Time)	1998			7.581085
CanESM2	Fri Jan 01 1999 00:00:00 GMT-0800 (Pacific Standard Time)	1999			9.345686
CanESM2	Sat Jan 01 2000 00:00:00 GMT-0800 (Pacific Standard Time)	2000			6.411961
CanESM2	Mon Jan 01 2001 00:00:00 GMT-0800 (Pacific Standard Time)	2001			8.649922

Cal-Adapt
Annual Averages Tool - Precipitation
Central Basin

location User Defined Boundary - Central Basin
climate variable Precipitation
units inches
scenario rcp45

Projected Modeled Average: 14.89874 [inches]
Historical Modeled Average: 13.72240 [inches]

name	date	Year	Historical Average	Modeled Average	value
CanESM2	Tue Jan 01 2002 00:00:00 GMT-0800 (Pacific Standard Time)	2002			11.65704
CanESM2	Wed Jan 01 2003 00:00:00 GMT-0800 (Pacific Standard Time)	2003			13.22306
CanESM2	Thu Jan 01 2004 00:00:00 GMT-0800 (Pacific Standard Time)	2004			14.98838
CanESM2	Sat Jan 01 2005 00:00:00 GMT-0800 (Pacific Standard Time)	2005			23.47014
CanESM2	Sun Jan 01 2006 00:00:00 GMT-0800 (Pacific Standard Time)	2006			11.89425
CanESM2	Mon Jan 01 2007 00:00:00 GMT-0800 (Pacific Standard Time)	2007			4.495376
CanESM2	Tue Jan 01 2008 00:00:00 GMT-0800 (Pacific Standard Time)	2008			11.29432
CanESM2	Thu Jan 01 2009 00:00:00 GMT-0800 (Pacific Standard Time)	2009			10.8637
CanESM2	Fri Jan 01 2010 00:00:00 GMT-0800 (Pacific Standard Time)	2010			11.74419
CanESM2	Sat Jan 01 2011 00:00:00 GMT-0800 (Pacific Standard Time)	2011			16.35504
CanESM2	Sun Jan 01 2012 00:00:00 GMT-0800 (Pacific Standard Time)	2012			6.021612
CanESM2	Tue Jan 01 2013 00:00:00 GMT-0800 (Pacific Standard Time)	2013			7.790606
CanESM2	Wed Jan 01 2014 00:00:00 GMT-0800 (Pacific Standard Time)	2014			6.588845
CanESM2	Thu Jan 01 2015 00:00:00 GMT-0800 (Pacific Standard Time)	2015			21.14658
CanESM2	Fri Jan 01 2016 00:00:00 GMT-0800 (Pacific Standard Time)	2016			29.24212
CanESM2	Sun Jan 01 2017 00:00:00 GMT-0800 (Pacific Standard Time)	2017			9.844625
CanESM2	Mon Jan 01 2018 00:00:00 GMT-0800 (Pacific Standard Time)	2018			5.430142
CanESM2	Tue Jan 01 2019 00:00:00 GMT-0800 (Pacific Standard Time)	2019	13.72239645		9.438077
CanESM2	Wed Jan 01 2020 00:00:00 GMT-0800 (Pacific Standard Time)	2020	13.72239645	14.89873563	13.58247
CanESM2	Fri Jan 01 2021 00:00:00 GMT-0800 (Pacific Standard Time)	2021	13.72239645	14.89873563	9.707081
CanESM2	Sat Jan 01 2022 00:00:00 GMT-0800 (Pacific Standard Time)	2022	13.72239645	14.89873563	34.58837
CanESM2	Sun Jan 01 2023 00:00:00 GMT-0800 (Pacific Standard Time)	2023	13.72239645	14.89873563	19.0544
CanESM2	Mon Jan 01 2024 00:00:00 GMT-0800 (Pacific Standard Time)	2024	13.72239645	14.89873563	14.68272
CanESM2	Wed Jan 01 2025 00:00:00 GMT-0800 (Pacific Standard Time)	2025	13.72239645	14.89873563	10.47002
CanESM2	Thu Jan 01 2026 00:00:00 GMT-0800 (Pacific Standard Time)	2026	13.72239645	14.89873563	18.87796
CanESM2	Fri Jan 01 2027 00:00:00 GMT-0800 (Pacific Standard Time)	2027	13.72239645	14.89873563	16.822
CanESM2	Sat Jan 01 2028 00:00:00 GMT-0800 (Pacific Standard Time)	2028	13.72239645	14.89873563	18.30698
CanESM2	Mon Jan 01 2029 00:00:00 GMT-0800 (Pacific Standard Time)	2029	13.72239645	14.89873563	25.56606
CanESM2	Tue Jan 01 2030 00:00:00 GMT-0800 (Pacific Standard Time)	2030	13.72239645	14.89873563	12.81422
CanESM2	Wed Jan 01 2031 00:00:00 GMT-0800 (Pacific Standard Time)	2031	13.72239645	14.89873563	6.631485
CanESM2	Thu Jan 01 2032 00:00:00 GMT-0800 (Pacific Standard Time)	2032	13.72239645	14.89873563	16.79226
CanESM2	Sat Jan 01 2033 00:00:00 GMT-0800 (Pacific Standard Time)	2033	13.72239645	14.89873563	11.12471
CanESM2	Sun Jan 01 2034 00:00:00 GMT-0800 (Pacific Standard Time)	2034	13.72239645	14.89873563	6.871288
CanESM2	Mon Jan 01 2035 00:00:00 GMT-0800 (Pacific Standard Time)	2035	13.72239645	14.89873563	21.4413
CanESM2	Tue Jan 01 2036 00:00:00 GMT-0800 (Pacific Standard Time)	2036	13.72239645	14.89873563	11.10212
CanESM2	Thu Jan 01 2037 00:00:00 GMT-0800 (Pacific Standard Time)	2037	13.72239645	14.89873563	23.99351
CanESM2	Fri Jan 01 2038 00:00:00 GMT-0800 (Pacific Standard Time)	2038	13.72239645	14.89873563	4.368184
CanESM2	Sat Jan 01 2039 00:00:00 GMT-0800 (Pacific Standard Time)	2039	13.72239645	14.89873563	12.68419
CanESM2	Sun Jan 01 2040 00:00:00 GMT-0800 (Pacific Standard Time)	2040	13.72239645	14.89873563	21.93329
CanESM2	Tue Jan 01 2041 00:00:00 GMT-0800 (Pacific Standard Time)	2041	13.72239645	14.89873563	5.741362
CanESM2	Wed Jan 01 2042 00:00:00 GMT-0800 (Pacific Standard Time)	2042	13.72239645	14.89873563	13.20755
CanESM2	Thu Jan 01 2043 00:00:00 GMT-0800 (Pacific Standard Time)	2043	13.72239645	14.89873563	10.18665
CanESM2	Fri Jan 01 2044 00:00:00 GMT-0800 (Pacific Standard Time)	2044	13.72239645	14.89873563	10.26452
CanESM2	Sun Jan 01 2045 00:00:00 GMT-0800 (Pacific Standard Time)	2045	13.72239645	14.89873563	16.55242
CanESM2	Mon Jan 01 2046 00:00:00 GMT-0800 (Pacific Standard Time)	2046	13.72239645		27.77441
CanESM2	Tue Jan 01 2047 00:00:00 GMT-0800 (Pacific Standard Time)	2047	13.72239645		22.46368
CanESM2	Wed Jan 01 2048 00:00:00 GMT-0800 (Pacific Standard Time)	2048	13.72239645		18.88688
CanESM2	Fri Jan 01 2049 00:00:00 GMT-0800 (Pacific Standard Time)	2049	13.72239645		8.667589
CanESM2	Sat Jan 01 2050 00:00:00 GMT-0800 (Pacific Standard Time)	2050	13.72239645		10.00292
CanESM2	Sun Jan 01 2051 00:00:00 GMT-0800 (Pacific Standard Time)	2051	13.72239645		7.326474
CanESM2	Mon Jan 01 2052 00:00:00 GMT-0800 (Pacific Standard Time)	2052	13.72239645		27.14731
CanESM2	Wed Jan 01 2053 00:00:00 GMT-0800 (Pacific Standard Time)	2053	13.72239645		9.759648

Cal-Adapt
Annual Averages Tool - Precipitation
Central Basin

location User Defined Boundary - Central Basin
climate variable Precipitation
units inches
scenario rcp45

Projected Modeled Average: 14.89874 [inches]
Historical Modeled Average: 13.72240 [inches]

name	date	Year	Historical Average	Modeled Average	value
CanESM2	Thu Jan 01 2054 00:00:00 GMT-0800 (Pacific Standard Time)	2054	13.72239645		12.40571
CanESM2	Fri Jan 01 2055 00:00:00 GMT-0800 (Pacific Standard Time)	2055	13.72239645		9.147796
CanESM2	Sat Jan 01 2056 00:00:00 GMT-0800 (Pacific Standard Time)	2056	13.72239645		15.57772
CanESM2	Mon Jan 01 2057 00:00:00 GMT-0800 (Pacific Standard Time)	2057	13.72239645		12.66258
CanESM2	Tue Jan 01 2058 00:00:00 GMT-0800 (Pacific Standard Time)	2058	13.72239645		7.271203
CanESM2	Wed Jan 01 2059 00:00:00 GMT-0800 (Pacific Standard Time)	2059	13.72239645		29.27046
CanESM2	Thu Jan 01 2060 00:00:00 GMT-0800 (Pacific Standard Time)	2060	13.72239645		27.70644
CanESM2	Sat Jan 01 2061 00:00:00 GMT-0800 (Pacific Standard Time)	2061	13.72239645		4.950572
CanESM2	Sun Jan 01 2062 00:00:00 GMT-0800 (Pacific Standard Time)	2062	13.72239645		11.41258
CanESM2	Mon Jan 01 2063 00:00:00 GMT-0800 (Pacific Standard Time)	2063	13.72239645		3.654642
CanESM2	Tue Jan 01 2064 00:00:00 GMT-0800 (Pacific Standard Time)	2064	13.72239645		8.214566
CanESM2	Thu Jan 01 2065 00:00:00 GMT-0800 (Pacific Standard Time)	2065	13.72239645		11.61876
CanESM2	Fri Jan 01 2066 00:00:00 GMT-0800 (Pacific Standard Time)	2066	13.72239645		14.80172
CanESM2	Sat Jan 01 2067 00:00:00 GMT-0800 (Pacific Standard Time)	2067	13.72239645		19.90516
CanESM2	Sun Jan 01 2068 00:00:00 GMT-0800 (Pacific Standard Time)	2068	13.72239645		13.34654
CanESM2	Tue Jan 01 2069 00:00:00 GMT-0800 (Pacific Standard Time)	2069	13.72239645		26.78298
CanESM2	Wed Jan 01 2070 00:00:00 GMT-0800 (Pacific Standard Time)	2070	13.72239645		24.21188
CanESM2	Thu Jan 01 2071 00:00:00 GMT-0800 (Pacific Standard Time)	2071	13.72239645		18.31411
CanESM2	Fri Jan 01 2072 00:00:00 GMT-0800 (Pacific Standard Time)	2072	13.72239645		6.002166
CanESM2	Sun Jan 01 2073 00:00:00 GMT-0800 (Pacific Standard Time)	2073	13.72239645		25.56517
CanESM2	Mon Jan 01 2074 00:00:00 GMT-0800 (Pacific Standard Time)	2074	13.72239645		15.05161
CanESM2	Tue Jan 01 2075 00:00:00 GMT-0800 (Pacific Standard Time)	2075	13.72239645		20.92709
CanESM2	Wed Jan 01 2076 00:00:00 GMT-0800 (Pacific Standard Time)	2076	13.72239645		11.00945
CanESM2	Fri Jan 01 2077 00:00:00 GMT-0800 (Pacific Standard Time)	2077	13.72239645		22.11288
CanESM2	Sat Jan 01 2078 00:00:00 GMT-0800 (Pacific Standard Time)	2078	13.72239645		18.92326
CanESM2	Sun Jan 01 2079 00:00:00 GMT-0800 (Pacific Standard Time)	2079	13.72239645		20.65069
CanESM2	Mon Jan 01 2080 00:00:00 GMT-0800 (Pacific Standard Time)	2080	13.72239645		41.49389
CanESM2	Wed Jan 01 2081 00:00:00 GMT-0800 (Pacific Standard Time)	2081	13.72239645		16.41931
CanESM2	Thu Jan 01 2082 00:00:00 GMT-0800 (Pacific Standard Time)	2082	13.72239645		14.65818
CanESM2	Fri Jan 01 2083 00:00:00 GMT-0800 (Pacific Standard Time)	2083	13.72239645		13.02577
CanESM2	Sat Jan 01 2084 00:00:00 GMT-0800 (Pacific Standard Time)	2084	13.72239645		16.81547
CanESM2	Mon Jan 01 2085 00:00:00 GMT-0800 (Pacific Standard Time)	2085	13.72239645		7.584033
CanESM2	Tue Jan 01 2086 00:00:00 GMT-0800 (Pacific Standard Time)	2086	13.72239645		21.69217
CanESM2	Wed Jan 01 2087 00:00:00 GMT-0800 (Pacific Standard Time)	2087	13.72239645		8.520626
CanESM2	Thu Jan 01 2088 00:00:00 GMT-0800 (Pacific Standard Time)	2088	13.72239645		33.79725
CanESM2	Sat Jan 01 2089 00:00:00 GMT-0800 (Pacific Standard Time)	2089	13.72239645		15.19317
CanESM2	Sun Jan 01 2090 00:00:00 GMT-0800 (Pacific Standard Time)	2090	13.72239645		10.93645
CanESM2	Mon Jan 01 2091 00:00:00 GMT-0800 (Pacific Standard Time)	2091	13.72239645		4.858918
CanESM2	Tue Jan 01 2092 00:00:00 GMT-0800 (Pacific Standard Time)	2092	13.72239645		4.077083
CanESM2	Thu Jan 01 2093 00:00:00 GMT-0800 (Pacific Standard Time)	2093	13.72239645		26.28714
CanESM2	Fri Jan 01 2094 00:00:00 GMT-0800 (Pacific Standard Time)	2094	13.72239645		13.79538
CanESM2	Sat Jan 01 2095 00:00:00 GMT-0800 (Pacific Standard Time)	2095	13.72239645		6.434525
CanESM2	Sun Jan 01 2096 00:00:00 GMT-0800 (Pacific Standard Time)	2096	13.72239645		9.720349
CanESM2	Tue Jan 01 2097 00:00:00 GMT-0800 (Pacific Standard Time)	2097	13.72239645		15.93864
CanESM2	Wed Jan 01 2098 00:00:00 GMT-0800 (Pacific Standard Time)	2098	13.72239645		20.52491
CanESM2	Thu Jan 01 2099 00:00:00 GMT-0800 (Pacific Standard Time)	2099	13.72239645		9.708835
CanESM2	Fri Jan 01 2100 00:00:00 GMT-0800 (Pacific Standard Time)	2100	13.72239645		14.42276

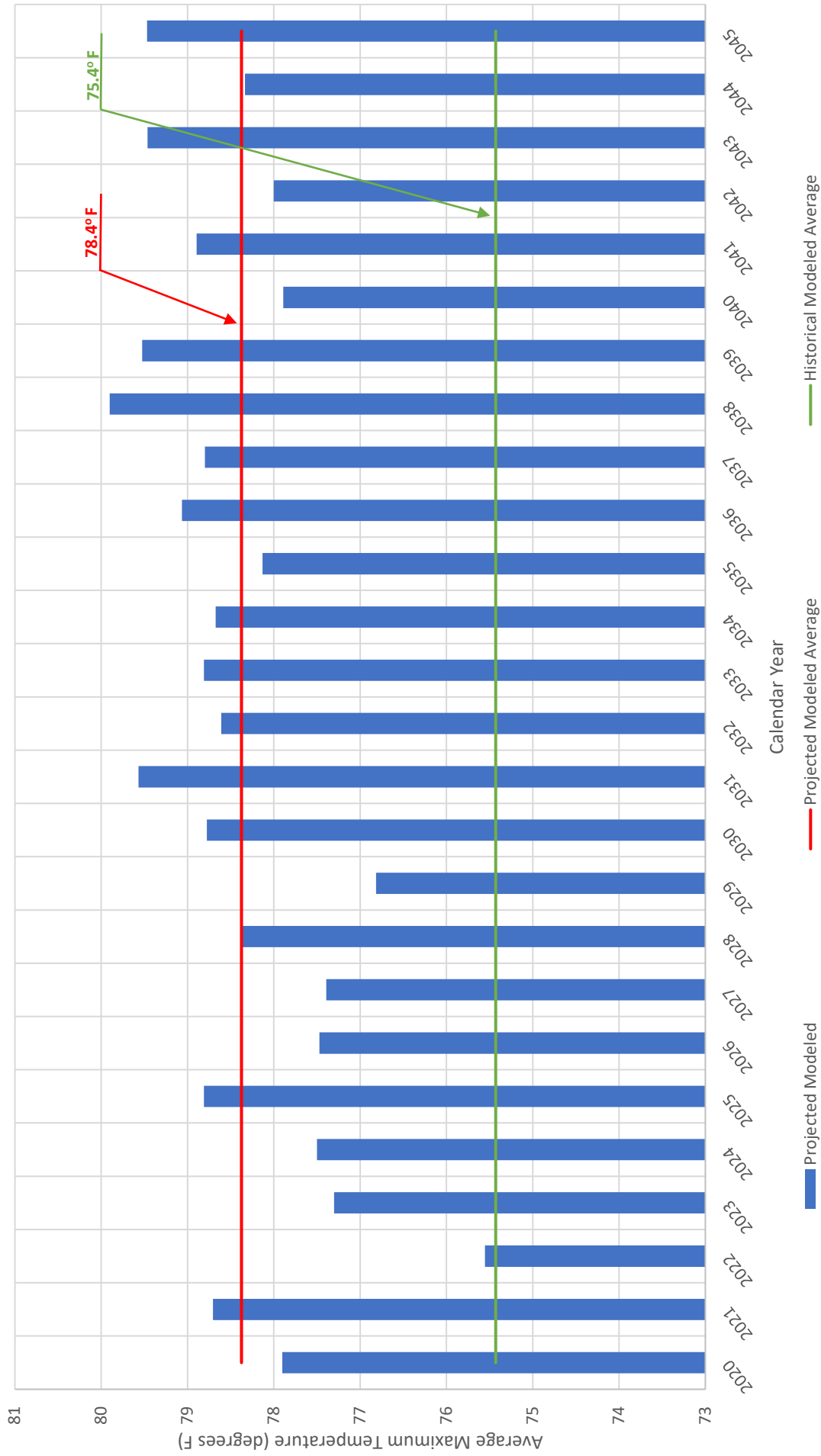
CENTRAL BASIN

MODELED ANNUAL AVERAGE TEMPERATURE

CAL-ADAPT METHOD: RCP 4.5 (CANESM2)

CAL-ADAPT DATA

Central Basin
 Modeled Annual Average Maximum Temperature
 Cal-Adapt Method: RCP 4.5 (CanESM2)



Data Source: Cal-Adapt

Notes:
 Projected Modeled Average includes modeled years 2020 through 2045
 Historical Modeled Average includes modeled years 1950 through 2019
 Cal-Adapt defines the general circulation model (GCM) CanESM2 as an "average simulation"
 Cal-Adapt defines RCP 4.5 as a scenario in which emissions peak around 2040, then decline

Cal-Adapt
Annual Averages Tool - Maximum Temperature
Central Basin

location User Defined Boundary - Central Basin
climate variable Maximum Temperature
units °F
scenario rcp45

Projected Modeled Average: 78.37471 °F
Historical Modeled Average: 75.42910 °F

name	date	Year	Historical Average	Modeled Average	value
CanESM2	Sun Jan 01 1950 00:00:00 GMT-0800 (Pacific Standard Time)	1950			76.81594
CanESM2	Mon Jan 01 1951 00:00:00 GMT-0800 (Pacific Standard Time)	1951			75.09323
CanESM2	Tue Jan 01 1952 00:00:00 GMT-0800 (Pacific Standard Time)	1952			74.11544
CanESM2	Thu Jan 01 1953 00:00:00 GMT-0800 (Pacific Standard Time)	1953			75.0258
CanESM2	Fri Jan 01 1954 00:00:00 GMT-0800 (Pacific Standard Time)	1954			74.06848
CanESM2	Sat Jan 01 1955 00:00:00 GMT-0800 (Pacific Standard Time)	1955			73.66977
CanESM2	Sun Jan 01 1956 00:00:00 GMT-0800 (Pacific Standard Time)	1956			75.06849
CanESM2	Tue Jan 01 1957 00:00:00 GMT-0800 (Pacific Standard Time)	1957			75.02455
CanESM2	Wed Jan 01 1958 00:00:00 GMT-0800 (Pacific Standard Time)	1958			74.71398
CanESM2	Thu Jan 01 1959 00:00:00 GMT-0800 (Pacific Standard Time)	1959			75.93509
CanESM2	Fri Jan 01 1960 00:00:00 GMT-0800 (Pacific Standard Time)	1960			75.27767
CanESM2	Sun Jan 01 1961 00:00:00 GMT-0800 (Pacific Standard Time)	1961			73.89659
CanESM2	Mon Jan 01 1962 00:00:00 GMT-0800 (Pacific Standard Time)	1962			74.88831
CanESM2	Tue Jan 01 1963 00:00:00 GMT-0800 (Pacific Standard Time)	1963			77.5504
CanESM2	Wed Jan 01 1964 00:00:00 GMT-0800 (Pacific Standard Time)	1964			73.73211
CanESM2	Fri Jan 01 1965 00:00:00 GMT-0800 (Pacific Standard Time)	1965			72.11022
CanESM2	Sat Jan 01 1966 00:00:00 GMT-0800 (Pacific Standard Time)	1966			73.73795
CanESM2	Sun Jan 01 1967 00:00:00 GMT-0800 (Pacific Standard Time)	1967			74.92674
CanESM2	Mon Jan 01 1968 00:00:00 GMT-0800 (Pacific Standard Time)	1968			74.39023
CanESM2	Wed Jan 01 1969 00:00:00 GMT-0800 (Pacific Standard Time)	1969			73.83777
CanESM2	Thu Jan 01 1970 00:00:00 GMT-0800 (Pacific Standard Time)	1970			73.03439
CanESM2	Fri Jan 01 1971 00:00:00 GMT-0800 (Pacific Standard Time)	1971			74.74292
CanESM2	Sat Jan 01 1972 00:00:00 GMT-0800 (Pacific Standard Time)	1972			74.89177
CanESM2	Mon Jan 01 1973 00:00:00 GMT-0800 (Pacific Standard Time)	1973			74.89842
CanESM2	Tue Jan 01 1974 00:00:00 GMT-0800 (Pacific Standard Time)	1974			75.40034
CanESM2	Wed Jan 01 1975 00:00:00 GMT-0800 (Pacific Standard Time)	1975			76.61719
CanESM2	Thu Jan 01 1976 00:00:00 GMT-0800 (Pacific Standard Time)	1976			74.83677
CanESM2	Sat Jan 01 1977 00:00:00 GMT-0800 (Pacific Standard Time)	1977			74.29179
CanESM2	Sun Jan 01 1978 00:00:00 GMT-0800 (Pacific Standard Time)	1978			76.03504
CanESM2	Mon Jan 01 1979 00:00:00 GMT-0800 (Pacific Standard Time)	1979			76.29205
CanESM2	Tue Jan 01 1980 00:00:00 GMT-0800 (Pacific Standard Time)	1980			77.65762
CanESM2	Thu Jan 01 1981 00:00:00 GMT-0800 (Pacific Standard Time)	1981			77.00924
CanESM2	Fri Jan 01 1982 00:00:00 GMT-0800 (Pacific Standard Time)	1982			73.78987
CanESM2	Sat Jan 01 1983 00:00:00 GMT-0800 (Pacific Standard Time)	1983			74.44761
CanESM2	Sun Jan 01 1984 00:00:00 GMT-0800 (Pacific Standard Time)	1984			73.79973
CanESM2	Tue Jan 01 1985 00:00:00 GMT-0800 (Pacific Standard Time)	1985			73.29404
CanESM2	Wed Jan 01 1986 00:00:00 GMT-0800 (Pacific Standard Time)	1986			74.73086
CanESM2	Thu Jan 01 1987 00:00:00 GMT-0800 (Pacific Standard Time)	1987			73.88843
CanESM2	Fri Jan 01 1988 00:00:00 GMT-0800 (Pacific Standard Time)	1988			74.50882
CanESM2	Sun Jan 01 1989 00:00:00 GMT-0800 (Pacific Standard Time)	1989			74.04036
CanESM2	Mon Jan 01 1990 00:00:00 GMT-0800 (Pacific Standard Time)	1990			74.5839
CanESM2	Tue Jan 01 1991 00:00:00 GMT-0800 (Pacific Standard Time)	1991			75.46996
CanESM2	Wed Jan 01 1992 00:00:00 GMT-0800 (Pacific Standard Time)	1992			73.32562
CanESM2	Fri Jan 01 1993 00:00:00 GMT-0800 (Pacific Standard Time)	1993			76.37235
CanESM2	Sat Jan 01 1994 00:00:00 GMT-0800 (Pacific Standard Time)	1994			73.36906
CanESM2	Sun Jan 01 1995 00:00:00 GMT-0800 (Pacific Standard Time)	1995			76.05676
CanESM2	Mon Jan 01 1996 00:00:00 GMT-0800 (Pacific Standard Time)	1996			76.1869
CanESM2	Wed Jan 01 1997 00:00:00 GMT-0800 (Pacific Standard Time)	1997			74.65371
CanESM2	Thu Jan 01 1998 00:00:00 GMT-0800 (Pacific Standard Time)	1998			76.05054
CanESM2	Fri Jan 01 1999 00:00:00 GMT-0800 (Pacific Standard Time)	1999			76.954
CanESM2	Sat Jan 01 2000 00:00:00 GMT-0800 (Pacific Standard Time)	2000			76.5939
CanESM2	Mon Jan 01 2001 00:00:00 GMT-0800 (Pacific Standard Time)	2001			76.75888

Cal-Adapt
Annual Averages Tool - Maximum Temperature
Central Basin

location User Defined Boundary - Central Basin
climate variable Maximum Temperature
units °F
scenario rcp45

Projected Modeled Average: 78.37471 °F
Historical Modeled Average: 75.42910 °F

name	date	Year	Historical Average	Modeled Average	value
CanESM2	Tue Jan 01 2002 00:00:00 GMT-0800 (Pacific Standard Time)	2002			76.45095
CanESM2	Wed Jan 01 2003 00:00:00 GMT-0800 (Pacific Standard Time)	2003			75.01004
CanESM2	Thu Jan 01 2004 00:00:00 GMT-0800 (Pacific Standard Time)	2004			76.18596
CanESM2	Sat Jan 01 2005 00:00:00 GMT-0800 (Pacific Standard Time)	2005			76.06153
CanESM2	Sun Jan 01 2006 00:00:00 GMT-0800 (Pacific Standard Time)	2006			75.81518
CanESM2	Mon Jan 01 2007 00:00:00 GMT-0800 (Pacific Standard Time)	2007			76.53652
CanESM2	Tue Jan 01 2008 00:00:00 GMT-0800 (Pacific Standard Time)	2008			76.90854
CanESM2	Thu Jan 01 2009 00:00:00 GMT-0800 (Pacific Standard Time)	2009			77.60979
CanESM2	Fri Jan 01 2010 00:00:00 GMT-0800 (Pacific Standard Time)	2010			76.91934
CanESM2	Sat Jan 01 2011 00:00:00 GMT-0800 (Pacific Standard Time)	2011			77.10655
CanESM2	Sun Jan 01 2012 00:00:00 GMT-0800 (Pacific Standard Time)	2012			77.90654
CanESM2	Tue Jan 01 2013 00:00:00 GMT-0800 (Pacific Standard Time)	2013			78.77252
CanESM2	Wed Jan 01 2014 00:00:00 GMT-0800 (Pacific Standard Time)	2014			76.24993
CanESM2	Thu Jan 01 2015 00:00:00 GMT-0800 (Pacific Standard Time)	2015			76.18709
CanESM2	Fri Jan 01 2016 00:00:00 GMT-0800 (Pacific Standard Time)	2016			75.22148
CanESM2	Sun Jan 01 2017 00:00:00 GMT-0800 (Pacific Standard Time)	2017			76.63658
CanESM2	Mon Jan 01 2018 00:00:00 GMT-0800 (Pacific Standard Time)	2018			78.54419
CanESM2	Tue Jan 01 2019 00:00:00 GMT-0800 (Pacific Standard Time)	2019	75.42910037		77.45271
CanESM2	Wed Jan 01 2020 00:00:00 GMT-0800 (Pacific Standard Time)	2020	75.42910037	78.37470886	77.90284
CanESM2	Fri Jan 01 2021 00:00:00 GMT-0800 (Pacific Standard Time)	2021	75.42910037	78.37470886	78.70459
CanESM2	Sat Jan 01 2022 00:00:00 GMT-0800 (Pacific Standard Time)	2022	75.42910037	78.37470886	75.55427
CanESM2	Sun Jan 01 2023 00:00:00 GMT-0800 (Pacific Standard Time)	2023	75.42910037	78.37470886	77.30179
CanESM2	Mon Jan 01 2024 00:00:00 GMT-0800 (Pacific Standard Time)	2024	75.42910037	78.37470886	77.49998
CanESM2	Wed Jan 01 2025 00:00:00 GMT-0800 (Pacific Standard Time)	2025	75.42910037	78.37470886	78.8105
CanESM2	Thu Jan 01 2026 00:00:00 GMT-0800 (Pacific Standard Time)	2026	75.42910037	78.37470886	77.47173
CanESM2	Fri Jan 01 2027 00:00:00 GMT-0800 (Pacific Standard Time)	2027	75.42910037	78.37470886	77.39326
CanESM2	Sat Jan 01 2028 00:00:00 GMT-0800 (Pacific Standard Time)	2028	75.42910037	78.37470886	78.37676
CanESM2	Mon Jan 01 2029 00:00:00 GMT-0800 (Pacific Standard Time)	2029	75.42910037	78.37470886	76.81463
CanESM2	Tue Jan 01 2030 00:00:00 GMT-0800 (Pacific Standard Time)	2030	75.42910037	78.37470886	78.77666
CanESM2	Wed Jan 01 2031 00:00:00 GMT-0800 (Pacific Standard Time)	2031	75.42910037	78.37470886	79.56799
CanESM2	Thu Jan 01 2032 00:00:00 GMT-0800 (Pacific Standard Time)	2032	75.42910037	78.37470886	78.60872
CanESM2	Sat Jan 01 2033 00:00:00 GMT-0800 (Pacific Standard Time)	2033	75.42910037	78.37470886	78.80861
CanESM2	Sun Jan 01 2034 00:00:00 GMT-0800 (Pacific Standard Time)	2034	75.42910037	78.37470886	78.67489
CanESM2	Mon Jan 01 2035 00:00:00 GMT-0800 (Pacific Standard Time)	2035	75.42910037	78.37470886	78.12972
CanESM2	Tue Jan 01 2036 00:00:00 GMT-0800 (Pacific Standard Time)	2036	75.42910037	78.37470886	79.06538
CanESM2	Thu Jan 01 2037 00:00:00 GMT-0800 (Pacific Standard Time)	2037	75.42910037	78.37470886	78.7997
CanESM2	Fri Jan 01 2038 00:00:00 GMT-0800 (Pacific Standard Time)	2038	75.42910037	78.37470886	79.90191
CanESM2	Sat Jan 01 2039 00:00:00 GMT-0800 (Pacific Standard Time)	2039	75.42910037	78.37470886	79.52668
CanESM2	Sun Jan 01 2040 00:00:00 GMT-0800 (Pacific Standard Time)	2040	75.42910037	78.37470886	77.88959
CanESM2	Tue Jan 01 2041 00:00:00 GMT-0800 (Pacific Standard Time)	2041	75.42910037	78.37470886	78.89424
CanESM2	Wed Jan 01 2042 00:00:00 GMT-0800 (Pacific Standard Time)	2042	75.42910037	78.37470886	78.00215
CanESM2	Thu Jan 01 2043 00:00:00 GMT-0800 (Pacific Standard Time)	2043	75.42910037	78.37470886	79.46227
CanESM2	Fri Jan 01 2044 00:00:00 GMT-0800 (Pacific Standard Time)	2044	75.42910037	78.37470886	78.33426
CanESM2	Sun Jan 01 2045 00:00:00 GMT-0800 (Pacific Standard Time)	2045	75.42910037	78.37470886	79.4693
CanESM2	Mon Jan 01 2046 00:00:00 GMT-0800 (Pacific Standard Time)	2046			78.21366
CanESM2	Tue Jan 01 2047 00:00:00 GMT-0800 (Pacific Standard Time)	2047			78.16745
CanESM2	Wed Jan 01 2048 00:00:00 GMT-0800 (Pacific Standard Time)	2048			79.00869
CanESM2	Fri Jan 01 2049 00:00:00 GMT-0800 (Pacific Standard Time)	2049			78.76172
CanESM2	Sat Jan 01 2050 00:00:00 GMT-0800 (Pacific Standard Time)	2050			79.95276
CanESM2	Sun Jan 01 2051 00:00:00 GMT-0800 (Pacific Standard Time)	2051			79.6668
CanESM2	Mon Jan 01 2052 00:00:00 GMT-0800 (Pacific Standard Time)	2052			78.20725
CanESM2	Wed Jan 01 2053 00:00:00 GMT-0800 (Pacific Standard Time)	2053			79.77849

Cal-Adapt
Annual Averages Tool - Maximum Temperature
Central Basin

location User Defined Boundary - Central Basin
climate variable Maximum Temperature
units °F
scenario rcp45

Projected Modeled Average: 78.37471 °F
Historical Modeled Average: 75.42910 °F

name	date	Year	Historical Average	Modeled Average	value
CanESM2	Thu Jan 01 2054 00:00:00 GMT-0800 (Pacific Standard Time)	2054			81.20495
CanESM2	Fri Jan 01 2055 00:00:00 GMT-0800 (Pacific Standard Time)	2055			82.21394
CanESM2	Sat Jan 01 2056 00:00:00 GMT-0800 (Pacific Standard Time)	2056			79.87422
CanESM2	Mon Jan 01 2057 00:00:00 GMT-0800 (Pacific Standard Time)	2057			79.48531
CanESM2	Tue Jan 01 2058 00:00:00 GMT-0800 (Pacific Standard Time)	2058			81.88786
CanESM2	Wed Jan 01 2059 00:00:00 GMT-0800 (Pacific Standard Time)	2059			79.8483
CanESM2	Thu Jan 01 2060 00:00:00 GMT-0800 (Pacific Standard Time)	2060			78.93825
CanESM2	Sat Jan 01 2061 00:00:00 GMT-0800 (Pacific Standard Time)	2061			80.80398
CanESM2	Sun Jan 01 2062 00:00:00 GMT-0800 (Pacific Standard Time)	2062			80.77498
CanESM2	Mon Jan 01 2063 00:00:00 GMT-0800 (Pacific Standard Time)	2063			81.62168
CanESM2	Tue Jan 01 2064 00:00:00 GMT-0800 (Pacific Standard Time)	2064			81.41727
CanESM2	Thu Jan 01 2065 00:00:00 GMT-0800 (Pacific Standard Time)	2065			79.64433
CanESM2	Fri Jan 01 2066 00:00:00 GMT-0800 (Pacific Standard Time)	2066			79.12803
CanESM2	Sat Jan 01 2067 00:00:00 GMT-0800 (Pacific Standard Time)	2067			77.56873
CanESM2	Sun Jan 01 2068 00:00:00 GMT-0800 (Pacific Standard Time)	2068			78.93649
CanESM2	Tue Jan 01 2069 00:00:00 GMT-0800 (Pacific Standard Time)	2069			79.5317
CanESM2	Wed Jan 01 2070 00:00:00 GMT-0800 (Pacific Standard Time)	2070			79.32315
CanESM2	Thu Jan 01 2071 00:00:00 GMT-0800 (Pacific Standard Time)	2071			79.38442
CanESM2	Fri Jan 01 2072 00:00:00 GMT-0800 (Pacific Standard Time)	2072			81.95296
CanESM2	Sun Jan 01 2073 00:00:00 GMT-0800 (Pacific Standard Time)	2073			79.15277
CanESM2	Mon Jan 01 2074 00:00:00 GMT-0800 (Pacific Standard Time)	2074			82.33441
CanESM2	Tue Jan 01 2075 00:00:00 GMT-0800 (Pacific Standard Time)	2075			80.22528
CanESM2	Wed Jan 01 2076 00:00:00 GMT-0800 (Pacific Standard Time)	2076			80.37602
CanESM2	Fri Jan 01 2077 00:00:00 GMT-0800 (Pacific Standard Time)	2077			81.16308
CanESM2	Sat Jan 01 2078 00:00:00 GMT-0800 (Pacific Standard Time)	2078			79.65826
CanESM2	Sun Jan 01 2079 00:00:00 GMT-0800 (Pacific Standard Time)	2079			81.26578
CanESM2	Mon Jan 01 2080 00:00:00 GMT-0800 (Pacific Standard Time)	2080			80.30891
CanESM2	Wed Jan 01 2081 00:00:00 GMT-0800 (Pacific Standard Time)	2081			80.40226
CanESM2	Thu Jan 01 2082 00:00:00 GMT-0800 (Pacific Standard Time)	2082			81.18511
CanESM2	Fri Jan 01 2083 00:00:00 GMT-0800 (Pacific Standard Time)	2083			79.49623
CanESM2	Sat Jan 01 2084 00:00:00 GMT-0800 (Pacific Standard Time)	2084			80.14512
CanESM2	Mon Jan 01 2085 00:00:00 GMT-0800 (Pacific Standard Time)	2085			80.17983
CanESM2	Tue Jan 01 2086 00:00:00 GMT-0800 (Pacific Standard Time)	2086			80.42222
CanESM2	Wed Jan 01 2087 00:00:00 GMT-0800 (Pacific Standard Time)	2087			81.76029
CanESM2	Thu Jan 01 2088 00:00:00 GMT-0800 (Pacific Standard Time)	2088			80.45757
CanESM2	Sat Jan 01 2089 00:00:00 GMT-0800 (Pacific Standard Time)	2089			80.29346
CanESM2	Sun Jan 01 2090 00:00:00 GMT-0800 (Pacific Standard Time)	2090			79.77905
CanESM2	Mon Jan 01 2091 00:00:00 GMT-0800 (Pacific Standard Time)	2091			79.51293
CanESM2	Tue Jan 01 2092 00:00:00 GMT-0800 (Pacific Standard Time)	2092			80.75489
CanESM2	Thu Jan 01 2093 00:00:00 GMT-0800 (Pacific Standard Time)	2093			79.90386
CanESM2	Fri Jan 01 2094 00:00:00 GMT-0800 (Pacific Standard Time)	2094			78.46119
CanESM2	Sat Jan 01 2095 00:00:00 GMT-0800 (Pacific Standard Time)	2095			80.46391
CanESM2	Sun Jan 01 2096 00:00:00 GMT-0800 (Pacific Standard Time)	2096			80.02276
CanESM2	Tue Jan 01 2097 00:00:00 GMT-0800 (Pacific Standard Time)	2097			80.06407
CanESM2	Wed Jan 01 2098 00:00:00 GMT-0800 (Pacific Standard Time)	2098			79.7292
CanESM2	Thu Jan 01 2099 00:00:00 GMT-0800 (Pacific Standard Time)	2099			80.91749
CanESM2	Fri Jan 01 2100 00:00:00 GMT-0800 (Pacific Standard Time)	2100			82.13603

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX G

SB X7-7 VERIFICATION FORM

APPENDIX E – SB X7-7 VERIFICATION FORM

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	12,807	Acre Feet
	2008 total volume of delivered recycled water	336	Acre Feet
	2008 recycled water as a percent of total deliveries	2.62%	Percent
	Number of years in baseline period ¹	10	Years
	Year beginning baseline period range	1998	
	Year ending baseline period range ²	2007	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range ³	2007	
<p>¹If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.</p>			
<p>²The ending year must be between December 31, 2004 and December 31, 2010.</p>			
<p>³The ending year must be between December 31, 2007 and December 31, 2010.</p>			

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
<input checked="" type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input checked="" type="checkbox"/>	4. Other DWR recommends pre-review
NOTES: This method was reviewed and approved by Gwen Huff at DWR 1/6/2016.	

SB X7-7 Table 3: Service Area Population

Year		Population
10 to 15 Year Baseline Population		
Year 1	1998	115,993
Year 2	1999	117,583
Year 3	2000	119,172
Year 4	2001	119,492
Year 5	2002	119,812
Year 6	2003	120,132
Year 7	2004	120,452
Year 8	2005	120,772
Year 9	2006	121,092
Year 10	2007	121,412
5 Year Baseline Population		
Year 1	2003	120,132
Year 2	2004	120,452
Year 3	2005	120,772
Year 4	2006	121,092
Year 5	2007	121,412
2015 Compliance Year Population		
2015		126,637

Notes: In the 2010 UWMP, "[p]opulation estimates and projections from 2010 onward were calculated using a growth rate determined from Department of Finance (DOF) data." 2010 population was determined using 2010 census info in 2014 while developing a water use efficiency plan; this 2010 population estimate of 122,372 is based on a GIS analysis of 2010 census blocks data and the service area population-determining methodology outlined in the California State Water Resources Control Board's Instructions for Estimating Residential Gallons Per Capita per Day. Liberty Park Water's 2015 population estimate is determined using the 2010 population value and Liberty's 2010 UWMP reported growth rate based on estimates and projections from 2001-2035 onward determined from Department of Finance (DOF) 2010 reported data. According to Liberty's 2010 UWMP, the service area population is estimated to grow 19 percent by 2040. The process for determining Liberty's 2010 population is further explained in Appendix M.

SB X7-7 Table 4: Annual Gross Water Use *

	Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>Fm SB X7-7 Table(s) 4-A</i>	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>Fm SB X7-7 Table 4-B</i>	Water Delivered for Agricultural Use	Process Water <i>Fm SB X7-7 Table(s) 4-D</i>	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1998	12950.98	0	0	0	0	0	12,951
Year 2	1999	13541.26	0	0	0	0	0	13,541
Year 3	2000	13092.14	0	0	0	0	0	13,092
Year 4	2001	13151.26	0	0	0	0	0	13,151
Year 5	2002	14031.08	0	0	0	0	0	14,031
Year 6	2003	13308.27	0	0	0	0	0	13,308
Year 7	2004	14005.42	0	0	0	0	0	14,005
Year 8	2005	13389.15	0	0	0	0	0	13,389
Year 9	2006	13447.07	0	0	0	0	0	13,447
Year 10	2007	12810.69	0	0	0	0	0	12,811
10 - 15 year baseline average gross water use								13,373
5 Year Baseline - Gross Water Use								
Year 1	2003	13,308	0	0	0	0	0	13,308
Year 2	2004	14,005	0	0	0	0	0	14,005
Year 3	2005	13,389	0	0	0	0	0	13,389
Year 4	2006	13,447	0	0	0	0	0	13,447
Year 5	2007	12,811	0	0	0	0	0	12,811
5 year baseline average gross water use								13,392
2015 Compliance Year - Gross Water Use								
	2015	9,579	0	0	0	0	0	9,579
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source		Groundwater		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>		Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	1,762	0	1,762
Year 2	1999	1,849	0	1,849
Year 3	2000	1,797	0	1,797
Year 4	2001	1,663	0	1,663
Year 5	2002	1,552	0	1,552
Year 6	2003	1,464	0	1,464
Year 7	2004	1,598	0	1,598
Year 8	2005	1,509	0	1,509
Year 9	2006	1,482	0	1,482
Year 10	2007	1,479	0	1,479
5 Year Baseline - Water into Distribution System				
Year 1	2003	1,464	0	1,464
Year 2	2004	1,598	0	1,598
Year 3	2005	1,509	0	1,509
Year 4	2006	1,482	0	1,482
Year 5	2007	1,479	0	1,479
2015 Compliance Year - Water into Distribution System				
	2015	3,520	0	3,520
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source		Imported Water		
This water source is:				
<input type="checkbox"/>	The supplier's own water source			
<input checked="" type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>		Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	11,189	0	11,189
Year 2	1999	11,692	0	11,692
Year 3	2000	11,295	0	11,295
Year 4	2001	11,488	0	11,488
Year 5	2002	12,480	0	12,480
Year 6	2003	11,844	0	11,844
Year 7	2004	12,408	0	12,408
Year 8	2005	11,880	0	11,880
Year 9	2006	11,965	0	11,965
Year 10	2007	11,332	0	11,332
5 Year Baseline - Water into Distribution System				
Year 1	2003	11,844	0	11,844
Year 2	2004	12,408	0	12,408
Year 3	2005	11,880	0	11,880
Year 4	2006	11,965	0	11,965
Year 5	2007	11,332	0	11,332
2015 Compliance Year - Water into Distribution System				
	2015	6,059	0	6,059
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES: Purchased imported water supplies are provided by CBMWD, a MWD member agency. MWD acquires water from the Colorado River and the SWP and distributes treated and untreated water directly to its 26 member agencies.				

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1998	115,993	12,951	100
Year 2	1999	117,583	13,541	103
Year 3	2000	119,172	13,092	98
Year 4	2001	119,492	13,151	98
Year 5	2002	119,812	14,031	105
Year 6	2003	120,132	13,308	99
Year 7	2004	120,452	14,005	104
Year 8	2005	120,772	13,389	99
Year 9	2006	121,092	13,447	99
Year 10	2007	121,412	12,811	94
10-15 Year Average Baseline GPCD				99.8
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2003	120,132	13,308	99
Year 2	2004	120,452	14,005	104
Year 3	2005	120,772	13,389	99
Year 4	2006	121,092	13,447	99
Year 5	2007	121,412	12,811	94
5 Year Average Baseline GPCD				99.0
2015 Compliance Year GPCD				
2015		126,637	9,579	68

SB X7-7 Table 6: Gallons per Capita per Day Summary From Table SB X7-7 Table 5	
10-15 Year Baseline GPCD	100
5 Year Baseline GPCD	99
2015 Compliance Year GPCD	68

SB X7-7 Table 7: 2020 Target Method

Select Only One

Target Method		Supporting Documentation
<input type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input checked="" type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator

SB X7-7 Table 7-A: Target Method 1

20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
100	80

SB X7-7 Table 7-E: Target Method 3

Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
<input type="checkbox"/>		North Coast	137	130
<input type="checkbox"/>		North Lahontan	173	164
<input type="checkbox"/>		Sacramento River	176	167
<input type="checkbox"/>		San Francisco Bay	131	124
<input type="checkbox"/>		San Joaquin River	174	165
<input type="checkbox"/>		Central Coast	123	117
<input type="checkbox"/>		Tulare Lake	188	179
<input type="checkbox"/>		South Lahontan	170	162
<input checked="" type="checkbox"/>	100%	South Coast	149	142
<input type="checkbox"/>		Colorado River	211	200
<p align="center">Target <i>(If more than one region is selected, this value is calculated.)</i></p>				<p align="center">142</p>

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target

5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target*	Calculated 2020 Target <i>Fm Appropriate Target Table</i>	Confirmed 2020 Target
99	N/A	142	142

* Maximum 2020 Target is 95% of the 5 Year Baseline GPCD

SB X7-7 Table 8: 2015 Interim Target GPCD

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
142	99.8	121

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					Adjusted 2015 GPCD	2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments				
68	121	0	0	0	0	68	68	YES	

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX H

SB X7-7 2020 COMPLIANCE FORM

SB X7-7 2020 Compliance Form

The SB X7-7 2020 Compliance Form is for the calculation of 2020 compliance only. All retail suppliers must complete the SB X7-7 Compliance Form. Baseline and target calculations are done in the SB X 7-7 Verification Form.

The SB X7-7 Verification Form is for the calculation of baselines and targets and is a separate workbook from the SB X7-7 2020 Compliance Form.

Most Suppliers will have completed the SB X7-7 Verification Form with their 2015 UWMP and do not need to complete this form again in 2020. See Chapter 5 Section 5.3 of the UWMP Guidebook for more information regarding which Suppliers must, or may, complete the SB X7-7 Verification Form for their 2020 UWMP. 2020 compliance calculations are done in the SB X7-7 2020 Compliance Form.

WUE Data Portal Entry Exceptions

The data from the tables below will not be entered into WUE Data Portal tables. These tables will be submitted as separate uploads, in Excel, to WUE Data Portal.

Process Water Deduction

SB X7-7 tables 4-C, 4-C.1, 4-C.2, 4-C.3, 4-C.4 and 4-D

A supplier that will use the process water deduction will complete the appropriate tables in Excel, submit them as a separate upload to the WUE Data Portal, and include them in its UWMP.

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)	
<input type="checkbox"/>	1. Department of Finance (DOF) or American Community Survey (ACS)
<input type="checkbox"/>	2. Persons-per-Connection Method
<input checked="" type="checkbox"/>	3. DWR Population Tool
<input type="checkbox"/>	4. Other DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: 2020 Service Area Population

2020 Compliance Year Population

2020	132,691
-------------	---------

NOTES:

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use*	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	10,972			-		-	10,972

* 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:

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		Central Basin Groundwater	
This water source is (check one) :			
<input checked="" type="checkbox"/>	The supplier's own water source		
<input type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	5,782	-	5,782
¹ <i>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.</i>			
² <i>Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>			
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		Central Basin MWD Imported Water	
This water source is (check one) :			
<input type="checkbox"/>	The supplier's own water source		
<input checked="" type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	5,190		5,190
¹ <i>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.</i>			
² <i>Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>			
NOTES:			

SB X7-7 Table 4-B: 2020 Indirect Recycled Water Use Deduction (For use only by agencies that are deducting indirect recycled water)

2020 Compliance Year	2020 Surface Reservoir Augmentation				2020 Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System	
	Volume Discharged from Reservoir for Distribution System Delivery ¹	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/Treatment Loss ¹	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility ^{1,2}	Transmission/Treatment Losses ¹		Recycled Volume Entering Distribution System from Groundwater Recharge
			-		-			-	-

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 Suppliers will provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.

--

SB X7-7 Table 4-C: 2020 Process Water Deduction Eligibility
(For use only by agencies that are deducting process water) Choose Only One

<input type="checkbox"/>	Criteria 1- Industrial water use is equal to or greater than 12% of gross water use. Complete SB X7-7 Table 4-C.1
<input type="checkbox"/>	Criteria 2 - Industrial water use is equal to or greater than 15 GPCD. Complete SB X7-7 Table 4-C.2
<input type="checkbox"/>	Criteria 3 - Non-industrial use is equal to or less than 120 GPCD. Complete SB X7-7 Table 4-C.3
<input type="checkbox"/>	Criteria 4 - Disadvantaged Community. Complete SB x7-7 Table 4-C.4

NOTES:

SB X7-7 Table 4-C.1: 2020 Process Water Deduction Eligibility*(For use only by agencies that are deducting process water using Criteria 1)***Criteria 1**

Industrial water use is equal to or greater than 12% of gross water use

2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction	2020 Industrial Water Use	Percent Industrial Water	Eligible for Exclusion Y/N
	10,972		0%	NO

NOTES:

SB X7-7 Table 4-C.2: 2020 Process Water Deduction Eligibility

(For use only by agencies that are deducting process water using Criteria 2)

Criteria 2

Industrial water use is equal to or greater than 15 GPCD

2020 Compliance Year	2020 Industrial Water Use	2020 Population	2020 Industrial GPCD	Eligible for Exclusion Y/N
		132,691	-	NO

NOTES:

SB X7-7 Table 4-C.3: 2020 Process Water Deduction Eligibility

(For use only by agencies that are deducting process water using Criteria 3)

Criteria 3

Non-industrial use is equal to or less than 120 GPCD

2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction <i>Fm SB X7-7 Table 4</i>	2020 Industrial Water Use	2020 Non-industrial Water Use	2020 Population <i>Fm SB X7-7 Table 3</i>	Non-Industrial GPCD	Eligible for Exclusion Y/N
	10,972		10,972	132,691	74	YES

NOTES:

SB X7-7 Table 4-C.4: 2020 Process Water Deduction Eligibility (For use only by agencies that are deducting process water using Criteria 4)

Criteria 4

Disadvantaged Community. A "Disadvantaged Community" (DAC) is a community with a median household income less than 80 percent of the statewide average.

SELECT ONE

"Disadvantaged Community" status was determined using one of the methods listed below:

1. IRWM DAC Mapping tool <https://gis.water.ca.gov/app/dacs/>

If using the IRWM DAC Mapping Tool, include a screen shot from the tool showing that the service area is considered a DAC.

2. 2020 Median Income

	California Median Household Income*		Service Area Median Household Income	Percentage of Statewide Average	Eligible for Exclusion? Y/N
	2020	\$75,235			
<input type="checkbox"/>	2020	\$75,235		0%	YES
*California median household income 2015 -2019 as reported in US Census Bureau QuickFacts.					

NOTES

SB X7-7 Table 4-D: 2020 Process Water Deduction - Volume

Complete a separate table for each industrial customer with a process water exclusion

Name of Industrial Customer					
Compliance Year 2020	Industrial Customer's Total Water Use *	Total Volume Provided by Supplier*	% of Water Provided by Supplier	Customer's Total Process Water Use*	Volume of Process Water Eligible for Exclusion for this Customer
					-

* **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:

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

2020 Gross Water <i>Fm SB X7-7 Table 4</i>	2020 Population <i>Fm SB X7-7 Table 3</i>	2020 GPCD
10,972	132,691	74

NOTES:

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD ¹	Optional Adjustments to 2020 GPCD					2020 Confirmed Target GPCD ^{1, 2}	Did Supplier Achieve Targeted Reduction for 2020?
	Enter "0" if Adjustment Not Used			TOTAL Adjustments ¹	Adjusted 2020 GPCD ¹ <i>(Adjusted if applicable)</i>		
	Extraordinary Events ¹	Weather Normalization ¹	Economic Adjustment ¹				
74	-	-	-	-	74	142	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:

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX I

CENTRAL BASIN THIRD AMENDED JUDGMENT

1 WILLIAM F. KRUSE (CSB # 090231)
2 LAGERLOF, SENEAL, GOSNEY & KRUSE, LLP
3 301 N. Lake Avenue, 10th Floor
4 Pasadena, CA 91101-4108
5 626/793-9400; FAX 626/793-5900

6 Attorneys for CITY OF LAKEWOOD,
7 CITY OF LONG BEACH

8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 FOR THE COUNTY OF LOS ANGELES

10 CENTRAL AND WEST BASIN WATER
11 REPLENISHMENT DISTRICT, etc.,

12 Plaintiff,

13 vs.

14 CHARLES E. ADAMS, et al.,

15 Defendant

16
17 CITY OF LAKEWOOD, a municipal
18 corporation,

19 Cross-Complainant

20 vs.

21 CHARLES E. ADAMS, et al.,

22 Cross-Defendants.

Case No.: 786,656

THIRD AMENDED JUDGMENT

(Declaring and establishing
water rights in Central Basin,
enjoining extractions
therefrom in excess of
specified quantities
and providing for the storage and
extraction of stored water.)

Assigned for all purposes to
Hon. Abraham Khan
Dept. 51

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1 The original judgment in this action was entered on or about August 27, 1965. Pursuant
2 to the reserved and continuing jurisdiction of the court under the Judgment herein, certain
3 amendments to said Judgment and temporary orders have heretofore been made and entered.
4 Continuing jurisdiction of the court for this action is currently assigned to Hon. Abraham Khan.

5 The Motion of Plaintiff WATER REPLENISHMENT DISTRICT OF SOUTHERN
6 CALIFORNIA (which originally brought this action under its former name “Central and West
7 Basin Water Replenishment District”), and of defendants, City of Lakewood, City of Long
8 Beach, Golden State Water Company, California Water Service Company, City of Los Angeles,
9 City of Cerritos, City of Downey, City of Signal Hill, Pico Water District, Bellflower-Somerset
10 Mutual Water Company, LaHabra Heights County Water District, City of Norwalk, Orchard
11 Dale Water District, Montebello Land & Water Company, South Montebello Irrigation District,
12 Sativa Los Angeles County Water District, City of Vernon and Central Basin Municipal Water
13 District (“Moving Parties”) herein for further amendments to the Judgment, notice thereof and of
14 the hearing thereon having been duly and regularly given to all parties, came on for hearing in
15 Department 51 of the above-entitled court on December 18, 2013 at 9:00 a.m. before said Hon.
16 Abraham Khan. This “Third Amended Judgment” incorporates amendments and orders
17 heretofore made to the extent presently operable and amendments pursuant to said last
18 mentioned motion. To the extent this Amended Judgment is a restatement of the Judgment as
19 heretofore amended, it is for convenience in incorporating all matters in one document, is not a
20 readjudication of such matters and is not intended to reopen any such matters. As used
21 hereinafter the word “Judgment” shall include the original Judgment entered in this action as
22 amended to date, including this Third Amended Judgment.

23 There exists in the County of Los Angeles, State of California, an underground water
24 basin or reservoir known and hereinafter referred to as the “Central Basin” or “Basin” described
25 in Appendix “1” to this Judgment.

26 Within this Judgment, the following terms, words, phrases and clauses are used by the
27 Court with the following meanings:

28 “Adjudicated Storage Capacity” means 220,000 acre-feet of the Available Dewatered

1 Space which has been apportioned herein for Individual Storage Accounts and Community
2 Storage.

3 “Administrative Body” is defined in Section II(A).

4 “Administrative Year” means the twelve (12) month period beginning July 1 and ending
5 June 30.

6 “Allowed Pumping Allocation” is that quantity in acre feet which the Court adjudges to
7 be the maximum quantity which a party should be allowed to extract annually from Central
8 Basin as set forth in Part I hereof, which constitutes 80% of such party’s Total Water Right.

9 “Allowed Pumping Allocation for a particular Administrative Year” and “Allowed
10 Pumping Allocation in the following Administrative Year” and similar clauses, mean the
11 Allowed Pumping Allocation as increased in a particular Administrative Year by any authorized
12 carryovers pursuant to Section III(A) of this Judgment and as reduced by reason of any over-
13 extractions in a previous Administrative Year.

14 “Artificial Replenishment” is the replenishment of Central Basin achieved through the
15 spreading or injection of imported or recycled water for percolation thereof into Central Basin by
16 a governmental agency, including WRD.

17 “Artificial Replenishment Water” means water captured or procured by WRD to
18 replenish the Basin, either directly by percolating or injecting the water into the Basin, or
19 through in lieu replenishment by substituting surface water (or payment therefor) in lieu of
20 production and use of groundwater.

21 “Available Dewatered Space” means the total amount of space available to hold
22 groundwater within the Central Basin without causing Material Physical Harm, which space is
23 allocated between Adjudicated Storage Capacity and Basin Operating Reserve.

24 “Base Water Right” is the highest continuous extractions of water by a party from Central
25 Basin for a beneficial use in any period of five consecutive years after the commencement of
26 overdraft in Central Basin and prior to the commencement of this action, as to which there has
27 been no cessation of use by that party during any subsequent period of five consecutive years.
28 As employed in the above definition, the words “extractions of water by a party” and “cessation

1 of use by that party” include such extractions and cessations by any predecessor or predecessors
2 in interest.

3 “Basin Operating Reserve” means a total of 110,000 acre feet of Available Dewatered
4 Space available for Basin operations as provided in Section IV(L). The Basin Operating Reserve
5 added to the Adjudicated Storage Capacity equals the amount of Available Dewatered Space.

6 “Calendar Year” is the twelve month period commencing January 1 of each year and
7 ending December 31 of each year.

8 “Carryover” is defined in Section III(A).

9 “Carryover Conversion” means the process of transferring water properly held as
10 Carryover into Stored Water, or the water so converted to Stored Water.

11 “Central Basin” is the underground basin or reservoir underlying the Central Basin Area,
12 the exterior boundaries of which Central Basin are the same as the exterior boundaries of Central
13 Basin Area.

14 “Central Basin Area” is the territory described in Appendix “1” to this Judgment and is a
15 segment of the territory comprising Plaintiff District.

16 “Central Basin Water Rights Panel” means the constituent body of Watermaster
17 consisting of seven (7) Parties elected from among parties holding Allowed Pumping Allocations
18 as provided in Section II(B).

19 “CEQA” refers to the California Environmental Quality Act, Public Resources Code
20 §§ 21000 *et seq.*

21 “Community Storage Pool” is defined in Section IV(E).

22 “Declared Water Emergency” means a period commencing with the adoption of a
23 resolution of the Board of Directors of WRD declaring that conditions within the Central Basin
24 relating to natural and imported supplies of water are such that, without implementation of the
25 water emergency provisions of this Judgment, the water resources of the Central Basin risk
26 degradation. Such Declaration may be made as provided in Section III(A)(3).

27 “Disadvantaged Community” means any area that is served by a Water Purveyor and that
28 consists of one or more contiguous census tracts which, based upon the most-recent United

1 States Census data, demonstrates a median household income which is less than eighty percent
2 (80%) of the median household income for all Census Tracts within the state of California. The
3 identification of Disadvantaged Communities shall be made by Watermaster following each
4 decennial census.

5 “Extraction,” “extractions,” “extracting,” “extracted,” and other variations of the same
6 noun and verb, mean pumping, taking, diverting or withdrawing groundwater by any manner or
7 means whatsoever from Central Basin.

8 “Imported Water” means water brought into Central Basin Area from a non-tributary
9 source by a party and any predecessors in interest, either through purchase directly from
10 Metropolitan Water District of Southern California (“MWD”), the Central Basin Municipal
11 Water District (“CBMWD”), or any other MWD member agency and additionally, as to the
12 Department of Water and Power of the City of Los Angeles, water brought into the Central Basin
13 Area by that party by means of the Owens River Aqueduct. In the case of water imported for
14 storage by a party pursuant to this Judgment, “Imported Water” means water brought into the
15 Central Basin from any non-tributary source as one method for establishing storage in the
16 Central Basin.

17 “Imported Water Use Credit” is the annual amount, computed on a calendar year basis, of
18 Imported Water which any party and any predecessors in interest, who have timely made the
19 required filings under Water Code Section 1005.1, have imported into Central Basin Area in any
20 calendar year and subsequent to July 9, 1951, for beneficial use therein, but not exceeding the
21 amount by which that party and any predecessors in interest reduces his or their extractions of
22 groundwater from Central Basin in that calendar year from the level of his or their extractions in
23 the preceding calendar year, or in any prior calendar year not earlier than the calendar year 1950,
24 whichever is the greater.

25 “Individual Storage Allocation” is defined in Section IV(D).

26 “Majority Protest” means a written protest filed with the Administrative Body of
27 Watermaster within sixty (60) days following a protested event or decision, which evidences the
28 concurrence of a majority of the Allowed Pumping Allocations held within the Basin as of the

1 date thereof.

2 “Material Physical Harm” means material physical injury or a material diminution in the
3 quality or quantity of groundwater available within the Basin to support extraction of Total
4 Water Rights or Stored Water, that is demonstrated to be attributable to the placement, recharge,
5 injection, storage or recapture of Stored Water in the Central Basin, including, but not limited to,
6 degradation of water quality, liquefaction, land subsidence and other material physical injury
7 caused by elevated or lowered groundwater levels. Material Physical Harm does not include
8 “economic injury” that results from other than direct physical causes, including any adverse
9 effect on water rates, lease rates, or demand for water. Once fully mitigated, physical injury
10 shall no longer be considered to be material.

11 “Natural Replenishment” means and includes all processes other than “Artificial
12 Replenishment” by which water may become a part of the groundwater supply of Central Basin.

13 “Natural Safe Yield” is the maximum quantity of groundwater, not in excess of the long
14 term average annual quantity of Natural Replenishment, which may be extracted annually from
15 Central Basin without eventual depletion thereof or without otherwise causing eventual
16 permanent damage to Central Basin as a source of groundwater for beneficial use, said maximum
17 quantity being determined without reference to Artificial Replenishment.

18 “Outgoing Watermaster” is the State of California, Department of Water Resources, the
19 Watermaster appointed pursuant to the terms of the Judgment before this Third Amendment.

20 “Overdraft” is that condition of a groundwater basin resulting from extractions in any
21 given annual period or periods in excess of the long term average annual quantity of Natural
22 Replenishment, or in excess of that quantity which may be extracted annually without otherwise
23 causing eventual permanent damage to the basin.

24 “Party” means a party to this action. Whenever the term “party” is used in connection
25 with a quantitative water right, or any quantitative right, privilege or obligation, or in connection
26 with the assessment for the budget of the Watermaster, it shall be deemed to refer collectively to
27 those parties to whom are attributed a Total Water Right in Part I of this Judgment.

28 “Person” or “persons” include individuals, partnerships, associations, governmental

1 agencies and corporations, and any and all types of entities.

2 “Recycled Water” means water that has been reclaimed through treatment appropriate for
3 its intended use in compliance with applicable regulations.

4 “Regional Disadvantaged Communities Incentive Program” means a program to be
5 developed by Watermaster in the manner provided in Section II(H) of this Judgment, and
6 approved by the Court, whereby a portion of the Community Storage Pool is made available to
7 or for the benefit of Disadvantaged Communities, on a priority basis within the Central Basin.

8 “Replenishment Assessment” means the replenishment assessment imposed by WRD
9 upon each acre-foot of groundwater extracted from the Central Basin pursuant to WRD’s
10 enabling act, California Water Code §§ 60000 et seq.

11 “Small Water Producers Group” means a body consisting of parties holding no greater
12 than 5,000 acre-feet of Allowed Pumping Allocation, as set forth on Appendix 3 hereto and as
13 may be modified from time to time by the Group’s own procedures and the requirements set
14 forth in Appendix 3.

15 “Storage Panel” or “Central Basin Storage Panel” means a bicameral constituent body of
16 Watermaster consisting of (i) the Central Basin Water Rights Panel and (ii) the Board of
17 Directors of WRD.

18 “Storage Project” means an activity pertaining to the placement, recharge, injection,
19 storage, transfer, or recapture of Stored Water within the Basin, but does not include actions by
20 WRD undertaken in connection with its replenishment activities.

21 “Stored Water” means water, including Recycled Water, held within Available
22 Dewatered Space as a result of spreading, injection, in-lieu delivery, or Carryover Conversion,
23 where there is an intention to subsequently withdraw the water for reasonable and beneficial use
24 pursuant to this Judgment.

25 “Total Water Right” is the quantity arrived at in the same manner as in the computation
26 of “Base Water Right,” but including as if extracted in any particular year the Imported Water
27 Use Credit, if any, to which a particular party may be entitled.

28 “Water” includes only non-saline water, which is that having less than 1,000 parts of

1 chlorides to 1,000,000 parts of water.

2 “Water Augmentation Project” means pre-approved physical actions and management
3 activities that provide demonstrated appreciable increases in long-term annual groundwater yield
4 in the Basin that are initiated as provided in this Judgment after January 1, 2013.

5 “Water Purveyor” means a Party (and successors in interest) which sells water to the
6 public, whether a regulated public utility, mutual water company or public entity. As that term is
7 used in Section III(B)(6), “Water Purveyor,” in addition to the foregoing, means a Party which
8 has a connection or connections for the taking of Imported Water through the Metropolitan
9 Water District of Southern California (“MWD”), or through a MWD-member agency, or access
10 to such Imported Water through such connection, and which normally supplies at least a part of
11 its customers’ water needs with such Imported Water.

12 “Watermaster” is defined in Part II and is comprised of (i) the Administrative Body, (ii)
13 the Central Basin Water Rights Panel, and (iii) the Central Basin Storage Panel. Watermaster,
14 and the various constituent bodies of Watermaster, as designated in this Judgment, exist as a
15 special master pursuant to this Judgment and Watermaster serves at the pleasure of the Court.
16 Nothing herein shall be construed as creating an independent designation of “Watermaster” as a
17 public agency subject to the provisions of CEQA, nor does membership or participation as the
18 designated Watermaster expand any statutory, constitutional, or other powers of the members
19 serving as part of the Watermaster.

20 “West Coast Basin” is the groundwater basin adjacent to the Central Basin which is the
21 subject of a separate adjudication of groundwater rights in *California Water Service Company, et*
22 *al. v. City of Compton, et al.*, Los Angeles Superior Court Case No. 506806.

23 “WRD” or “Water Replenishment District” is the plaintiff herein, the Water
24 Replenishment District of Southern California, a special district of the State of California, which
25 brought this action under its former name, “Central and West Basin Water Replenishment
26 District.”

27 In those instances where any of the above-defined words, terms, phrases or clauses are
28 utilized in the definition of any of the other above-defined words, terms, phrases and clauses,

1 such use is with the same meaning as is above set forth.

2
3 NOW THEREFORE, IT IS ORDERED, DECLARED, ADJUDGED AND DECREED
4 WITH RESPECT TO THE ACTION AND CROSS-ACTION AS FOLLOWS:

5
6 I. DECLARATION AND DETERMINATION OF WATER RIGHTS OF
7 PARTIES; RESTRICTION ON THE EXERCISE THEREOF.¹

8 A. Determination of Rights of Parties.

9 (1) Each party, except defendants The City of Los Angeles and
10 Department of Water and Power of the City of Los Angeles, whose name is set
11 forth in Appendix 2 and by this reference made a part hereof, and after whose
12 name there appears under the column "Total Water Right" a figure other than "0,"
13 is the owner of and has the right to extract annually groundwater from Central
14 Basin for beneficial use in the quantity set forth after that party's name under said
15 column "Total Water Right" as of the close of the Administrative Year ending
16 June 30, 2012 in accordance with the Watermaster Reports on file with this Court
17 and the records of the Plaintiff. This tabulation does not take into account
18 additions or subtractions from any Allowed Pumping Allocation of a producer for
19 the 2012-2013 Administrative Year, nor other adjustments not representing
20 change in fee title to water rights, such as leases of water rights, nor does it
21 include the names of lessees of landowners where the lessees are exercising the
22 water rights. The exercise of all water rights is subject, however, to the
23 provisions of this Judgment as hereinafter contained. All of said rights are of the
24 same legal force and effect and are without priority with reference to each other.
25 Each party whose name is set forth in the tabulation in Appendix "2" of this

26
27 ¹ Headings in the Judgment are for purposes of reference and the language of said headings do not constitute, other
28 than for such purpose, a portion of this Judgment.

1 Judgment, and after whose name there appears under the column “Total Water
2 Right” the figure “0,” owns no rights to extract any groundwater from Central
3 Basin, and has no right to extract any groundwater from Central Basin.

4 (2) Defendant The City of Los Angeles is the owner of the right to
5 extract fifteen thousand (15,000) acre feet per annum of groundwater from
6 Central Basin, but it has the right and ability to purchase or lease additional rights
7 to extract groundwater and increase its Allowed Pumping Allocation. Defendant
8 Department of Water and Power of the City of Los Angeles has no right to extract
9 groundwater from Central Basin except insofar as it has the right, power, duty or
10 obligation on behalf of defendant The City of Los Angeles to exercise the water
11 rights in Central Basin of defendant The City of Los Angeles. The exercise of
12 said rights is subject, however, to the provisions of this Judgment hereafter
13 contained, including but not limited to, sharing with other parties in any
14 subsequent decreases or increases in the quantity of extractions permitted from
15 Central Basin, pursuant to continuing jurisdiction of the Court, on the basis that
16 fifteen thousand (15,000) acre feet (and any increase in its Allowed Pumping
17 Allocation) bears to the Allowed Pumping Allocations of the other parties.

18 (3) No party to this action is the owner of or has any right to extract
19 groundwater from Central Basin except as herein affirmatively determined.

20 B. Parties Enjoined as to Quantities of Extractions.

21 (1) Each party, other than The State of California and The City of Los
22 Angeles and Department of Water and Power of The City of Los Angeles, is
23 enjoined and restrained in any Administrative Year commencing after the date
24 this Judgment becomes final from extracting from Central Basin any quantity of
25 Water greater than the party’s Allowed Pumping Allocation as hereinafter set
26 forth next to the name of the party in the tabulation appearing in Appendix 2 at
27 the end of this Judgment, subject to further provisions of this Judgment. Subject
28 to such further provisions, the officials, agents and employees of The State of

1 California are enjoined and restrained in any such Administrative Year from
2 extracting from Central Basin collectively any quantity of water greater than the
3 Allowed Pumping Allocation of The State of California as hereinafter set forth
4 next to the name of that party in the same tabulation. Each party adjudged and
5 declared above not to be the owner of and not to have the right to extract
6 groundwater from Central Basin is enjoined and restrained in any Administrative
7 Year commencing after the date this Judgment becomes final from extracting any
8 groundwater from Central Basin, except as may be hereinafter permitted to any
9 such party under this Judgment.

10 (2) The total extraction right for each party includes a party's Allowed
11 Pumping Allocation (to the extent not transferred by agreement or otherwise), any
12 contractual right acquired through lease or other agreement to extract or use the
13 rights of another party, and any right to extract Stored Water or Carryover as
14 provided in this Judgment. No party may extract in excess of 140% of the sum of
15 (i) the party's Allowed Pumping Allocation and (ii) the party's leased water,
16 except upon prior approval by the applicable body of Watermaster as required
17 pursuant to Section IV(J) as provided herein. Upon application, the body specified
18 in Section IV(J) shall approve a party's request to extract water in excess of such
19 limit, provided there is no Material Physical Harm. Requests to extract water in
20 excess of such limit shall be reviewed and either approved or denied within thirty
21 (30) days of such request.

22 (3) Defendant The City of Los Angeles is enjoined and restrained in
23 any Administrative Year commencing after the date this Judgment becomes final
24 from extracting from Central Basin any quantity of water greater than fifteen
25 thousand (15,000) acre feet or its Allowed Pumping Allocation, as recognized by
26 the Watermaster, if it acquires additional rights to pump groundwater through
27 purchase or lease, subject to further provisions of this Judgment, including but not
28 limited to, sharing with other parties in any subsequent decreases or increases in

1 the quantity of extractions permitted from Central Basin by parties, pursuant to
2 continuing jurisdiction of the Court, on the basis that fifteen thousand (15,000)
3 acre feet (or the adjusted Allowed Pumping Allocation if additional rights are
4 acquired) bears to the Allowed Pumping Allocations of the other parties.
5 Defendant Department of Water and Power of The City of Los Angeles is
6 enjoined and restrained in any Administrative Year commencing after the date
7 this Judgment becomes final from extracting from Central Basin any quantity of
8 water other than such as it may extract on behalf of defendant The City of Los
9 Angeles, and which extractions, along with any extractions by said City, shall not
10 exceed that quantity permitted by this Judgment to that City in any Administrative
11 Year. Whenever in this Judgment the term “Allowed Pumping Allocation”
12 appears, it shall be deemed to mean as to defendant The City of Los Angeles the
13 quantity of fifteen thousand (15,000) acre feet unless the City of Los Angeles has
14 acquired through purchase or lease right to extract additional groundwater. The
15 limit on extraction as provided in the preceding Section I(B)(1) shall also apply to
16 The City of Los Angeles.

17 (4) Any rights decreed and adjudicated herein may be transferred,
18 assigned, licensed or leased by the owner thereof provided, however, that no such
19 transfer shall be complete until compliance with the appropriate notice procedures
20 established by Watermaster.

21 (5) Unless a party elects otherwise, production of water from the Basin
22 for the use or benefit of the parties hereto shall be counted against the party’s total
23 extraction right in the following order: (i) Increased extractions by certain
24 qualified water rights holders pursuant to Section IV(K), (ii) Exchange Pool
25 production, (iii) production of Carryover water, (iv) production of leased water, ,
26 (v) production of Allowed Pumping Allocation, (vi) production of Stored Water,
27 (vii) production of Drought Carryover (according to Watermaster’s Rules), and
28 (viii) production of water under an agreement with WRD during a period of

1 emergency pursuant to Section III(B)(6).

2 C. Parties Enjoined as to Export of Extractions.

3 Except as expressly authorized herein, or upon further order of the Court, all
4 parties are enjoined and restrained from transporting water extracted from the Central
5 Basin outside the boundaries of the Central Basin Area. For purposes of this Section,
6 water supplied by a Water Purveyor to its customers located within any of its service
7 areas contiguous to the Central Basin or within WRD's service area shall be exempt from
8 the export prohibition of this Section provided that the Water Purveyor also provides
9 water to a service area that overlies the Basin in whole or in part. The foregoing
10 exemption is not made, nor is it related to, a determination of an underflow between the
11 basins, a cost or benefit allocation, or any other factor relating to the allocation of the
12 Replenishment Assessment by WRD. Further, this injunction and restriction does not
13 apply to export of water that will take place pursuant to contractual obligations
14 specifically identified on Appendix 4, nor does it apply to export of Stored Water not
15 having its origin in Carryover Conversion. The export identified on Appendix 4 may
16 continue to the extent that any such extraction does not violate any other provisions of
17 this Judgment, provided however that no such export identified on Appendix 4 shall
18 exceed 5,000 acre-feet in any Year.

19
20 II. APPOINTMENT OF WATERMASTER; WATERMASTER ADMINISTRATION
21 PROVISIONS.

22 The particular bodies specified below are, jointly, hereby appointed Watermaster,
23 for an indefinite term, but subject to removal by the Court, to administer this Judgment. Such
24 bodies, which together shall constitute the "Watermaster," shall have restricted powers, duties
25 and responsibilities as specified herein, it being the court's intention that particular constituent
26 bodies of Watermaster have only limited and specified powers over certain aspects of the
27 administration of this Judgment. The Outgoing Watermaster will exercise reasonable diligence
28 in the complete transition of Watermaster duties and responsibilities within a reasonable time

1 following entry of this order, and to make available to the new Watermaster all records
2 concerning Watermaster activities. The chair of the Central Basin Water Rights Panel (defined
3 below) shall thereafter represent the Watermaster before the Court.

4 A. The Administrative Body.

5 Plaintiff Water Replenishment District of Southern California (“WRD”) is
6 appointed the Administrative Body of the Central Basin Watermaster (“Administrative
7 Body”). In order to assist the Court in the administration of the provisions of this
8 Judgment and to keep the Water Rights Panel and the Court fully advised in the
9 premises, the Administrative Body shall have the following duties, powers and
10 responsibilities:

11 (1) To Require Reports, Information and Records.

12 In consultation with the Water Rights Panel, the Administrative Body
13 shall require the parties to furnish such reports, information and records as may be
14 reasonably necessary to determine compliance or lack of compliance by any party
15 with the provisions of this Judgment.

16 (2) Storage Projects.

17 The Administrative Body shall exercise such powers as may be
18 specifically granted to it under this Judgment with regard to Stored Water.

19 (3) Annual Report.

20 The Administrative Body shall prepare, on or before the 15th day of the
21 fourth month following the end of the preceding Administrative Year, an annual
22 report for the consideration of the Water Rights Panel. The Chair of the Water
23 Rights Panel shall submit to the Court either (1) the annual report prepared by the
24 Administrative Body, following the adoption by the Water Rights Panel, or (2) an
25 annual report separately prepared and adopted by the Water Rights Panel. The
26 annual report prepared by the Administrative Body shall be limited to the
27 following, unless otherwise required by the Court:

28 (a) Groundwater extractions

- 1 (b) Storage Accounts maintained by each party
- 2 (c) Status of the Regional Disadvantaged Community
- 3 Incentive Program, if approved by the Court
- 4 (d) Exchange Pool operation
- 5 (e) Use of Imported Water
- 6 (f) Violations of this Judgment and corrective action taken by
- 7 bodies of Watermaster having jurisdiction as provided in this
- 8 Judgment
- 9 (g) Change of ownership of Total Water Rights
- 10 (h) Watermaster administration costs
- 11 (i) Water spread or imported into the Basin
- 12 (j) Water Augmentation Projects
- 13 (k) Whether the Administrative Body has become aware of the
- 14 development of a Material Physical Harm, or imminent threat of the
- 15 development of a Material Physical Harm, as required pursuant to
- 16 Section IV(B) of this Judgment
- 17 (l) Other matters as agreed with the Water Rights Panel
- 18 (m) Recommendations, if any.

19 In consultation with the Water Rights Panel, the Administrative Body shall
20 provide reasonable notice to all parties of all material actions or determinations by
21 Watermaster or any constituent body thereof, and as otherwise provided by this
22 Third Amended Judgment.

23 (4) Annual Budget and Appeal Procedure in Relation Thereto.

24 By April 1 of each Administrative Year, the Administrative Body shall
25 prepare a proposed administrative budget for the subsequent year stating the
26 anticipated expense for performing the administrative functions specified in this
27 Judgment (the “Administrative Budget”). The Administrative Body shall mail a
28 copy of the proposed Administrative Budget to each of the Parties at least 60 days

1 before the beginning of each Administrative Year. The Administrative Budget
2 mailed to the Parties shall provide sufficient detail in the Administrative Budget
3 to demonstrate a separation in accounting between the Administrative Budget and
4 WRD's Replenishment Assessment and operating budget. For the first
5 Administrative Year of operation under this Third Amended Judgment, if the
6 Administrative Body is unable to meet the above time requirement, the
7 Administrative Body shall mail said copies as soon as possible. The first year the
8 Administrative Budget is prepared, the amount of that budget shall not exceed an
9 amount equal to fifty percent (50%) of the 2012-2013 charge for Watermaster
10 service for the Central Basin collected from Parties by the California Department
11 of Water Resources. At all times, the Administrative Body shall maintain a
12 separation in accounting between the Administrative Budget and WRD's
13 Replenishment Assessment and operating budget. All increases in future budgets
14 for the Administrative Body above the amount set forth above shall be subject to
15 approval by the Water Rights Panel following a public meeting to be held prior to
16 the beginning of the Administrative Year, provided that the approved budget shall
17 not be less than the amount of the first-year budget for the Administrative Body,
18 except upon further order of the Court. Any administrative function by WRD
19 already paid for by the Replenishment Assessment shall not be added as an
20 expense in the Administrative Budget. Similarly, any expense paid for by the
21 Administrative Budget shall not be added to WRD's operating budget, or
22 otherwise added to the calculation of the Replenishment Assessment. While WRD
23 may approve the proposed Administrative Budget at the same meeting in which
24 WRD adopts its annual Replenishment Assessment or annual budget, the
25 Administrative Body's budget shall be separate and distinct from the
26 Replenishment Assessment imposed pursuant to Water Code §60317 and WRD's
27 operating budget.

28 If approval by the Water Rights Panel is required pursuant to the

1 foregoing, the Water Rights Panel shall act upon the proposed budget within 15
2 calendar days after the public meeting. If the Water Rights Panel does not
3 approve the budget prior to such deadline, the matter may be appealed to the
4 Court within sixty (60) days. If any Party hereto has any objection to the
5 Administrative Budget, it shall present the same in writing to Watermaster within
6 15 days after the date of mailing of said tentative budget by the Administrative
7 Body. The Parties shall make the payments otherwise required of them to the
8 Administrative Body even though an appeal of such budget may be pending.
9 Upon any revision by the Court, the Administrative Body shall either remit to the
10 Parties their pro rata portions of any reduction in the budget, or shall credit their
11 accounts with respect to their budget assessments for the next ensuing
12 Administrative Year, as the Court shall direct.

13 The amount of the Administrative Budget to be assessed to each party
14 shall be determined as follows: If that portion of the final budget to be assessed to
15 the Parties is equal to or less than \$20.00 per party then the cost shall be equally
16 apportioned among the Parties. If that portion of the final budget to be assessed to
17 Parties is greater than \$20.00 per party then each Party shall be assessed a
18 minimum of \$20.00. The amount of revenue expected to be received through the
19 foregoing minimum assessments shall be deducted from that portion of the final
20 budget to be assessed to the Parties and the balance shall be assessed to the Parties
21 having Allowed Pumping Allocation, such balance being divided among them
22 proportionately in accordance with their respective Allowed Pumping Allocation.

23 Payment of the assessment provided for herein, subject to adjustment by
24 the Court as provided, shall be made by each such party prior to beginning of the
25 Administrative Year to which the assessment relates, or within 40 days after the
26 mailing of the tentative budget, whichever is later. If such payment by any Party
27 is not made on or before said date, the Administrative Body shall add a penalty of
28 5% thereof to such party's statement. Payment required of any Party hereunder

1 may be enforced by execution issued out of the Court, or as may be provided by
2 order hereinafter made by the Court, or by other proceedings by the Watermaster
3 or by any Party on the Watermaster’s behalf.

4 Any money unexpended at the end of any Administrative Year shall be
5 applied to the budget of the next succeeding Administrative Year. The
6 Administrative Body shall maintain no reserves.

7 Notwithstanding the above, no part of the budget of the Administrative
8 Body shall be assessed to WRD or to any Party who has not extracted water from
9 Central Basin for a period of two successive Administrative Years prior to the
10 Administrative Year in which the tentative budget should be mailed by the
11 Administrative Body under the provisions of this subparagraph (4).

12 (5) Rules.

13 The Administrative Body may adopt, and amend from time to time, rules
14 consistent with this Judgment as may be reasonably necessary to carry out duties
15 under the provisions of this Judgment within its particular area of responsibility.
16 The Body shall adopt its first set of rules and procedures within three (3) months
17 following entry of this Third Amended Judgment. The rules shall be effective on
18 such date after the mailing thereof to the Parties as is specified by the Body, but
19 not sooner than thirty (30) days after such mailing.

20 B. The Central Basin Water Rights Panel.

21 The Central Basin Water Rights Panel of the Central Basin Watermaster (“Water Rights
22 Panel”) shall consist of seven (7) members, each of which is a Party. The term of each member
23 of the Panel, with the exception of the seat held by the Small Water Producers Group, as
24 provided herein, shall be limited to four years. The Court will make the initial appointments to
25 the Central Basin Water Rights Panel upon motion by Parties consistent with the categories set
26 forth below at or about the time of entry of this Third Amended Judgment, and shall establish a
27 procedure for the staggered terms of such members. Thereafter, elections of members of the
28 Panel shall be held as provided herein. One (1) such member of the Water Rights Panel shall be

1 elected by vote of the Small Water Producers Group conducted in accordance with its own
2 procedures, provided such Group, as of the date of the election, consists of at least five (5)
3 members who are Water Purveyors. One (1) such member of the Water Rights Panel shall be
4 elected by vote of Parties with Allowed Pumping Allocation of less than 5,000 acre-feet who are
5 not members of the Small Water Producers Group or, if the Small Water Producers Group does
6 not then qualify following a continuous six-month period of non-qualification as provided
7 herein, then two (2) such members shall be so selected. One (1) such member of the Water
8 Rights Panel shall be elected by vote of Parties with Allowed Pumping Allocation of at least
9 5,000 acre-feet but less than 10,000 acre-feet. Three (3) such members of the Water Rights
10 Panel shall be elected by vote of Parties with Allowed Pumping Allocation of 10,000 acre-feet or
11 greater. One (1) such member of the Water Rights Panel shall be elected by a vote of all holders
12 of Allowed Pumping Allocations, with each such holder being entitled to one vote, such member
13 to be elected by a plurality of the votes cast, following a nomination procedure to be established
14 in the Water Rights Panel's rules. In the event of a tie, the seventh member shall be determined
15 as may be provided in the Water Rights Panel's rules, or otherwise by the court. Except as
16 otherwise provided in this Section, each such rights holder shall have the right to cast a total
17 number of votes equal to the number of acre-feet of its Allowed Pumping Allocation (rounded to
18 the next highest whole number). With the exception of voting for the seventh member, Parties
19 shall be entitled to vote only for candidates within the category(ies) that represent that Party's
20 Allowed Pumping Allocation. For example, parties who are members of the Small Water
21 Producers Group are entitled to vote only for the Small Water Producer Group member and the
22 seventh member of the Water Rights Panel, and so on. Parties are not permitted to split votes.
23 The results of such election shall be reported to the Court for confirmation of each member's
24 appointment to the Water Rights Panel of Watermaster. The elected members of the Water
25 Rights Panel shall be those candidates receiving the highest vote total in their respective
26 categories. The Water Rights Panel shall hold its first meeting within thirty (30) days of the date
27 this Third Amended Judgment becomes final. The Water Rights Panel shall develop rules for its
28 operation consistent with this Judgment. The Water Rights Panel shall take action, including the

1 election of its Chair, by majority vote of its members. Election of the Chair shall occur every
2 two years, with no Party serving as Chair for consecutive terms. Members of the Water Rights
3 Panel shall serve without compensation. All references to Annual Pumping Allocation, as used
4 herein, are as determined by the last published Watermaster report.

5 (1) The Water Rights Panel shall have the following duties and
6 responsibilities:

7 (a) Enforcement of Adjudicated Rights. As against the other
8 bodies of Watermaster, the Water Rights Panel shall have exclusive
9 authority to move the Court to take such action as may be necessary to
10 enforce the terms of the Judgment with regard to the extraction of
11 Allowed Pumping Allocation and the maintenance of adjudicated
12 groundwater extraction rights as provided in this Judgment.

13 (b) Requirement of Measuring Devices. The Water Rights
14 Panel shall require all parties owning or operating any facilities for the
15 extraction of groundwater from Central Basin to install and maintain at
16 all times in good working order at such party's own expense,
17 appropriate measuring devices at such times and as often as may be
18 reasonable under the circumstances and to calibrate or test such
19 devices.

20 (c) Inspections by Watermaster. The Water Rights Panel may
21 make inspections of groundwater production facilities, including
22 aquifer storage and recovery facilities, and measuring devices at such
23 times and as often as may be reasonable under the circumstances and
24 to calibrate or test such devices.

25 (d) Reports. Annually, the Water Rights Panel, in cooperation
26 with the Administrative Body, shall report to the Court, concerning
27 any or all of the following:

28 (i) Groundwater extractions

- (ii) Exchange Pool operation
- (iii) Status of the Regional Disadvantaged Community Incentive Program, if approved by the Court
- (iv) Violations of this Judgment and corrective action taken or sought
- (v) Change of ownership of Total Water Rights
- (vi) Assessments made by the Water Rights Panel and any costs incurred
- (vii) Whether the Water Rights Panel has become aware of the development of a Material Physical Harm, or imminent threat of the development of a Material Physical Harm, as required pursuant to Section IV(B) of this Judgment
- (viii) Recommendations, if any.

As provided in Section II.A(3), the Water Rights Panel may adopt the annual report prepared by the Administrative Body, and submit the same to the Court, or the Water Rights Panel may prepare, adopt and submit to the Court a separate report. The Chair of the Water Rights Panel shall be responsible for reporting to the Court concerning adjudicated water rights issues in the Basin.

(2) Assessment. The Water Rights Panel shall assess holders of water rights within the Central Basin an annual amount not to exceed \$1.00 per acre-foot of Allowed Pumping Allocation, by majority vote of the members of the Water Rights Panel. The body may assess a higher amount, subject to being overruled by Majority Protest. The assessment is intended to cover any costs associated with reporting responsibilities, any Judgment enforcement action, and the review of storage projects as a component of the “Storage Panel” as provided below. It is anticipated that this body will rely on the Administrative Body’s staff for the functions related to the Administrative Body’s responsibilities, but the

1 Water Rights Panel may engage its own staff if required in its reasonable
2 judgment. Assessments will constitute a lien on the water right assessed,
3 enforceable as provided in this Judgment.

4 (3) Rules. The Water Rights Panel may adopt and amend from time to
5 time, at an open meeting of that Panel, rules consistent with this Judgment as may
6 be reasonably necessary to carry out duties under the provisions of this Judgment
7 within its particular area of responsibility. The Panel shall adopt its first set of
8 rules and procedures within three (3) months following entry of this Third
9 Amended Judgment. The rules shall be effective on such date after the mailing
10 thereof to the Parties as is specified by the Panel, but not sooner than thirty (30)
11 days after such mailing.

12 C. The Storage Panel.

13 The Storage Panel of the Central Basin Watermaster (“Storage Panel”) shall be a
14 bicameral body consisting of (i) the Water Rights Panel and (ii) the Board of Directors of
15 WRD. Action by the Storage Panel shall require separate action by a majority of each of
16 its constituent bodies. The Storage Panel shall have the duties and responsibilities
17 specified with regard to the Provisions for the Storage and Extraction of Stored
18 Groundwater as set forth in Part IV and the other provisions of this Judgment.

19 D. Use of Facilities and Data Collected by Other Governmental Agencies.

20 Where practicable, the three bodies constituting the Central Basin Watermaster
21 should not duplicate the collection of data relative to conditions of the Central Basin
22 which is then being collected by one or more governmental agencies, but where
23 necessary each such body may collect supplemental data. Where it appears more
24 economical to do so, the Watermaster and its constituent bodies are directed to use such
25 facilities of other governmental agencies as are available to it under either no cost or cost
26 agreements with respect to the receipt of reports, billings to parties, mailings to parties,
27 and similar matters.

28 E. Appeal from Watermaster Decisions.

1 Appeals concerning the budget proposed by the Administrative Body shall be
2 governed by Section II(A)(4) of this Judgment. Appeals concerning decisions by the
3 Storage Panel shall be governed by Section IV(P) of this Judgment. With respect to all
4 other objections by a Party to any action or decision by the Watermaster, such objections
5 will be governed by this Section II(E). Any party interested therein who objects to any
6 rule, determination, order or finding made by the Watermaster or any constituent body
7 thereof, may object thereto in writing delivered to the Administrative Body within 30
8 days after the date the Watermaster, or any constituent body thereof, mails written notice
9 of the making of such rule, determination, order or finding. Within 30 days after such
10 delivery the Watermaster, or the affected constituent body thereof, shall consider said
11 objection and shall amend or affirm his rule, determination, order or finding and shall
12 give notice thereof to all parties. Any such party may file with the Court within 60 days
13 from the date of said notice any objection to such rule, determination, order or finding of
14 the Watermaster, or any constituent body thereof, and bring the same on for hearing
15 before the Court at such time as the Court may direct, after first having served said
16 objection upon all other parties. The Court may affirm, modify, amend or overrule any
17 such rule, determination, order or finding of the Watermaster or its affected constituent
18 body. Any objection under this paragraph shall not stay the rule, determination, order or
19 finding of the Watermaster. However, the Court, by *ex parte* order, may provide for a
20 stay thereof on application of any interested party on or after the date that any such party
21 delivers to the Watermaster any written objection.

22 F. Effect of Non-Compliance by Watermaster With Time Provisions.

23 Failure of the Watermaster to perform any duty, power or responsibility set forth
24 in this Judgment within the time limitation herein set forth shall not deprive the
25 Watermaster or its applicable constituent body of authority to subsequently discharge
26 such duty, power or responsibility, except to the extent that any such failure by the
27 Watermaster may have rendered some otherwise required act by a party impossible.

28 G. Limitations on Administrative Body.

1 WRD shall not acquire Central Basin water rights, nor lease Central Basin water
2 or water rights to or from any Party or third party. However, the foregoing shall (i) not be
3 interpreted to restrict WRD's ability or authority to acquire water from any source for
4 purposes of Artificial or Natural Replenishment or for water quality activities, and (ii)
5 not restrict WRD's authority under California Water Code Section 60000 et seq. to
6 develop reclaimed, recycled or remediated water for groundwater replenishment
7 activities.

8 H. Regional Disadvantaged Communities Incentive Program.

9 The Water Rights Panel, acting through the General Manager of WRD, shall
10 develop a Regional Disadvantaged Communities Incentive Program, pursuant to which a
11 portion of the Community Storage Pool is reserved for the benefit of Disadvantaged
12 Communities within the Central Basin. Nothing in this Judgment, nor the establishment
13 of such a program, shall diminish the rights otherwise granted to Parties under this
14 Judgment, including but not limited to the right to place water in storage in the
15 Community Storage Pool. The Water Rights Panel shall meet within thirty (30) days of
16 its formation to identify and consider potential third-party independent consultants who
17 may be retained to design the program, including those recommended by the General
18 Manager of WRD. The Water Rights Panel shall select a consultant within thirty (30)
19 days thereafter. In the event the General Manager of WRD objects to the selected
20 consultant, in writing, then the Water Rights Panel and the General Manager of WRD
21 shall exchange a list of no more than two (2) consultants each for further consideration.
22 If the Water Rights Panel and the General Manager of WRD are unable to agree to a
23 consultant within an additional thirty (30) days, then the Chair of the Water Rights Panel
24 shall file a request with the Court for an order appointing a consultant. Upon selection of
25 a third-party independent consultant, whether through the Water Rights Panel process or
26 the court process identified herein, the consultant shall design a detailed program and
27 deliver it to the Water Rights Panel within ninety (90) days of the consultant's retention.
28 All costs associated with design of the program shall be paid for out of the Water Rights

1 Panel’s assessment, as provided in Section II.B(2). The Water Rights Panel shall present
2 the program to the Court for its review and approval within one year of entry of this
3 Third Amended Judgment. If approved by the Court, the Water Rights Panel, acting
4 through the General Manager of WRD, shall be responsible for administration of the
5 Regional Disadvantaged Communities Incentive Program, including insuring that any
6 funds generated through the program benefit Disadvantaged Communities. Any Storage
7 Project established pursuant to this Program shall have priority to use up to 23,000 acre-
8 feet of Available Storage within the Community Storage Pool, as further provided in
9 Section IV.E(2). Watermaster shall report to the Court concerning such program as a
10 part of its annual report.
11

12 III. PROVISIONS FOR PHYSICAL SOLUTION TO MEET THE WATER
13 REQUIREMENTS IN CENTRAL BASIN.

14 In order to provide flexibility to the injunction set forth in Part I of the Judgment, and to
15 assist in a physical solution to meet water requirements in Central Basin, the injunction so set
16 forth is subject to the following provisions.

17 A. Carryover of Portion of Allowed Pumping Allocation.

18 (1) Amount of Carryover.

19 Each party adjudged to have a Total Water Right or water rights and who,
20 during a particular Administrative Year, does not extract from Central Basin a
21 total quantity equal to such party’s Allowed Pumping Allocation for the particular
22 Administrative Year, less any allocated subscriptions by such party to the
23 Exchange Pool, or plus any allocated requests by such party for purchase of
24 Exchange Pool water, is permitted to carry over (the “One Year Carryover”) from
25 such Administrative Year the right to extract from Central Basin in the next
26 succeeding Administrative Year so much of said total quantity as it did not extract
27 in the particular Administrative Year, not to exceed (i) the Applicable Percentage
28 of such party’s Allowed Pumping Allocation for the particular Administrative

1 Year, or 20 acre-feet, whichever of said percentage or 20 acre-feet is the larger,
2 less (ii) the total quantity of water then held in that party's combined Individual
3 and Community Storage accounts, as hereinafter defined, but in no event less than
4 20% of the party's Allowed Pumping Allocation for the particular Administrative
5 Year. For purposes of this Section, the "Applicable Percentage" shall be as
6 follows for the years indicated:

7

8 For the Administrative Year in which this	
9 Third Amended Judgment becomes final:	30%
10 For the next Administrative Year:	40%
11 For the next Administrative Year:	50%
12 For the next Administrative Year and years	
13 following:	60%

14 (2) Conversion of Carryover to Stored Water.

15 A party having Carryover may, from time to time, elect to convert all or
16 part of such party's Carryover to Stored Water as authorized herein ("Carryover
17 Conversion") upon payment of the Replenishment Assessment to WRD. Such
18 Stored Water shall be assigned to that party's Individual Storage Allocation, if
19 available, and otherwise to the Community Storage Pool.

20 (3) Declared Water Emergency.

21 The Board of Directors of WRD may, from time to time, declare a water
22 emergency upon a determination that conditions within the Central Basin relating
23 to natural and imported water supplies are such that, without implementation of
24 the Declared Water Emergency provisions of this subsection, the water resources
25 of the Central Basin risk degradation. In making such declaration, the Board of
26 Directors shall consider any information and requests provided by water
27 producers, purveyors and other affected entities and shall, for that purpose, hold a
28 public hearing in advance of such declaration. A Declared Water Emergency

1 shall extend to the end of the Administrative Year during which such resolution is
2 adopted, unless sooner ended by similar resolution.

3 (4) Drought Carryover.

4 Following the declaration of a Declared Water Emergency and until the
5 Declared Water Emergency ends either by expiration or by resolution of the
6 Board of Directors of WRD, each party adjudged to have a Total Water Right or
7 water rights and who, during a particular Administrative Year, does not extract
8 from Central Basin a total quantity equal to such party's Allowed Pumping
9 Allocation for the particular Administrative Year, less any allocated subscriptions
10 by such party to the Exchange Pool, or plus any allocated requests by such party
11 for purchase of Exchange Pool water, is permitted to carry over (the "Drought
12 Carryover") from such Administrative Year the right to extract from Central
13 Basin so much of said total quantity as it did not extract during the period of the
14 Declared Water Emergency, to the extent such quantity exceeds the One Year
15 Carryover, not to exceed an additional 35% of such party's Allowed Pumping
16 Allocation, or additional 35 acre feet, whichever of said 35% or 35 acre feet is the
17 larger, less the amount of such party's Stored Water. Carryover amounts shall
18 first be allocated to the One Year Carryover and any remaining carryover amount
19 for that year shall be allocated to the Drought Carryover.

20 (5) Accumulated Drought Carryover.

21 No further amounts shall be added to the Drought Carryover following the
22 end of the Declared Water Emergency, provided however that in the event
23 another Declared Water Emergency is declared, additional Drought Carryover
24 may be added, to the extent such additional Drought Carryover would not cause
25 the total Drought Carryover to exceed the limits set forth above. The Drought
26 Carryover shall be supplemental to and shall not affect any previous drought
27 carryover acquired by a party pursuant to previous order of the court.

28 B. When Over-Extractions May be Permitted.

1 (1) Underestimation of Requirements for Water.

2 Any party hereto without Stored Water, having an Allowed Pumping
3 Allocation, and not in violation of any provision of this Judgment may extract in
4 an Administrative Year an additional quantity of water not to exceed: (a) 20% of
5 such party's Allowed Pumping Allocation or 20 acre feet, whichever is greater,
6 and (b) any amount in addition thereto which may be approved in advance by the
7 Water Rights Panel of Watermaster.

8 (2) Reductions in Allowed Pumping Allocations in Succeeding Years
9 to Compensate for Permissible Overextractions.

10 Any such party's Allowed Pumping Allocation for the following
11 Administrative Year shall be reduced by the amount over-extracted pursuant to
12 paragraph 1 above, provided that if the Water Rights Panel determines that such
13 reduction in the party's Allowed Pumping Allocation in one Administrative Year
14 will impose upon such a party an unreasonable hardship, the said reduction in said
15 party's Allowed Pumping Allocation shall be prorated over a period of five (5)
16 Administrative Years succeeding that in which the excessive extractions by the
17 party occurred. Application for such relief to the Water Rights Panel must be
18 made not later than the 40th day after the end of the Administrative Year in which
19 such excessive pumping occurred. The Water Rights Panel shall grant such relief
20 if such over-extraction, or any portion thereof, occurred during a period of
21 Declared Water Emergency.

22 (3) Reductions in Allowed Pumping Allocations for the Next
23 Succeeding Administrative Year to Compensate for Overpumping.

24 Whenever, pursuant to Section III(B)(1), a party over-extracts in excess of
25 such party's Allowed Pumping Allocation plus that party's available One-Year
26 Carryover and any Stored Water held by that party, and such excess has not been
27 approved in advance by the Water Rights Panel, then such party's Allowed
28 Pumping Allocation for the following Administrative Year shall be reduced by an

1 amount equivalent to its total over-extractions in the particular Administrative
2 Year in which it occurred.

3 (4) Reports of Certain Over-extractions to the Court.

4 Whenever a party over-extracts in excess of 20% of such party's Allowed
5 Pumping Allocation for the particular Administrative Year plus that party's
6 available One-Year Carryover and any Stored Water held by that party, without
7 having obtained prior approval of the Water Rights Panel, such shall constitute a
8 violation of the Judgment and the Water Rights Panel shall make a written report
9 to the Court for such action as the Court may deem necessary. Such party shall be
10 subject to such injunctive and other processes and action as the Court might
11 otherwise take with regard to any other violation of such Judgment.

12 (5) Effect of Over-extractions on Rights.

13 Any party who over-extracts from Central Basin in any Administrative
14 Year shall not acquire any additional rights by reason of such over-extractions;
15 nor shall any required reductions in extractions during any subsequent years
16 reduce the Total Water Right or water rights of any party to the extent said over-
17 extractions are in compliance with paragraph 1 above.

18 (6) Pumping Under Agreement With Plaintiff During Periods of
19 Emergency.

20 Plaintiff WRD overlies Central Basin and engages in activities of
21 replenishing the groundwaters thereof. Plaintiff by resolution has appropriated
22 for use during emergencies the quantity of 17,000 acre feet of imported and
23 reclaimed water replenished by it into Central Basin, and pursuant to such
24 resolution Plaintiff reserves the right to use or cause the use of such quantity
25 during such emergency periods for the benefit of Water Purveyors.

26 (a) Notwithstanding any other provision of this Judgment,
27 parties who are Water Purveyors (including successors in interest) are
28 authorized to enter into agreements with Plaintiff for extraction of a

1 portion of Plaintiff's 17,000 acre-feet of appropriated water, in excess
2 of their respective Allowed Pumping Allocations for the particular
3 Administrative Year when the following conditions are met:

4 (i) Plaintiff is in receipt of a resolution of the
5 Board of Directors of the Metropolitan Water District of
6 Southern California ("MWD") that there is an actual or
7 immediately threatened temporary shortage of MWD's
8 imported water supply compared to MWD's needs, or a
9 temporary inability to deliver MWD's imported water
10 supply throughout its area, which will be alleviated by
11 overpumping from Central Basin.

12 (ii) The Board of Directors of both Plaintiff and
13 Central Basin Municipal Water District by resolutions
14 concur in the resolution of MWD's Board of Directors, and
15 the Board of Directors of Plaintiff finds in its resolution
16 that the average minimum elevation of water surface
17 among those wells in the Montebello Forebay of the
18 Central Basin designated as Los Angeles County Flood
19 Control District Wells Nos. 1601T, 1564P, 1615P, and
20 1626L, is at least 43.7 feet above sea level. This
21 computation shall be based upon the most recent "static
22 readings" taken, which shall have been taken not more than
23 four weeks prior. Should any of the wells designated above
24 become destroyed or otherwise be in a condition so that
25 readings cannot be made, or should the owner prevent their
26 use for such readings, the Board of Directors of the
27 Plaintiff may, upon appropriate engineering
28 recommendation, substitute such other well or wells as it

1 may deem appropriate.

2 (iii) In said resolution, Plaintiff's Board of
3 Directors sets a public hearing, and notice of the time, place
4 and date thereof (which may be continued from time to
5 time without further notice) is given by First Class Mail to
6 the current designees of the Parties, filed and served in
7 accordance with Section VI(C) of this Judgment. Said
8 notice shall be mailed at least five (5) days before the
9 scheduled hearing date.

10 (iv) At said public hearing, parties (including
11 successors in interest) are given full opportunity to be
12 heard, and at the conclusion thereof the Board of Directors
13 of Plaintiff by resolution decides to proceed with
14 agreements under this Section III(B)(6).

15 (b) All such agreements shall be subject to the following
16 requirements, and such others as Plaintiff's Board of Directors shall
17 require:

18 (i) They shall be of uniform content except as
19 to quantity involved, and any special provisions considered
20 necessary or desirable with respect to local hydrological
21 conditions or good hydrologic practice.

22 (ii) They shall be offered to all Water
23 Purveyors, excepting those which Plaintiff's Board of
24 Directors determines should not overpump because such
25 overpumping would occur in undesirable proximity to a sea
26 water barrier project designed to forestall sea water
27 intrusion, or within or in undesirable proximity to an area
28 within Central Basin wherein groundwater levels are at an

1 elevation where overpumping is under all the
2 circumstances then undesirable.

3 (iii) The maximum terms for the agreements
4 shall be four (4) months, which agreements shall
5 commence on the same date and end on the same date (and
6 which may be executed at any time within the four-month
7 period), unless an extension thereof is authorized by the
8 Court, under Part V of this Judgment.

9 (iv) They shall contain provisions requiring that
10 the Water Purveyor executing the agreement pay to the
11 Plaintiff a price in addition to the applicable replenishment
12 assessment determined on the following formula. The
13 normal price per acre-foot of Central Basin Municipal
14 Water District's (CBMWD) treated domestic and municipal
15 water, as "normal" price of such category of water is
16 defined in Section III(C)(10) (price to be paid for Exchange
17 Pool Water) as of the beginning of the contract term less
18 the deductions set forth in said paragraph 10 for the
19 Administrative Year in which the contract term
20 commences. The agreement shall provide for adjustments
21 in the first of said components for any proportional period
22 of the contract term during which the CBMWD said normal
23 price is changed, and if the agreement straddles two
24 administrative years, the said deductions shall be adjusted
25 for any proportionate period of the contract term in which
26 the amount thereof or of either subcomponent changes for
27 purposes of said paragraph 10. Any price for a partial acre-
28 foot shall be computed pro rata. Payments shall be due and

1 payable on the principle that over extractions under the
2 agreement are of the last water pumped in the
3 Administrative Year, and shall be payable as the agreement
4 shall provide.

5 (v) They shall contain provisions that: (1) All
6 of such agreements (but not less than all) shall be subject to
7 termination by Plaintiff if, in the Judgment of Plaintiff's
8 Board of Directors, the conditions or threatened conditions
9 upon which they were based have abated to the extent over
10 extractions are no longer considered necessary; and (2) that
11 any individual agreement or agreements may be terminated
12 if the Plaintiff's Board of Directors finds that adverse
13 hydrologic circumstances have developed as a result of
14 over extractions by any Water Purveyor(s) which have
15 executed said agreements, or for any other reason that
16 Plaintiff's Board of Directors finds good and sufficient.

17 (c) Other matters applicable to such agreements and
18 overpumping thereunder are as follows, without need for express
19 provisions in the agreements;

20 (i) The quantity of overpumping permitted shall
21 be additional to that which the Water Purveyor could
22 otherwise overpump under this Judgment.

23 (ii) The total quantity of permitted overpumping
24 under all said agreements during said four months shall not
25 exceed seventeen thousand (17,000) acre feet, but the
26 individual Water Purveyor shall not be responsible or
27 affected by any violation of this requirement. That total is
28 additional to over extractions otherwise permitted under

1 this Judgment.

2 (iii) Only one four month period may be utilized
3 by Plaintiff in entering into such agreements, as to any one
4 emergency or continuation thereof declared by MWD's
5 Board of Directors under Section III(B)(6)(a).

6 (iv) If any party claims it is being damaged or
7 threatened with damage by the over extractions by any
8 party to such an agreement, the first party or the Water
9 Rights Panel may seek appropriate action of the Court for
10 termination of any such agreement upon notice of hearing
11 to the party complaining, to the party to said agreement, to
12 the plaintiff, and to any parties who have filed a request for
13 special notice. Any termination shall not affect the
14 obligation of the party to make payments under the
15 agreement for over extractions which did occur thereunder.

16 (v) Plaintiff shall maintain separate accounting
17 of the proceeds from payments made pursuant to
18 agreements entered into under this Part. Said fund shall be
19 utilized solely for purposes of replenishment in
20 replacement of waters in Central Basin and West Basin.
21 Plaintiff shall as soon as practicable cause replenishment in
22 Central Basin by the amounts to be overproduced pursuant
23 to this Paragraph 6, whether through spreading, injection,
24 or in lieu agreements.

25 (vi) Over extractions pursuant to the agreements
26 shall not be subject to the "make up" provisions of the
27 Judgment as amended, provided that if any party fails to
28 make payments as required by the agreement, Plaintiff may

1 require such “make up” under Section III(B)(3) of this
2 Judgment.

3 (vii) A Water Purveyor under any such
4 agreement may, and is encouraged to enter into appropriate
5 arrangements with customers who have water rights in
6 Central Basin under or pursuant to this Judgment whereby
7 the Water Purveyor will be assisted in meeting the
8 objectives of the agreement.

9 (7) Exemption for Extractors of Contaminated Groundwater.

10 Any party herein may petition WRD for a Non-consumptive Water Use
11 Permit as part of a project to remedy or ameliorate groundwater contamination. If
12 the petition is granted as set forth in this paragraph, the petitioner may extract the
13 groundwater as permitted hereinafter, without the production counting against the
14 petitioner’s production rights.

15 (a) If the Board of WRD determines by Resolution that there is
16 a problem of groundwater contamination that a proposed program will
17 remedy or ameliorate, an operator may make extractions of
18 groundwater to remedy or ameliorate that problem without the
19 production counting against the petitioner’s production rights if the
20 water is not applied to beneficial surface use, its extractions are made
21 in compliance with all the terms and conditions of the Board
22 Resolution, and the Board has determined in the Resolution either of
23 the following:

24 (i) The groundwater to be extracted is unusable and
25 cannot be economically treated or blended for use with
26 other water.

27 (ii) The proposed program involves extraction of usable
28 water in the same quantity as will be returned to the

1 underground without degradation of quality.

2 (b) The Resolution may provide those terms and conditions the
3 Board deems appropriate, including, but not limited to, restrictions on
4 the quantity of the extractions to be so exempted, limitations on time,
5 periodic reviews, requirement of submission of test results from a
6 Board-approved laboratory, and any other relevant terms or conditions.

7 (c) Upon written notice to the operator involved, the Board
8 may rescind or modify its Resolution. The rescission or modification
9 of the Resolution shall apply to groundwater extractions occurring
10 more than ten (10) days after the rescission or modification. Notice of
11 rescission or modification shall be either mailed first class mail,
12 postage prepaid, at least two weeks prior to the meeting of the Board at
13 which the rescission or modification will be made to the address of
14 record of the operator or personally delivered two weeks prior to the
15 meeting.

16 (d) The Board's decision to grant, deny, modify or revoke a
17 permit or to interrupt or stop a permitted project may be appealed to
18 this court within thirty days of the notice thereof to the applicant and
19 upon thirty days' notice to the designees of all parties herein.

20 (e) WRD shall monitor and periodically inspect the project for
21 compliance with the terms and conditions for any permit issued
22 pursuant to these provisions.

23 (f) No party shall recover costs from any other party herein in
24 connection with determinations made with respect to this Part.

25 (8) “Call” on Carryover Converted to Stored Water.

26 Where any Party has elected, as permitted by Section III(A)(2), to convert
27 Carryover to Stored Water, any other Party which has not, within the previous ten
28 (10) years, been granted approval to extract Carryover Conversion under this

1 Section III(B)(8) more than five (5) times, may apply to the Storage Panel for the
2 right to extract all or a portion of that Carryover Conversion in the year such
3 Conversion occurs. The Storage Panel shall grant such request, providing there is
4 no Material Physical Harm, if it determines that leased groundwater to meet the
5 applicant's needs within the Basin cannot be obtained for less than forty-five
6 percent (45%) of MWD's Imported Water rate for delivery of untreated water to
7 the Central Basin spreading facilities (which rate is presently MWD's "Full
8 Service Untreated Volumetric Cost, Tier 1"), and that the applicant will fully
9 extract its Allowed Pumping Allocation, Carryover, and Stored Water, if any, in
10 addition to its permitted overextraction under Section III(B)(1), prior to accessing
11 such Carryover Conversion.

12 Upon such approval, the applicant may thereafter extract such water as
13 provided herein. A Party so extracting groundwater shall fully restore such
14 extracted water (either through under-extraction of its rights or through importing
15 water) during the five-year period following the Year in which the extraction
16 under this Section occurs. Otherwise, the extracting Party shall pay to the
17 Watermaster an amount equal to 100% of MWD's Imported Water rate for
18 purchase and delivery of untreated water to the Central Basin spreading facilities
19 (which rate is presently MWD's "Full Service Untreated Volumetric Cost, Tier
20 1") whether or not such water is available that year, for the year during which is
21 the fifth anniversary of the year during which such Carryover Conversion
22 extraction occurs, multiplied by the amount of Carryover Conversion so extracted
23 and not restored during such five-year period. Payment shall be made within
24 thirty (30) days of demand by Watermaster. No Replenishment Assessment shall
25 be due on Carryover Conversion so extracted. However, the Party must deposit
26 with the Watermaster an amount equal to the Replenishment Assessment that
27 would otherwise be imposed by WRD upon such extraction. If the party restores
28 the water within the 5-year repayment period, then the Watermaster shall

1 promptly return the deposit to the Party, without interest. If the Party does not
2 restore the water within the 5-year repayment period, the deposit shall be credited
3 towards the Party's obligation to pay 100% of MWD's Imported Water rate as
4 required herein.

5 Should there be multiple requests to so extract Carryover Conversion in
6 the same year, the Storage Panel shall allocate such extraction right such that each
7 requesting party may extract a pro rata portion of the available Carryover
8 Conversion for that year. No party may extract in excess of 2,500 acre feet of
9 groundwater pursuant to this Section III(B)(8) in a single Year. Amounts paid to
10 Watermaster hereunder shall be used by WRD solely for purchase of water for
11 replenishment in the Basin. Watermaster, through the Storage Panel, shall give
12 reasonable notice to the Parties of any application to so extract Carryover
13 Conversion in such manner as the Storage Panel shall determine, including,
14 without limitation, notice by electronic mail or by website posting, at least ten
15 (10) days prior to consideration of any such application.

16 C. Exchange Pool Provisions.

17 (1) Definitions.

18 For purposes of these Exchange Pool provisions, the following words and
19 terms have the following meanings:

20 (a) "Exchange Pool" is the arrangement hereinafter set forth
21 whereby certain of the parties, ("Exchangees") may, notwithstanding
22 the other provisions of the Judgment, extract additional water from
23 Central Basin to meet their needs, and certain other of the parties
24 ("Exchangors"), reduce their extractions below their Allowed Pumping
25 Allocations in order to permit such additional extractions by others.

26 (b) "Exchangor" is one who offers, voluntarily or otherwise,
27 pursuant to subsequent provisions, to reduce its extractions below its
28 Allowed Pumping Allocation in order to permit such additional

1 extractions by others.

2 (c) “Exchangee” is one who requests permission to extract
3 additional water from Central Basin.

4 (d) “Undue hardship” means unusual and severe economic or
5 operational hardship, other than that arising (i) by reason of any
6 differential in quality that might exist between water extracted from
7 Central Basin and water available for importation or (ii) by reason of
8 any difference in cost to a party in subscribing to the Exchange Pool
9 and reducing its extractions of water from Central Basin in an
10 equivalent amount as opposed to extracting any such quantity itself.

11 (2) Parties Who May Purchase Water Through the Exchange Pool.

12 Any party not having existing facilities for the taking of imported water as
13 of the beginning of any Administrative Year, and any party having such facilities
14 as of the beginning of any Administrative Year who is unable, without undue
15 hardship, to obtain, take, and put to beneficial use, through its distribution system
16 or systems existing as of the beginning of the particular Administrative Year,
17 imported water in a quantity which, when added to its Allowed Pumping
18 Allocation for that particular Administrative Year, will meet its estimated needs
19 for that particular Administrative Year, may purchase water from the Exchange
20 Pool, subject to the limitations contained in this Section III(C) (Subpart “C”
21 hereinafter).

22 (3) Procedure for Purchasing Exchange Pool Water.

23 Not later than the 40th day following the commencement of each
24 Administrative Year, each such party desiring to purchase water from the
25 Exchange Pool shall file with the Watermaster a request to so purchase, setting
26 forth the amount of water in acre feet that such party estimates that it will require
27 during the then current Administrative Year in excess of the total of:

28 (a) Its Allowed Pumping Allocation for that particular

1 Administrative Year; and

2 (b) The imported water, if any, which it estimates it will be
3 able, without undue hardship, to obtain, take and put to beneficial use,
4 through its distribution system or systems existing as of the beginning
5 of that particular Administrative Year.

6 Any party who as of the beginning of any Administrative Year has
7 existing facilities for the taking of imported water and who makes a request to
8 purchase from the Exchange Pool must provide with such request substantiating
9 data and other proof which, together with any further data and other proof
10 requested by the Water Rights Panel, establishes that such party is unable without
11 undue hardship, to obtain, take and put to beneficial use through its said
12 distribution system or systems a sufficient quantity of imported water which,
13 when added to its said Allowed Pumping Allocation for the particular
14 Administrative Year, will meet its estimated needs. As to any such party, the
15 Water Rights Panel shall make a determination whether the party has so
16 established such inability, which determination shall be subject to review by the
17 court under the procedure set forth in Part II of this Judgment. Any party making
18 a request to purchase from the Exchange Pool shall either furnish such
19 substantiating data and other proof, or a statement that such party had no existing
20 facilities for the taking of imported water as of the beginning of that
21 Administrative Year, and in either event a statement of the basis for the quantity
22 requested to be purchased.

23 (4) Subscriptions to Exchange Pool.

24 (a) Required Subscription. Each party having existing
25 facilities for the taking of imported water as of the beginning of any
26 Administrative Year hereby subscribed to the Exchange Pool for
27 purposes of meeting Category (a) requests thereon, as more
28 particularly defined in paragraph 5 of this Subpart C, twenty percent

1 (20%) of its Allowed Pumping Allocation, or the quantity of imported
2 water which it is able, without undue hardship, to obtain, take and put
3 to beneficial use through its distribution system or systems existing as
4 of the beginning of the particular Administrative Year in addition to
5 such party's own estimated needs for imported water during that
6 Administrative Year, whichever is the lesser. A party's subscription
7 under this subparagraph (a) and subparagraph (b) of this paragraph 4 is
8 sometimes hereinafter referred to as a "required subscription."

9 (b) Report to Watermaster Water Rights Panel by Parties with
10 Connections and Unable to Subscribe 20%. Any party having existing
11 facilities for the taking of imported water and estimating that it will be
12 unable, without undue hardship, in that Administrative Year to obtain,
13 take and put to beneficial use through its distribution system or
14 systems existing as of the beginning of that Administrative Year,
15 sufficient imported water to further reduce its extractions from the
16 Central Basin by twenty percent (20%) of its Allowed Pumping
17 Allocation for purposes of providing water to the Exchange Pool must
18 furnish not later than the 40th day following the commencement of
19 such Administrative Year substantiating data and other proof which,
20 together with any further data and other proof requested by the Water
21 Rights Panel, establishes said inability or such party shall be deemed
22 to have subscribed twenty percent (20%) of its Allowed Pumping
23 Allocation for the purpose of providing water to the Exchange Pool.
24 As to any such party so contending such inability, the Water Rights
25 Panel shall make a determination whether the party has so established
26 such inability, which determination shall be subject to review by the
27 Court under the procedure set forth in Part II of this Judgment.

28 (c) Voluntary Subscriptions. Any party, whether or not having

1 facilities for the taking of imported water, who desires to subscribe to
2 the Exchange Pool a quantity or further quantity of its Allowed
3 Pumping Allocation, may so notify the Water Rights Panel in writing
4 of the quantity of such offer on or prior to the 40th day following the
5 commencement of the particular Administrative Year. Such
6 subscriptions are referred to hereinafter as “voluntary subscriptions.”
7 Any Exchangor who desires that any part of its otherwise required
8 subscription not needed to fill Category (a) requests shall be available
9 for Category (b) requests may so notify the Water Rights Panel in
10 writing on or prior to said 40th day. If all of that Exchangor’s
11 otherwise required subscription is not needed in order to fill Category
12 (a) requests, the remainder of such required subscription not so used,
13 or such part thereof as such Exchangor may designate, shall be deemed
14 to be a voluntary subscription.

15 (5) Limitations on Purchases of Exchange Pool Water and Allocation
16 of Requests to Purchase Exchange Pool Water Among Exchangors.

17 (a) Categories of Requests. Two categories of Exchange Pool
18 requests are established as follows:

19 (i) Category (a) requests. The quantity requested by
20 each Exchangee, whether or not that Exchangee has an
21 Allowed Pumping Allocation, which quantity is not in
22 excess of 150% of its Allowed Pumping Allocation, if any,
23 or 100 acre feet, whichever is greater. Requests or portions
24 thereof within the above criteria are sometimes hereinafter
25 referred to as “Category (a) requests.”

26 (ii) Category (b) requests. The quantity requested by
27 each Exchangee having an Allowed Pumping Allocation to
28 the extent the request is in excess of 150% of that Allowed

1 Pumping Allocation or 100 acre feet, whichever is greater,
2 and the quantity requested by each Exchangee having no
3 Allowed Pumping Allocation to the extent the request is in
4 excess of 100 acre feet. Portions of requests within the
5 above criteria are sometimes hereinafter referred to as
6 “Category (b) requests.”

7 (b) Filling of Category (a) Requests. All Exchange Pool
8 subscriptions, required and voluntary, shall be available to fill
9 Category (a) requests. Category (a) requests shall be filled first from
10 voluntary subscriptions, and if voluntary subscriptions should be
11 insufficient to fill all Category (a) requests required subscriptions shall
12 be then utilized to fill Category (a) requests. All Category (a) requests
13 shall be first filled before any Category (b) requests are filled.

14 (c) Filling of Category (b) Requests. To the extent that
15 voluntary subscriptions have not been utilized in filling Category (a)
16 requests, Category (b) requests shall be filled only out of any
17 remaining voluntary subscriptions. Required subscriptions will then
18 be utilized for the filling of any remaining Category (b) requests.

19 (d) Allocation of Requests to Subscriptions When Available
20 Subscriptions Exceed Requests. In the event the quantity of
21 subscriptions available for any category of requests exceeds those
22 requests in that category, or exceeds the remainder of those requests in
23 that category, such requests shall be filled out of such subscriptions
24 proportionately in relation to the quantity of each subscription.

25 (e) Allocation of Subscriptions to Category (b) Requests in the
26 Event of Shortage of Subscriptions. In the event available
27 subscriptions are insufficient to meet Category (b) requests, available
28 subscriptions shall be allocated to each request in the proportion that

1 the particular request bears to the total requests of the particular
2 category.

3 (6) Additional Voluntary Subscriptions.

4 If subscriptions available to meet the requests of Exchangees are
5 insufficient to meet all requests, additional voluntary subscriptions may be
6 solicited and received from parties by the Water Rights Panel. Such additional
7 subscriptions shall be allocated first to Category (a) requests to the extent unfilled,
8 and next to Category (b) requests to the extent unfilled. All allocations are to be
9 otherwise in the same manner as earlier provided in paragraph 5 (a) through 5 (e)
10 inclusive.

11 (7) Effect if Category (a) Requests Exceed Available Subscriptions,
12 Both Required and Voluntary.

13 In the event that the quantity of subscriptions available to fill Category (a)
14 requests is less than the total quantity of such requests, the Exchangees may,
15 nonetheless, extract the full amount of their Category (a) requests otherwise
16 approved by the Water Rights Panel as if sufficient subscriptions were available.
17 The amounts received by the Water Rights Panel on account of that portion of the
18 approved requests in excess of the total quantities available from Exchangors
19 shall be paid by the Water Rights Panel to WRD in trust for the purpose of
20 purchasing imported water and spreading the same in Central Basin for
21 replenishment thereof. Thereafter WRD may, at any time, withdraw said funds or
22 any part thereof so credited in trust for the aforesaid purpose, or may by the 40th
23 day of any Administrative Year utilize all or any portion of said funds for the
24 purchase of water available from subscriptions by Exchangors in the event the
25 total quantity of such subscriptions exceeds the total quantity of approved
26 requests by parties to purchase Exchange Pool water. To the extent that there is
27 such an excess of available subscriptions over requests and to the extent that the
28 existing credit in favor of WRD is sufficient to purchase such excess quantity at

1 the price established for Exchange Pool purchases during that Administrative
2 Year, the money shall be paid to the Exchangors in the same manner as if another
3 party had made such purchase as an Exchangee. WRD shall not extract any such
4 Exchange Pool water so purchased.

5 (8) Additional Pumping by Exchangees Pursuant to Exchange Pool
6 Provisions.

7 An Exchangee may extract from Central Basin in addition to its Allowed
8 Pumping Allocation for a particular Administrative Year that quantity of water
9 which it has requested to purchase from the Exchange Pool during that
10 Administrative Year and which has been allocated to it pursuant to the provisions
11 of paragraphs 5, 6 and 7. The first pumping by an Exchangee in any
12 Administrative Year shall be deemed to be pumping of the party's allocation of
13 Exchange Pool water.

14 (9) Reduction in Pumping by Exchangors.

15 Each Exchangor shall in each Administrative Year reduce its extractions
16 of water from Central Basin below its Allowed Pumping Allocation for the
17 particular year in a quantity equal to the quantity of Exchange Pool requests
18 allocated to it pursuant to the provisions of paragraphs 4, 5, 6 and 7 of this
19 Subpart C.

20 (10) Price to be Paid for Exchange Pool Water.

21 The price to be paid by Exchangees and to be paid to Exchangors per acre
22 foot for required and voluntary subscriptions of Exchangors utilized to fill
23 requests on the Exchange Pool by Exchangees shall be the dollar amount
24 computed as follows by the Water Rights Panel for each Administrative Year.
25 The "normal" price as of the beginning of the Administrative Year charged by
26 Central Basin Municipal Water District (CBMWD) for treated MWD
27 (Metropolitan Water District of Southern California) water used for domestic and
28 municipal purposes shall be determined, and if on that date there are any changes

1 scheduled during that Administrative Year in CBMWD’s “normal” price for such
2 category of water, the weighted daily “normal” CBMWD price shall be
3 determined and used in lieu of the beginning such price; and there shall be
4 deducted from such beginning or weighted price, as the case may be, the
5 “incremental cost of pumping water in Central Basin” at the beginning of the
6 Administrative Year and any then current rate or rates, of assessments levied on
7 the pumping of groundwater in Central Basin by Plaintiff District and any other
8 governmental agency. The “normal” price charged by CBMWD shall be the
9 highest price of CBMWD for normal service excluding any surcharge or higher
10 rate for emergency deliveries or otherwise failing to comply with CBMWD rates
11 and regulations relating to earlier deliveries. The “incremental cost of pumping
12 water in Central Basin” as of the beginning of the Administrative Year shall be
13 deemed to be the Southern California Edison Company Schedule No. PA-1 rate
14 per kilowatt-hour, including all adjustments and all uniform authorized additions
15 to the basic rate, multiplied by 560 kilowatt-hours per acre-foot, rounded to the
16 nearest dollar (which number of kilowatt-hours has been determined to represent
17 the average energy consumption to pump an acre-foot of water in Central Basin).
18 In applying said PA-1 rate the charge per kilowatt-hour under the schedule shall
19 be employed and if there are any rate blocks then the last rate block shall be
20 employed. Should a change occur in Edison schedule designations, the Water
21 Rights Panel shall employ that applicable to motors used for pumping water by
22 municipal utilities.

23 (11) Carry-over of Exchange Pool Purchases by Exchangees.

24 An Exchangee who does not extract from Central Basin in a particular
25 Administrative Year a quantity of water equal to the total of (a) its Allowed
26 Pumping Allocation for that particular Administrative Year, reduced by any
27 authorized amount of carryover into the next succeeding Administrative Year
28 pursuant to the provisions of Section III(A) of this Judgment, and (b) the quantity

1 that it purchased from the Exchange Pool for that particular Administrative Year,
2 may carry over into the next succeeding Administrative Year the right to extract
3 from Central Basin a quantity equal to the difference between said total and the
4 quantity actually extracted in that Administrative Year, but not exceeding the
5 quantity purchased from the Exchange Pool for that Administrative Year. Any
6 such carryover shall be in addition to that provided in said Section III(A).

7 If the "Basinwide Average Exchange Pool Price" in the next succeeding
8 Administrative Year exceeds the "Exchange Pool Price" in the previous
9 Administrative Year any such Exchangee exercising such carryover rights
10 hereinabove provided shall pay to the Watermaster, forthwith upon the
11 determination of the "Exchange Pool Price" in said succeeding Administrative
12 Year, and as a condition to such carryover rights, an additional amount
13 determined by multiplying the number of acre feet of carryover by the difference
14 in "Exchange Pool Price" as between the two Administrative Years. Such
15 additional payment shall be miscellaneous income to the Watermaster which shall
16 be applied by it against that share of the Watermaster's Administrative Body's
17 budget to be paid by the parties to this Agreement for the second Administrative
18 Year succeeding that in which the Exchange Pool water was so purchased. For
19 purposes of this paragraph, the term Basinwide Average Exchange Pool Price
20 means the average price per acre foot paid for Exchange Pool water produced
21 within the Central Basin during the year for which such determination is to be
22 made, taking into account all Exchange Pool transactions consummated during
23 that year.

24 (12) Notification by Watermaster to Exchangors and Exchangees of
25 Exchange Pool Requests and Allocations Thereof and Price of Exchange Pool
26 Water.

27 Not later than the 65th day after the commencement of each
28 Administrative Year, the Administrative Body of Watermaster shall determine

1 and notify all Exchangors and Exchangees of the total of the allocated requests for
2 Exchange Pool water and shall provide a schedule divided into categories of
3 requests showing the quantity allocated to each Exchangee and a schedule of the
4 allocation of the total Exchange Pool requirements among the Exchangors. Such
5 notification shall also advise Exchangors and Exchangees of the prices to be paid
6 to Exchangors for subscriptions utilized and the Exchange Pool Price for that
7 Administrative Year as determined by the Water Rights Panel. The
8 determinations of the Watermaster in this regard shall be subject to review by the
9 Court in accordance with the procedure set forth in Part II of this Judgment.

10 (13) Payment by Exchangees.

11 Each Exchangee shall, on or prior to last day of the third month of each
12 Administrative Year, pay to the Watermaster one-quarter of said price per acre-
13 foot multiplied by the number of acre feet of such party's approved request and
14 shall, on or before the last day of each of the next succeeding three months, pay a
15 like sum to the Watermaster. Such amounts must be paid by each Exchangee
16 regardless of whether or not it in fact extracts or uses any of the water it has
17 requested to purchase from the Exchange Pool.

18 (14) Payments to Exchangors.

19 As soon as possible after receipt of moneys from Exchangees, the
20 Watermaster shall remit to the Exchangors their pro rata portions of the amount so
21 received in accordance with the provisions of paragraph 10 above.

22 (15) Delinquent Payments.

23 Any amounts not paid on or prior to any due date above shall carry interest
24 at the rate of 1% per month or any part of a month. Any amounts required to be
25 so paid may be enforced by the equitable powers of the Court, including, but not
26 limited to, the injunctive process of the Court. In addition thereto, the
27 Watermaster, as Trustee for the Exchangors and acting through the Water Rights
28 Panel, may enforce such payment by any appropriate legal action, and shall be

1 entitled to recover as additional damages reasonable attorneys' fees incurred in
2 connection therewith. If any Exchangee shall fail to make any payments required
3 of it on or before 30 days after the last payment is due, including any accrued
4 interest, said party shall thenceforward not be entitled to purchase water from the
5 Exchange Pool in any succeeding Administrative Year except upon order of the
6 Court, upon such conditions as the Court may impose.

7
8 IV. PROVISIONS FOR THE STORAGE OF WATER AND THE EXTRACTION
9 OF STORED WATER.

10 A. Adjudication of Available Dewatered Space, Storage Capacity and
11 Storage Apportionment.

12 There exists within the Basin a substantial amount of available space which has
13 not been optimally utilized for basin management and for storage of native and imported
14 waters. The Court finds and determines that (i) there is 330,000 acre feet of Available
15 Dewatered Space in the Basin; (ii) use of this Available Dewatered Space will increase
16 reasonable and beneficial use of the Basin by permitting the more efficient procurement
17 and management of Replenishment Water, conjunctive use, and for direct and in-lieu
18 recharge, thereby increasing the prudent storage and recovery of Stored Water for later
19 use by parties to this Judgment, conservation of water and reliability of the water supply
20 available to all Parties; and (iii) use of the Available Dewatered Space pursuant to the
21 terms and conditions of this Judgment will not result in Material Physical Harm.

22 B. Avoidance of Material Physical Harm.

23 It is essential that the use of the Available Dewatered Space be undertaken for the
24 greatest public benefit pursuant to uniform, certain, and transparent regulation that
25 encourages the conservation of water and reliability of the water supply, avoids Material
26 Physical Harm, and promotes the reasonable and beneficial use of water. Accordingly,
27 in the event Watermaster becomes aware of the development of a Material Physical
28 Harm, or imminent threat of the development of a Material Physical Harm, relating to the

1 use of the Available Dewatered Space, Watermaster shall, within thirty (30) days
2 thereafter, notice a hearing before the Court and concurrently file a report with the Court,
3 served on all parties, which shall explain the relevant facts then known to Watermaster
4 relating to the Material Physical Harm, or imminent threat thereof, including without
5 limitation, the location of the occurrence, the source or cause, existing and potential
6 physical impacts or consequences of the identified or threatened material Physical Harm,
7 and any recommendations to remediate the identified or threatened Material Physical
8 Harm.

9 C. Apportionment of Available Dewatered Space.

10 To fairly balance the needs of the divergent interests of parties having water rights
11 in the Basin, on the one hand, and the replenishment functions of WRD on the other
12 hand, and in consideration of the shared desire and public purpose of removing
13 impediments to the voluntary conservation, storage, exchange and transfer of water, all
14 of the Available Dewatered Space is hereby adjudicated and apportioned into
15 complimentary classifications of Stored Water and a Basin Operating Reserve as set
16 forth in this Part IV. The apportionment contemplates flexible administration of storage
17 capacity where use is apportioned among competing needs, while allowing all Available
18 Dewatered Space to be used from time to time on a “space available” basis, subject to the
19 priorities specified in this Judgment, and as further defined in Section IV(I) of this
20 Judgment. The Court further finds and determines that, of the Available Dewatered
21 Space, there is 220,000 acre-feet of storage capacity in the Central Basin which is
22 presently available (“Adjudicated Storage Capacity”). The use of Adjudicated Storage
23 Capacity as provided in this Judgment will not adversely affect the efficient operation of
24 the Basin or the recharge of water necessary for the production of the parties’ respective
25 Allowed Pumping Allocations. The apportionment of Adjudicated Storage Capacity as
26 provided herein will allow for flexible administration of groundwater storage within the
27 Basin. The Adjudicated Storage Capacity is hereby assigned to Individual Storage
28 Allocations and Community Storage as provided herein, provided however that if all

1 space in a particular classification is fully occupied then, on a “space available” basis, to
2 available space within the other classifications of Adjudicated Storage Capacity and,
3 only then, to available space within Basin Operating Reserve.

4 The Court further finds and determines that, out of the Available Dewatered
5 Space, there is 110,000 acre feet that should be set aside for use by WRD as a Basin
6 Operating Reserve, provided in Section IV(L), and subject to temporary occupancy by
7 Stored Water as permitted hereunder.

8 No storage of water shall occur in the Basin except in conformity with this
9 Judgment.

10 D. Individual Storage Allocation.

11 Each Party having an adjudicated groundwater extraction right hereunder shall
12 have a priority right to store water in an Individual Storage Account, through conversion
13 of Carryover to Stored Water as provided herein, or by any means authorized by this
14 Judgment, up to a maximum of 50% of such party’s Allowed Pumping Allocation. The
15 cumulative quantity of Adjudicated Storage Capacity subject to individual storage
16 allocation is 108,750 acre-feet. In recognition of prior importation of water which was
17 introduced into the Basin as Stored Water, and which has not yet been extracted, the
18 Court finds and determines that, as of the date of this Order, the following Parties have
19 occupied a portion of their respective Individual Storage Allocations and have all
20 associated rights therein, as follows:

21	City of Long Beach:	13,076.8 acre-feet
22	City of Lakewood:	500 acre-feet
23	City of Downey:	500 acre-feet
24	City of Cerritos	500 acre-feet

25 E. Community Storage; Regional Disadvantaged Communities Incentive
26 Program.

27 In addition to Individual Storage Allocation, a Party that has fully occupied its
28 Individual Storage allocation may, on a first in time, first in right basis (subject to the

1 limits expressed below) place water into storage in the “Community Storage Pool.” The
2 cumulative quantity of Adjudicated Storage Capacity allocated to Community Storage
3 shall be 111,250 acre-feet. So long as there is available capacity in the Community
4 Storage Pool, any Party may store water in the Community Storage Pool through
5 conversion of Carryover to Stored Water as provided herein, or by any other means
6 authorized by this Judgment, provided such Party has first fully occupied that party’s
7 available Individual Storage Allocation.

8 (1) Parties to this Judgment which, as of January 1, 2013, held
9 Allowed Pumping Allocation of not greater than 5,000 acre-feet shall have a first
10 priority right to occupy, in the aggregate, up to 10,000 acre-feet of storage space
11 within the Central Basin Community Storage Pool, on the basis of first in time,
12 first in right.

13 (2) Water stored pursuant to the Regional Disadvantaged
14 Communities Incentive Program shall have a second priority right to occupy up to
15 23,000 acre-feet within the Community Storage Pool, on such terms as shall be
16 determined by the Court.

17 (3) Any further storage in excess of the maximum quantity of
18 Community Storage will be on a “space-available” interim basis. From time to
19 time, and on a “space-available” basis, the total quantity of water available for
20 storage is permitted to exceed Adjudicated Storage Capacity for the Community
21 Storage Pool on an interim basis. This interim storage may occur if storage
22 capacity exists as a result of unused Adjudicated Storage Capacity within other
23 classifications, or available space exists in the Basin Operating Reserve. Such
24 interim storage, however, is subject to priority rights to such Dewatered Space as
25 provided in this Judgment. A party that seeks to convert the water temporarily
26 held in interim storage to a more firm right, may contract for the use of another
27 party’s Individual Storage Allocation, or may add such water to the Community
28 Storage Pool once space therein becomes available.

1 (4) After a party occupies available storage capacity within the
2 Community Storage Pool and then withdraws water from the Community Storage
3 Pool, the storing party will be allowed a period of twenty-four (24) months to
4 refill the evacuated storage before the capacity will be determined excess and
5 available for use by other parties. Once the Basin's Community Storage Pool has
6 been filled for the first time, a party may exercise its twenty-four (24) month refill
7 priority only once, and then only provided there is then capacity available to
8 permit that party to refill the vacated space. Except to the extent Community
9 Storage space may be subject to such priority right to re-fill, all space therein shall
10 be occupied on a first in time, first in right basis.

11 (5) A party that has occupied storage in the Community Storage Pool
12 for ten (10) consecutive years shall be deemed to extract its Stored Water first in
13 subsequent years (notwithstanding the order of water production set forth in
14 Section I(B)(3)) until its entire Community Storage account has been extracted,
15 but thereafter may again make use of Community Storage on the same terms
16 available to other parties on a first in time, first in right, space-available basis.

17 (6) Any quantity of water held in the Community Storage Pool for a
18 term greater than ten (10) consecutive years shall be assessed an annual water loss
19 equal to 5% of the lowest quantity of water held within the party's Community
20 Storage Pool account at any time during the immediately preceding ten-year
21 period. The lowest quantity means the smallest amount of water held by the Party
22 in the Community Storage Pool during any of the preceding ten (10) years, with a
23 new loss calculation being undertaken every year. Water subject to the loss
24 assessment will be deemed dedicated to the Basin Operating Reserve in
25 furtherance of the physical solution without compensation. Water lost to the
26 Basin shall constitute water replenished into the Central Basin for the benefit of
27 all parties

28 F. Limit on Storage.

1 Irrespective of the category of storage utilized, each party to this Judgment may
2 not cumulatively have in storage at any time Stored Water totaling more than two
3 hundred percent (200%) of that party's Allowed Pumping Allocation. Subject to the
4 foregoing, the right to produce Stored Water may be freely transferred to another party to
5 this Judgment, or as otherwise permitted herein.

6 G. Extractions of Stored Water; Exemption from Replenishment Assessment.

7 The Court finds and declares that the extraction of Stored Water as permitted
8 hereunder does not constitute "production of groundwater" within the meaning of Water
9 Code Section 60317 and that no Replenishment Assessment shall be levied on the
10 extraction of Stored Water. WRD has stipulated to the same. This determination reflects
11 the practical application of certain provisions of this Judgment concerning storage of
12 water, including, without limitation, understanding the following: (1) payment of the
13 Replenishment Assessment is required upon the conversion of Carryover Water into
14 storage, and; (2) developed water introduced into the Basin for storage by or on behalf of
15 a Party through spreading or injection need not be replenished by WRD and should not
16 be subject to the Replenishment Assessment.

17 H. Storage Procedure.

18 The Administrative Body shall (i) prescribe forms and procedures for the orderly
19 reporting of Stored Water, (ii) maintain records of all water stored in the Basin, and (iii)
20 undertake monitoring and modeling of Stored Water as may be reasonably required. As
21 to any Storage Projects that will require review and approval by the Storage Panel, the
22 Administrative Body shall provide appropriate applications, and shall work with project
23 applicants to complete the application documents for presentation to the Storage Panel.
24 The Administrative Body shall be responsible for conducting any groundwater modeling
25 necessary to evaluate a proposed Storage Project. The proponent of a proposed project
26 will bear all costs associated with the review of the application for approval of the project
27 and all costs associated with its implementation. Nothing in this Judgment shall alter the
28 applicant(s) duty to comply with CEQA or to meet other legal requirements as to any

1 proposed Storage Project. Within thirty (30) days after final submission of the storage
2 application documents, the Administrative Body shall provide notice of the storage
3 application (either by electronic mail or U.S. postal mail), together with a copy of the
4 application documents, to all parties possessing an Allowed Pumping Allocation, and to
5 any other person requesting notice thereof. Following notice, any necessary hearings
6 before the Storage Panel shall be conducted as provided in Section IV(O) of this
7 Judgment.

8 I. Loss of Stored Water/Relative Priority.

9 To balance the need to protect priority uses of storage and to encourage the full
10 utilization of Adjudicated Storage Capacity and Basin Operating Reserve where it can be
11 accommodated without interference with priority uses, and except as otherwise provided
12 in this Judgment, no water held in any authorized storage account will be deemed lost
13 from that storage account unless the cumulative quantity of water held as Stored Water
14 plus the quantity of water held within the Basin Operating Reserve exceeds 330,000
15 acre-feet. Where all Adjudicated Storage Capacity and Basin Operating Reserve has
16 been occupied, the first Stored Water to be deemed lost shall be the last water stored as
17 Community Storage. Upon receipt of a bona fide request by another use entitled to
18 priority hereunder, Watermaster shall issue a notice requiring the other parties to
19 evacuate their Stored Water. Any Stored Water that is not evacuated shall be deemed
20 dedicated to the Basin Operating Reserve in furtherance of the physical solution without
21 compensation and accounted for accordingly.

22 J. Limits on Extraction.

23 Anything in this Judgment to the contrary notwithstanding, no party shall extract
24 greater than 140% of the sum of (i) the party's Allowed Pumping Allocation and (ii) the
25 party's leased water, except upon prior approval by the Water Rights Panel. For this
26 purpose, a party's total extraction right for a particular year shall include that party's
27 Allowed Pumping Allocation and any contractual right through lease or other means to
28 utilize the adjudicated rights of another party. Where such proposed extraction would

1 occur within the Central Basin Pressure Area as defined by Watermaster consistent with
2 historical records, the Water Rights Panel shall submit such request for review by the
3 Board of WRD. The Water Rights Panel shall not approve any request for over-
4 extraction within the Pressure Area without a written finding by the Board of WRD that
5 such over-extraction will not cause Material Physical Harm. The role of the Board of
6 WRD in this process shall not be read to expand or restrict WRD's statutory authority.
7 Consideration shall be on an expedited basis.

8 K. Increased Extractions in the Central Basin for Certain Water Purveyors.

9 (1) This Court also maintains continuing jurisdiction over the West
10 Coast Basin, which bounds the Central Basin to the west.

11 (2) Certain Water Purveyors are parties to both this Amended
12 Judgment and the judgment governing the West Coast Basin and serve
13 communities overlying both the Central Basin and the West Coast Basin.

14 (3) Certain Water Purveyors may exceed their Allowed Pumping
15 Allocation in any Administrative Year, subject to all of the following conditions:

16 (a) The Water Purveyor is one of the following eligible Parties:

17 (i) City of Los Angeles

18 (ii) Golden State Water Company

19 (iii) California Water Service Company.

20 (b) Increased extractions pursuant to this Section shall not
21 exceed 5,000 acre-feet per Water Purveyor for the particular
22 Administrative Year.

23 (c) Increased extractions pursuant to this Section shall not
24 exceed the Water Purveyor's unused "Adjudicated Rights" in the West
25 Coast Basin.

26 (d) Increased extractions pursuant to this Section shall not
27 result in Material Physical Harm.

28 (4) Notwithstanding the foregoing, nothing herein permits extraction

1 of water within the Central Basin in excess of 140% of Allowed Pumping
2 Allocation for the particular Administrative Year, except as otherwise permitted
3 under this Judgment.

4 (5) Replenishment of any water extracted from the Central Basin
5 pursuant to this Section shall occur exclusively in the Central Basin.

6 (6) The benefits of this Section are made available only to the certain
7 Water Purveyors that serve communities overlying the Central Basin and
8 communities overlying the West Basin, in recognition of the management of
9 water resources by those Water Purveyors to serve such overlying communities.
10 It is not made, nor is it related to, a determination of an underflow between the
11 basins, a cost or benefit allocation, or any other factor relating to the allocation of
12 the Replenishment Assessment.

13 L. Special Provisions for Temporary Storage within Community Storage
14 Pool.

15 The Central Basin Municipal Water District (“CBMWD”) shall take such action
16 as may be necessary to reduce its Allowed Pumping Allocation to five (5) acre-feet or
17 fewer by December 31, 2018, and has agreed, by stipulation, not to acquire any
18 additional Central Basin water rights. Upon application by CBMWD, the Storage Panel
19 may, after making each of the findings required in this subsection, approve storage of
20 water by CBMWD within the Community Storage Pool subject to the stated conditions.
21 The Storage Panel may only authorize such storage after finding each of the following to
22 be true as of the date of such approval:

23 (1) CBMWD (a) then owns five (5) acre-feet or fewer of Allowed
24 Pumping Allocation, and (b) has not produced water utilizing any extraction
25 rights it holds within the Basin but has only engaged in the sale or leasing of those
26 rights to others.

27
28 (2) There is available space for Storage within the Community Storage

1 Pool.

2
3 (3) CBMWD has identified a source of imported water that may be
4 brought into the Basin and stored underground.

5 (4) The water identified for storage (a) is unlikely to be acquired by
6 other parties through surface delivery for use within the Basin, and (b) was
7 offered to WRD to purchase for replenishment purposes at the same price that
8 CBMWD otherwise sells imported water to WRD and WRD declined to purchase
9 said water, within a reasonable period of time.

10
11 (5) There will be no Material Physical Harm associated with the
12 introduction of the water into storage, or its extraction, in the manner approved by
13 the Storage Panel.

14 The condition expressed in Section IV(L)(1)(a) above shall not be operative until
15 January 1, 2019, or upon reduction of CBMWD's Allowed Pumping Allocation
16 to five (5) acre-feet or fewer, whichever first occurs. CBMWD may not extract
17 the Stored Water, and may instead only transfer that Stored Water to a party
18 having extraction rights, or to WRD for replenishment purposes only. Such
19 Stored Water not so transferred within three (3) years following its storage may
20 be purchased by WRD, at its option, for replenishment purposes only, at a price
21 not exceeding the actual cost incurred by CBMWD in importing and storing the
22 water in the first instance, plus a reasonable administrative charge for overhead
23 not exceeding five percent (5%) of the price paid by CBMWD for the water with
24 no other fees or markups imposed by CBMWD. Except as otherwise permitted in
25 this Section, any such Stored Water held by CBMWD for a term greater than
26 three (3) years shall be assessed an annual water loss equal to 10% of the amount
27 of such Stored Water at the end of each year. Water subject to the loss
28

1 assessment will be deemed dedicated to the Basin Operating Reserve in
2 furtherance of the physical solution without further compensation. The Storage
3 Panel shall grant CBMWD one or more extensions of such term, not exceeding
4 total extensions of three (3) additional years, following public hearing, if the
5 Storage Panel determines that the Stored Water has been actively marketed by
6 CBMWD for transfer to Parties on reasonable terms in the previous year. The
7 Storage Panel may impose such additional reasonable conditions as it determines
8 to be appropriate. Any review by the Storage Panel hereunder shall only occur at
9 a public hearing held following at least 15 days' (but not more than 30 days')
10 mailed notice to all Parties to this Judgment, at which hearing an opportunity for
11 public comment shall be afforded in advance of any such decision. However, the
12 Storage Panel may consider an application on shorter notice under exigent
13 circumstances, including the potential loss of the water proposed to be stored if
14 action is not taken sooner. CBMWD shall have the right to appeal any action or
15 inaction by the Storage Panel to this court. The storage and extraction of Stored
16 Water hereunder shall otherwise be subject to all other provisions of this
17 Judgment. The court finds and declares that this subsection constitutes a "court
18 order issued by a court having jurisdiction over the adjudication of groundwater
19 extraction rights within the groundwater basin where storage is sought" within the
20 meaning of Water Code §71610(b)(2)(B). Nothing in this provision impedes
21 CBMWD's ability to store water pursuant to a contract with an adjudicated
22 groundwater extraction rights holder as permitted by Water Code
23 § 71610(b)(2)(A) and otherwise in accordance with this Judgment.

24 M. Basin Operating Reserve.

25 It is in the public interest and in furtherance of the physical solution for WRD to
26 prudently exercise its statutory discretion to purchase, spread, and inject Replenishment
27 Water, to provide for in-lieu replenishment, and otherwise to fulfill its replenishment
28 function within the Basin as provided in Water Code Section 60000 et. seq. Hydrologic,

1 regulatory and economic conditions now prevailing within the State require that WRD be
2 authorized to exercise reasonable discretion and have flexibility in the accomplishment
3 of its replenishment function. Accordingly, WRD may pre-purchase or defer the
4 purchase of Replenishment Water, and may otherwise purchase and manage available
5 sources of Replenishment Water under the most favorable climatic and economic
6 conditions as it may determine reasonable and prudent under the circumstances. It is the
7 intent of the parties to preserve space for such replenishment activities, including capture
8 of natural inflows during wet years, recapture of water when possible, and artificial
9 replenishment when water is available at discounted rate, for the benefit of the Basin and
10 the parties to the Judgment. The Basin Operating Reserve is intended to allow WRD to
11 meet its replenishment needs to make APA available for extraction by all water rights
12 holders. Accordingly, WRD shall have a priority right to occupy up to 110,000 acre-feet
13 of the Available Dewatered Space as the “Basin Operating Reserve” for the acquisition
14 and replenishment of water, or to ensure space remains available in the Basin to capture
15 natural inflows during wet years for the benefit of the parties to the Judgment, to offset
16 over-production. The priority right is not intended to allow WRD to sell or lease stored
17 water, storage, or water rights. To the extent WRD does not require the use of all of such
18 Basin Operating Reserve, that portion of the Basin Operating Reserve that is not then
19 being used shall be available to other Parties to store water on a temporary and space-
20 available basis. No Party may use any portion of the Basin Operating Reserve for space-
21 available storage unless that Party has already maximized its allowed Storage pursuant to
22 its Individual Storage Allocation and all available Community Storage is already in use.
23 WRD’s failure to use any portion of its Basin Operating Reserve shall not cause
24 forfeiture or create a limitation of its right to make use of the designated space in the
25 future. WRD’s first priority right to this category of space shall be absolute. To the
26 extent that there is a conflict between WRD and a third party regarding the availability of
27 and desire to use any portion of the space available for replenishment up to the maximum
28 limits set forth in this section, the interests of WRD will prevail. If a party other than

1 WRD is using the Basin Operating Reserve space on a “space available” basis and a
2 conflict develops between WRD and the storing party, the storing party will, upon notice
3 from WRD, evacuate the Stored Water within ninety (90) days thereafter. In such event,
4 temporary occupancy within the Basin Operating Reserve shall be first in time, first in
5 right, and the last Party to store water shall be required to evacuate first until adequate
6 space shall be made available within the Basin Operating Reserve to meet WRD’s needs.
7 The storing party or parties assume all risks of waste, spill and loss regardless of the
8 hardship. Stored Water that is not evacuated following WRD’s notice of intent to occupy
9 the Basin Operating Reserve will be deemed dedicated to the Basin Operating Reserve in
10 furtherance of the physical solution without compensation and accounted for
11 accordingly. Nothing herein shall permit WRD to limit or encumber, by contract or
12 otherwise, its right to use the Basin Operating Reserve for Replenishment purposes for
13 any reason, or to make space therein available to any person by any means.
14 Notwithstanding the foregoing, to the extent excess space is available, water evacuated
15 from the Basin Operating Reserve as provided in this Section shall be deemed added to
16 available space within the Individual Storage Allocations and Community Storage Pool,
17 subject to the priority rights otherwise provided in this Judgment.

18 N. Water Augmentation.

19 The parties, in coordination with WRD, may undertake projects that add to the
20 long-term reliable yield of the Basin. Innovations and improvements in practices that
21 increase the conservation and maximization of the reasonable and beneficial use of water
22 should be promoted. To the extent that Parties to the Judgment, in coordination with
23 WRD, implement a project that provides additional long-term reliable water supply to the
24 Central Basin, the annual extraction rights in the Central Basin will be increased
25 commensurately in an amount to be determined by the Storage Panel to reflect the actual
26 yield enhancement associated with the project. Augmented supplies of water resulting
27 from such a project may be extracted or stored as permitted in this Judgment in the same
28 manner as other water. Participation in any Water Rights Augmentation Project shall be

1 voluntary. A party may elect to treat a proposed project as a Water Augmentation
2 Project (for the purpose of seeking an increase in that party's Allowed Pumping
3 Allocation) or may elect to treat such a project as a Storage Project under the other
4 provisions of this Judgment. The terms of participation in any Water Augmentation
5 Project will be at the full discretion of the participating parties. All Water Augmentation
6 Projects will be approved by the Storage Panel.

7 (1) Participating Parties.

8 Parties who propose a Water Augmentation Project ("Project Leads") may
9 do so in their absolute discretion, upon such terms as they may determine. All
10 other parties to this Judgment will be offered an opportunity to participate in the
11 Water Augmentation Project on condition that they share proportionally in
12 common costs and benefits, and assume the obligation to bear exclusively the cost
13 of any improvements that are required to accommodate their individual or
14 particular needs. Notice shall be provided which generally describes the project
15 and the opportunity to participate with sufficient time for deliberation and action
16 by any of these parties who could potentially participate. Disputes over the
17 adequacy of notice shall be referred to the Storage Panel, and then to the Court
18 under its continuing jurisdiction. Parties who elect to participate ("Project
19 Participants") may do so provided they agree to offer customary written and
20 legally binding assurances that they will bear their proportionate costs attributable
21 to the Water Rights Augmentation Project, or provide other valuable
22 consideration deemed sufficient by the Project Leads and the Project Participants.

23 (2) Determination of Additional Extraction Rights.

24 The amount of additional groundwater extraction as a result of a Water
25 Augmentation project will be determined by the Storage Panel, subject to review
26 by the Court. The determination will be based upon substantial evidence which
27 supports the finding that the Water Augmentation project will increase the long-
28 term sustainable yield of the respective Basin by an amount at least equal to the

1 proposed increase in extraction rights.

2 (3) Increase in Extraction Rights.

3 A party that elects to participate and pays that party's full pro-rata share of
4 costs associated with any Water Augmentation Project and/or reaches an
5 agreement with other participants based upon other valuable consideration
6 acceptable to the Project Leads and Project Participants, will receive a
7 commensurate increase in extraction rights. Non-participating parties will not
8 receive an increase or a decrease in extraction rights. Any party that elects not to
9 participate will not be required to pay any of the costs attributable to the particular
10 Water Augmentation Project, whether directly or indirectly as a component of the
11 WRD Replenishment Assessment.

12 (4) Nominal Fluctuations.

13 Because water made available for Water Rights Augmentation will be
14 produced annually, fluctuations in groundwater levels will be temporary, nominal
15 and managed within the Basin Operating Reserve.

16 (5) Availability of New Water.

17 The amount of additional groundwater extraction established as a result of
18 a Water Augmentation Project shall be equal to the quantity of new water in the
19 Basin that is attributable to that Water Augmentation Project. No extraction shall
20 occur and no extraction right shall be established until new water has been
21 actually introduced into the Basin as a result of the Project. Any approval for a
22 Water Augmentation Project shall include provisions (a) requiring regular
23 monitoring to determine the actual amount of such new water made available, (b)
24 requiring make-up water or equivalent payment therefor to the extent that actual
25 water supply augmentation does not meet projections, and (c) adjusting extraction
26 rights attributable to the Water Augmentation Project to match the actual water
27 created. The right to extract augmented water from the Basin resulting from a
28 party's participation in a Water Augmentation Project shall be accounted for

1 separately and shall not be added to a party's Allowed Pumping Allocation. No
2 Replenishment Assessment shall be levied against the extraction of augmented
3 water.

4 (6) Limitation.

5 Notwithstanding the foregoing, WRD will not obtain any water rights or
6 extraction rights under this Judgment by virtue of its participation in a Water
7 Augmentation Project. If WRD participates in a Water Rights Augmentation
8 Project through funding or other investments, its allocation of new water from the
9 project shall be used to offset its replenishment responsibilities.

10 O. Limits on Watermaster Review.

11 It shall not be necessary for Watermaster, or any constituent body thereof, to
12 review or approve any of the following before the affected Party may proceed: (i)
13 exercise of adjudicated water rights consistent with this Judgment, except for extraction
14 above 140% of a Party's extraction right as set out in Section IV(J) of this Judgment; (ii)
15 replenishment of the Basin with Replenishment Water by WRD consistent with Water
16 Code Section 60000 et seq., including replenishment of water produced by water rights
17 holders through the exercise of adjudicated water rights; (iii) WRD's operations within
18 the Basin Operating Reserve; (iv) Carryover Conversion or other means of the filling of
19 the Individual Storage Accounts and the Community Storage Pool, as provided in this
20 Judgment, as long as existing water production, spreading, or injection facilities are used;
21 and (v) individual transfers of the right to produce Stored Water as permitted in Section
22 IV(F). All other Storage Projects and all Water Augmentation Projects shall be subject
23 to review and approval as provided herein, including (i) material variances to substantive
24 criteria governing projects exempt from the review and approval process, (ii)
25 modifications to previously approved Storage Projects and agreements, (iii) a party's
26 proposal for Carryover Conversion in quantities greater than the express apportionment
27 of Adjudicated Storage Capacity on a non-priority, space-available, interim basis, and
28 (iv) Storage, by means other than Carryover Conversion, when new production,

1 spreading, or injection facilities are proposed to be utilized.

2 P. Hearing Process For Watermaster Review.

3 The following procedures shall be followed by Watermaster where Watermaster
4 review of storage or extraction of Stored Water is required or permitted under this
5 Judgment:

6 (1) No later than thirty (30) days after notice has been issued for the
7 storage application, the matter shall be set for hearings before the Storage Panel.
8 A staff report shall be submitted by WRD staff in conjunction with the completed
9 storage application documents and the Water Rights Panel may prepare an
10 independent staff report, if it elects to do so.

11 (2) The Board of WRD and the Water Rights Panel (sitting jointly as
12 the Storage Panel) shall conduct a joint hearing concerning the storage
13 application.

14 (3) All Watermaster meetings shall be conducted in the manner
15 prescribed by the applicable Rules and Regulations. The Rules shall provide that
16 all meetings of Watermaster shall be open to water rights holders and that
17 reasonable notice shall be given of all meetings.

18 (4) The Board of WRD and the Water Rights Panel shall each adopt
19 written findings explaining its decision on the proposed Storage Project, although
20 if both entities reach the same decision on the Storage Project, they shall work
21 together to adopt a uniform set of findings.

22 (5) Unless both the Board of WRD and the Water Rights Panel
23 approve the Storage Project, the Storage Project application shall be deemed
24 denied (a "Project Denial"). If both the Board of WRD and the Water Rights
25 Panel approve the Storage Project, the Storage Project shall be deemed approved
26 (a "Project Approval").

27 Q. Trial Court Review

28 (1) The applicant may seek the Storage Panel's reconsideration of a

1 Project Denial. However, there shall be no process for mandatory reconsideration
2 or mediation of a Project Approval or a Project Denial either before the
3 Administrative Body, or before the Water Rights Panel.

4 (2) Any Party may file an appeal from a Project Approval or Project
5 Denial with this Court, as further described in Section II(F).

6 (3) In order to (a) promote the full presentation of all relevant
7 evidence before the Storage Panel in connection with its consideration of any
8 proposed Storage Project, (b) achieve an expeditious resolution of any appeal to
9 the Court, and (c) accord the appropriate amount of deference to the expertise of
10 the Storage Panel, the appeal before the Court shall be based solely on the
11 administrative record, subject only to the limited exception in California Code of
12 Civil Procedure section 1094.5(e).

13 (4) If both the WRD Board and the Water Rights Panel each vote to
14 deny or approve a proposed Storage Project, it shall be an action by the Storage
15 Panel and that decision shall be accorded by the Court deference according to the
16 substantial evidence test. If one of the reviewing bodies votes to approve the
17 proposed Storage Project and the other reviewing body votes to deny the proposed
18 storage project, then the Court's review shall be *de novo*, although still restricted
19 to the administrative record. In the case of any *de novo* Trial Court review, the
20 findings made by the respective Watermaster bodies shall not be accorded any
21 weight independent of the evidence supporting them.

22 R. Space Available Storage, Relative Priority, and Dedication of "Spilled"
23 Water.

24 To balance the need to protect priority uses of storage and to encourage the full
25 utilization of Available Dewatered Space within the Adjudicated Storage Capacity and
26 the Basin Operating Reserve, any Party may make interim, temporary use of then
27 currently unused Available Dewatered Space within any category of Adjudicated Storage
28 Capacity, and then if all Adjudicated Storage Capacity is being fully used for Stored

1 Water within the Basin Operating Reserve (“Space-Available Storage”), subject to the
2 following criteria:

3 (1) Any Party may engage in Space-Available Storage without prior
4 approval from Watermaster provided that the storing Party or Parties shall assume
5 all risks of waste, spill, and loss regardless of the hardship. Whenever the Storage
6 Panel determines that a Party is making use of excess Available Dewatered Space
7 for Space-Available Storage, the Storage Panel shall issue written notice to the
8 Party informing them of the risk of spill and loss.

9 (2) Whenever the Available Dewatered Space is needed to
10 accommodate the priority use within a respective category of Adjudicated Storage
11 Capacity, or WRD seeks to make use of its priority right to the Basin Operating
12 Reserve to fulfill its replenishment function, the Storage Panel shall issue a notice
13 to evacuate the respective category of Adjudicated Storage Capacity or Basin
14 Operating Reserve, as applicable, within the time-periods set forth within this
15 Amended Judgment. To the extent the Stored Water is not timely evacuated such
16 Stored Water will be placed into any other excess Available Dewatered Space,
17 first within the Adjudicated Storage Capacity, if available, and then if all
18 Adjudicated Storage Capacity is being fully used for Stored Water within the
19 Basin Operating Reserve. If no excess Available Dewatered Space is available
20 within the Basin Operating Reserve, then the Stored Water shall be deemed
21 spilled and will be deemed dedicated to the Basin Operating Reserve in
22 furtherance of the physical solution without compensation and accounted for
23 accordingly. A Party that seeks to convert the Stored Water temporarily held in
24 interim storage as Space-Available Storage to a more firm right, may in its
25 discretion, contract for the use of another Party’s Individual Storage Allocation,
26 or may add such water to the Community Storage Pool once space therein
27 becomes available.

28 (3) No Stored Water will be deemed abandoned unless the cumulative

1 quantity of water held as Stored Water plus the quantity of water held in the Basin
2 Operating Reserve exceeds 330,000 (three hundred and thirty thousand) acre-feet
3 in the Central Basin.
4

5 V. CONTINUING JURISDICTION OF THE COURT.

6 The Court hereby reserves continuing jurisdiction and upon application of any interested
7 party, or upon its own motion, may review and redetermine the following matters and any
8 matters incident thereto:

9 A. Its determination of the permissible level of extractions from Central
10 Basin in relation to achieving a balanced basin and an economic utilization of Central
11 Basin for groundwater storage, taking into account any then anticipated artificial
12 replenishment of Central Basin by governmental agencies for the purpose of alleviating
13 what would otherwise be annual overdrafts upon Central Basin and all other relevant
14 factors.

15 B. Whether in accordance with applicable law any party has lost all or any
16 portion of his rights to extract groundwater from Central Basin and, if so, to ratably
17 adjust the Allowed Pumping Allocations of the other parties and ratably thereto any
18 remaining Allowed Pumping Allocation of such party.

19 C. To remove any Watermaster or constituent body appointed from time to
20 time and appoint a new Watermaster; and to review and revise the duties, powers and
21 responsibilities of the Watermaster or its constituent bodies and to make such other and
22 further provisions and orders of the Court that may be necessary or desirable for the
23 adequate administration and enforcement of the Judgment.

24 D. To revise the price to be paid by Exchangees and to Exchangors for
25 Exchange Pool purchases and subscriptions.

26 E. In case of emergency or necessity, to permit extractions from Central
27 Basin for such periods as the Court may determine: (i) ratably in excess of the Allowed
28 Pumping Allocations of the parties; or (ii) on a non-ratable basis by certain parties if

1 either compensation or other equitable adjustment for the benefit of the other parties is
2 provided. Such overextractions may be permitted not only for emergency and necessity
3 arising within Central Basin area, but to assist the remainder of the areas within The
4 Metropolitan Water District of Southern California in the event of temporary shortage or
5 threatened temporary shortage of its imported water supply, or temporary inability to
6 deliver the same throughout its area, but only if the court is reasonably satisfied that no
7 party will be irreparably damaged thereby. Increased energy cost for pumping shall not
8 be deemed irreparable damage. Provided, however, that the provisions of this
9 subparagraph will apply only if the temporary shortage, threatened temporary shortage,
10 or temporary inability to deliver was either not reasonably avoidable by the Metropolitan
11 Water District, or if reasonably avoidable, good reason existed for not taking the steps
12 necessary to avoid it.

13 F. To review actions of the Watermaster.

14 G. To assist the remainder of the areas within The Metropolitan Water
15 District of Southern California within the parameter set forth in subparagraph (e) above.

16 H. To provide for such other matters as are not contemplated by the Judgment
17 and which might occur in the future, and which if not provided for would defeat any or
18 all of the purposes of this Judgment to assure a balanced Central Basin subject to the
19 requirements of Central Basin Area for water required for its needs, growth and
20 development.

21 The exercise of such continuing jurisdiction shall be after 30 days' notice to the parties,
22 with the exception of the exercise of such continuing jurisdiction in relation to subparagraphs E
23 and G above, which may be *ex parte*, in which event the matter shall be forthwith reviewed
24 either upon the Court's own motion or the motion of any party upon which 30 days' notice shall
25 be so given. Within ten (10) days of obtaining any *ex parte* order, the party so obtaining the
26 same shall mail notice thereof to the other parties. If any other party desires Court review
27 thereof, the party obtaining the *ex parte* order shall bear the reasonable expenses of mailing
28 notice of the proceedings, or may in lieu thereof undertake the mailing. Any contrary or

1 modified decision upon such review shall not prejudice any party who relied on said *ex parte*
2 order.

3
4 VI. GENERAL PROVISIONS.

5 A. Judgment Constitutes Inter Se Adjudication.

6 This Judgment constitutes an inter se adjudication of the respective rights of all
7 parties, except as may be otherwise specifically indicated in the listing of the water rights
8 of the parties of this Judgment, or in Appendix “2” hereof. All parties to this Judgment
9 retain all rights not specifically determined herein, including any right, by common law
10 or otherwise, to seek compensation for damages arising out of any act or omission of any
11 person. This Judgment constitutes a “court order” within the meaning of Water Code
12 Section 71610(B)(2)(b).

13 B. Assignment, Transfer, Etc., of Rights.

14 Subject to the other provision of this Judgment, and any rules and regulations of
15 the Watermaster requiring reports relative thereto, nothing herein contained shall be
16 deemed to prevent any party hereto from assigning, transferring, licensing or leasing all
17 or any portion of such water rights as it may have with the same force and effect as
18 would otherwise be permissible under applicable rules of law as exist from time to time.

19 C. Service Upon and Delivery to Parties of Various Papers.

20 Service of the Judgment on those parties who have executed that certain
21 Stipulation and Agreement for Judgment or who have filed a notice of election to be
22 bound by the Exchange Pool provisions shall be made by first class mail, postage
23 prepaid, addressed to the designee and at the address designated for that purpose in the
24 executed and filed Counterpart of the Stipulation and Agreement for Judgment or in the
25 executed and filed “Notice of Election to be Bound by Exchange Pool Provisions,” as the
26 case may be, or in any substitute designation filed with the Court.

27 Each party who has not heretofore made such a designation shall, within 30 days
28 after the Judgment shall have been served upon that party, file with the Court, with proof

1 of service of a copy upon the Watermaster, a written designation of the person to whom
2 and the address at which all future notices, determinations, requests, demands, objections,
3 reports and other papers and processes to be served upon that party or delivered to that
4 party are to be so served or delivered.

5 A later substitute designation filed and served in the same manner by any party
6 shall be effective from the date of filing as to the then future notices, determinations,
7 requests, demands, objections, reports and other papers and processes to be served upon
8 or delivered to that party.

9 Delivery to or service upon any party by the Watermaster, by any other party, or
10 by the Court, or any item required to be served upon or delivered to a party under or
11 pursuant to the Judgment may be by deposit in the mail, first class, postage prepaid,
12 addressed to the designee and at the address in the latest designation filed by that party.

13 D. Judgment Does Not Affect Rights, Powers, Etc., of Plaintiff District.

14 Nothing herein constitutes a determination or adjudication which shall foreclose
15 Plaintiff District from exercising such rights, powers, privileges and prerogatives as it
16 may now have or may hereafter have by reason of provisions of law.

17 E. Continuation of Order under Interim Agreement.

18 The order of Court made pursuant to the “Stipulation and Interim Agreement and
19 Petition for Order” shall remain in effect through the Administrative Year in which this
20 Judgment shall become final (subject to the reserved jurisdiction of the Court).

21 F. Effect of Extractions by Exchangees; Reductions in Extractions.

22 With regard to Exchange Pool purchases, the first extractions by each Exchangee
23 shall be deemed the extractions of the quantities of water which that party is entitled to
24 extract pursuant to his allocation from the Exchange Pool for that Administrative Year.
25 Each Exchangee shall be deemed to have pumped his Exchange Pool request so allocated
26 for and on behalf of each Exchangor in proportion to each Exchangor’s subscription to
27 the Exchange Pool which is utilized to meet Exchange Pool requests. No Exchangor
28 shall ever be deemed to have relinquished or lost any of its rights determined in this

1 Judgment by reason of allocated subscriptions to the Exchange Pool. Each Exchangee
2 shall be responsible as between Exchangors and that Exchangee, for any tax or
3 assessment upon the production of groundwater levied for replenishment purposes by
4 WRD or by any other governmental agency with respect to water extracted by such
5 Exchangee by reason of Exchange Pool allocations and purchases. No Exchangor or
6 Exchangee shall acquire any additional rights, with respect to any party to this action, to
7 extract waters from Central Basin pursuant to Water Code Section 1005.1 by reason of
8 the obligations pursuant to and the operation of the Exchange Pool.

9 G. Judgment Binding on Successors, Etc.

10 This Judgment and all provisions thereof are applicable to and binding upon not
11 only the parties to this action, but as well to their respective heirs, executors,
12 administrators, successors, assigns, lessees, licensees and to the agents, employees and
13 attorneys in fact of any such persons.

14 H. Costs.

15 No party shall recover its costs herein as against any other party.

16 I. Intervention of Successors in Interest and New Parties.

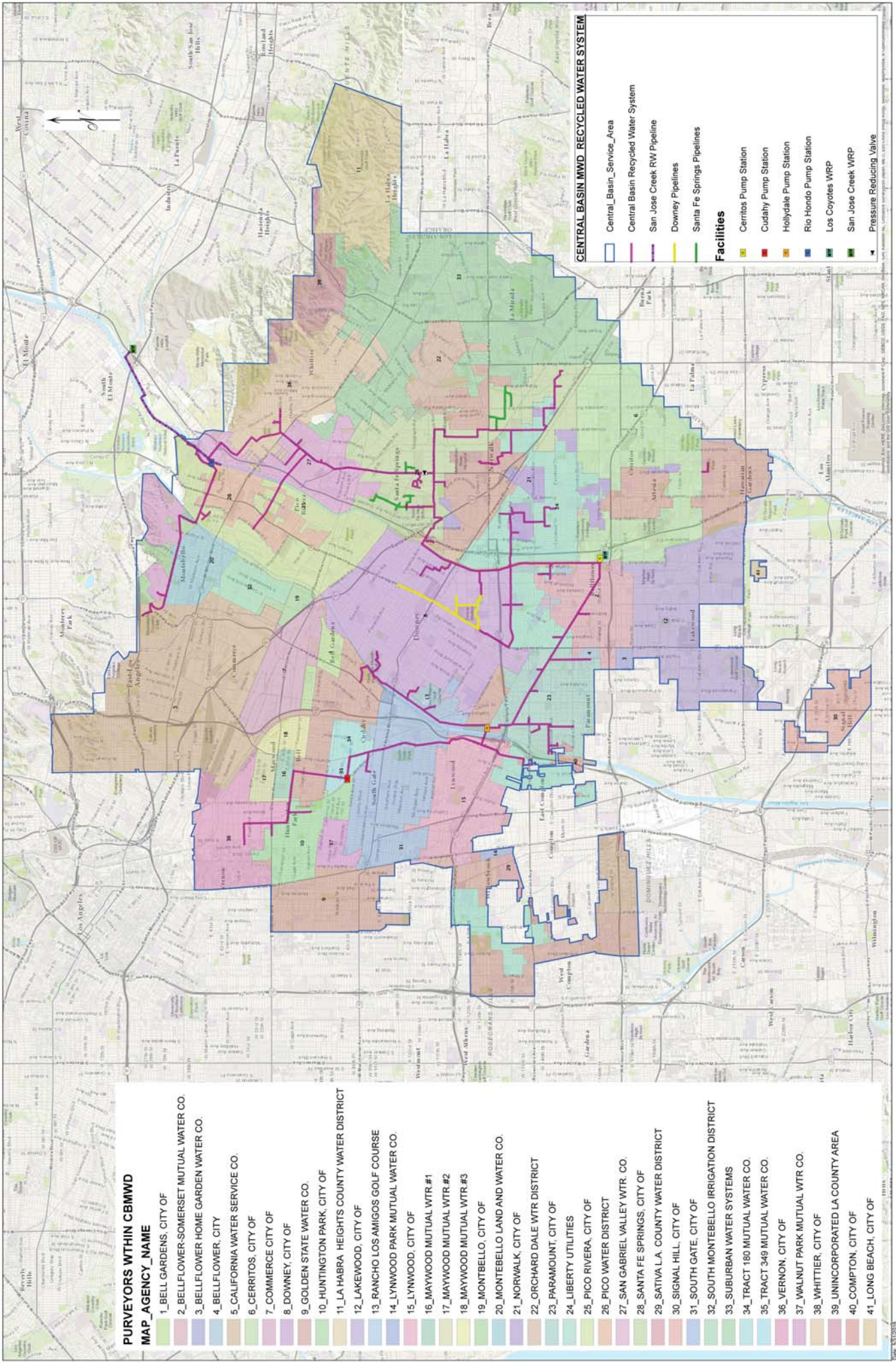
17 Any person who is not a party (including but not limited to successors or parties
18 who are bound by this Judgment) and who proposes to produce water from the Basin,
19 store water in the Basin, or exercise water rights of a predecessor may seek to become a
20 party to this Judgment through a Stipulation in Intervention entered into with the
21 Plaintiff. Plaintiff may execute said Stipulation on behalf of the other parties herein, but
22 such Stipulation shall not preclude a party from opposing such intervention at the time of
23 the court hearing thereon. Said Stipulation for Intervention must thereupon be filed with
24 the Court, which will consider an order confirming said intervention following thirty (30)
25 days' notice to the parties. Thereafter, if approved by the Court, such intervenor shall be
26 a party bound by this Judgment and entitled to the rights and privileges accorded under
27 the physical solution herein.

28 J. Effect of this Amended Judgment on Orders Filed Herein.

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX J

RECYCLED WATER SYSTEM



2020 URBAN WATER MANAGEMENT PLAN

APPENDIX K

WATER WASTE RULES AND SCHEDULES

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

The water supply for Park Water Company may be interrupted or reduced due to a variety of circumstances, for instance, in response to a drought or a catastrophic event, such as an earthquake or fire that damages water delivery and storage facilities, or a power outage that affects water treatment or pumping operations. This Water Shortage Contingency Plan enables the utility to respond efficiently and effectively to all water shortage contingencies.

A. GENERAL INFORMATION

1. Wasteful water use practices, as outlined in Section B of this Rule, constitute prohibited, non-essential or unauthorized water use, and are declared to be a waste of water, subject to the terms and conditions of Rule No. 11, which allow Park to discontinue service after due notice to the customer of wasteful or negligent use of water on the customer's premises. Park's customers shall be notified of these conservation measures through a bill insert or a direct mailing, and/or through electronic communications, pursuant to the direction of the California Public Utilities Commission ("Commission").
2. If water supplies are projected to be insufficient to meet normal customer demand for reasons beyond the control of Park, or if directed under an emergency regulation by an authorized government agency, commission, or official, Park may implement additional water-saving conservation measures and mandatory restrictions, as described in Section C of this Rule. As directed by the Commission, Park's customers shall be notified of the applicable mandatory restrictions or conservation measures through newspaper inserts, website and other electronic communications, bill inserts or direct mailings, as appropriate, as long as the declaration of emergency is in effect.
3. Should supply conditions or government directives dictate, prior to, or in response to, executive orders, state agency-promulgated emergency regulations, or a declaration of emergency issued by a water wholesaler or other government agency, Park may request permission from the Commission to add a Schedule No. 14.1 – Water Shortage Contingency Plan with Staged Mandatory Reductions, Restrictions, and Drought Surcharges, via a Tier 2 advice letter as set forth in Section D. Utilities without a full decoupling Water Revenue Adjustment Mechanism ("WRAM") balancing account in one or more ratemaking areas also may request a lost revenue memorandum account at this time.
4. Park shall file a Tier 2 advice letter to request activation of a particular stage of Schedule 14.1 – Water Shortage Contingency Plan with Staged Mandatory Reductions, Restrictions and Drought Surcharges, as set forth in Section D, under the following conditions:

(N)

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

A. GENERAL INFORMATION (Continued)

- a. If the Commission, wholesale water supplier, or Park declares an emergency requiring mandatory water use restrictions, or;
 - b. If a government agency with legal jurisdiction over Park or its service area declares a state of emergency in response to severe drought conditions, earthquake or other catastrophic event that severely reduces Park's water supply, or;
 - c. If voluntary conservation levels or mandatory restrictions on certain uses of water, set by the Commission, Park, wholesale water supplier, or government agency, are insufficient, or;
 - d. If a Declaration of Mandatory Water Restrictions is made by Park or governing body or agency, or;
 - e. If Park chooses to subsequently activate a different stage.
5. All monies collected by Park through surcharges, penalties or fees shall be booked to the WRAM or a memorandum account to offset recovery of lost revenues.
6. All expenses incurred by Park to implement Rule No.14.1 and Schedule No.14.1 that have not been considered in a General Rate Case or other proceeding shall be recoverable by Park if determined to be reasonable by the Commission. These additional monies shall be accumulated by Park in a separate memorandum account, authorized in Resolution W-4976 for disposition as directed or authorized from time to time by the Commission.
7. When Schedule No.14.1 is in effect, but Park determines that water supplies are again sufficient to meet normal demands, and mandatory restrictions are no longer necessary, or if Park wants to implement a lower stage of mandatory restrictions, Park shall seek Commission approval via a Tier 1 advice letter to de-activate the particular stage of mandatory reductions or allocations that had been authorized.
8. None of the restrictions listed below apply to the use of recycled water.

B. NON-ESSENTIAL OR UNAUTHORIZED WATER USES

The following non-essential or unauthorized uses of water are declared to be a waste of water and are subject to the terms and conditions of Rule No. 11:

(N)

Advice No. 261-W LEIGH K. JORDAN
Name
Dec. No. EXECUTIVE VICE PRESIDENT
Title

Date Filed SEP 2 2008
Effective OCT 1 2008
Resolution No. _____

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

B. NON-ESSENTIAL OR UNAUTHORIZED WATER USES (Continued)

1. The application of potable water to outdoor landscape in a manner that causes runoff such that water flow onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
2. The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.
3. The use of potable water for washing buildings, structures, sidewalks, walkways, patios, tennis courts, or other hard-surfaced, non-porous areas.
4. The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system.
5. The use of potable water for watering outside plants, lawn, landscape, and turf area during certain hours prohibited by applicable laws, during and up to 48 hours after measurable rainfall (0.1" or more).
6. The failure to promptly repair any leaks, breaks, or other malfunction resulting in water waste in a customer's domestic or outdoor water system after notification by Park, unless other, specific arrangements are made with and agreed to by Park.
7. The serving of water, other than upon request, in eating and drinking establishments, including but not limited to restaurants, hotels, cafes, bars, or other public places where food or drink are served and/or purchased.
8. Hotels/motels must provide guests with the option of choosing not to have towels and linens laundered daily and prominently display notice of this option in each guestroom.
9. The use of potable water for irrigation of ornamental turf on public street medians.
10. The use of potable water for irrigation outside of newly constructed homes and buildings that is not delivered by drip or micro spray systems.
11. Commercial, industrial, and institutional properties, such as campuses, golf courses, and cemeteries, immediately implement water efficiency measures to reduce potable water use in an amount consistent with the mandated reduction.

(N)

Advice No. 261-W LEIGH K. JORDAN
Name
Dec. No. EXECUTIVE VICE PRESIDENT
Title

Date Filed 3. 2015
Effective 03 1 2015
Resolution No.

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

B. NON-ESSENTIAL OR UNAUTHORIZED WATER USES (Continued)

- 12. Further reduction in or the complete prohibition of any other use of water declared non-essential, unauthorized, prohibited, or unlawful by an authorized government or regulatory agency or official.
- 13. Use of potable water for watering streets with trucks, or other vehicles, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.
- 14. Other restrictions on use of potable water as prescribed from time to time by the Commission, Park, or another governing body or agency.

C. STAGED REDUCTION OF WATER USAGE AND MANDATORY RESTRICTIONS

If a water supply shortage exists or is threatening, or if Park is unable to meet conservation targets as set by a wholesale provider or governing body or agency, in addition to the restrictions on wasteful water use practices outlined above, the following restrictions may be imposed by Park in stages, as indicated below. Failure to comply with these mandatory restrictions will be deemed a wasteful and unreasonable use of water and may result in the installation of a flow restrictor, discontinuance of service, or other actions as authorized by Rule No.11.

The following stages will be implemented as needed to achieve the mandated reduction. Park may implement Stage 2 without first implementing Stage 1 if warranted by the mandated reduction.

STAGE 1:

A Stage 1 Water Shortage occurs when the Commission or Park determines that measures are needed to reduce water consumption. In addition to the non-essential, unauthorized uses of water listed in Section B, the following restrictions may be imposed:

- 1. Outdoor irrigation restricted to no more than three days per week, on a schedule established and posted by Park on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:

Addresses Ending In:	Watering Days
Even Numbers (0, 2, 4, 6, 8)	Monday, Wednesday, and Saturday
Odd Numbers (1, 3, 5, 7, 9)	Tuesday, Thursday, and Sunday

- 2. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

C. STAGED REDUCTION OF WATER USAGE AND MANDATORY RESTRICTIONS (Continued)

device that is not continuously attended is limited to no more than 10 minutes of watering per day per station, with no watering between 8:00 a.m. and 7:00 p.m. This provision does not apply to landscape irrigation zones that exclusively use drip-type irrigation systems that use less than 1.0 inch per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive action shut-off nozzle or device that causes it to cease dispensing water immediately when not in use, or for the express purpose of adjusting or repairing an irrigation system. However, no irrigation that results in runoff can occur regardless of method.

3. Apart from the above outdoor irrigation restrictions, when a city, county, or other local public agency in Park's service area adopts restrictions on the number of days or hours of the day that customers may irrigate that are different than those adopted by Park, Park may enforce the city, county, or other local public agency's restrictions.
4. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within five (5) business days of written notification by Park, unless other arrangements are made with Park.
5. Failure to comply with these restrictions may result in the installation of a flow restrictor device along with associated fees for installation and removal.
6. Failure to comply with these restrictions may result in the installation of a real time measurement device on the customer's service line to provide the customer and Park with access to information from the device. The cost of the device, including installation, shall be billed to the customer, and nonpayment may result in discontinuance of service.
7. If conditions warrant, Park may change the number of watering days and the specific day of watering after first notifying its customers in accordance with Rule No. 14.1. (N)

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

C. STAGED REDUCTION OF WATER USAGE AND MANDATORY RESTRICTIONS
(Continued)

- 8. If conditions warrant, Park may change the number of days allowed for a customer to fix leaks, breaks or other malfunctions after first notifying its customers in accordance with Rule No. 14.1.
- 9. Other restrictions on use of potable water as prescribed by the Commission, Park, or another governing body or agency.

STAGE 2:

Stage 2 Water Shortage occurs when the Stage 1 conditions are deemed insufficient to achieve identified water usage goals established by an authorized government agency or official. The following water restrictions may be imposed by Park if directed by an authorized government or regulatory agency or official, or in an effort by Park to comply with water-saving conservation goals or requirements applicable to Park. The following restrictions are designed to allow Park additional flexibility in imposing water use restrictions.

In addition to the restrictions identified in Stage 1, the following restrictions will be enacted:

- 1. Outdoor irrigation restricted to no more than two (2) days per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than ten (10) minutes of watering per day per station.
- 2. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within three (3) business days of written notification by Park, unless other arrangements are made with Park.
- 3. The use of potable water to refill residential swimming pools or outdoor spas more than one foot or initial filling with potable water except when existing pools are drained to repair leaks.
- 4. Other restrictions on use of potable water as prescribed by the Commission, Park, or another governing body or agency.

(N)

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

C. STAGED REDUCTION OF WATER USAGE AND MANDATORY RESTRICTIONS

(Continued)

STAGE 3:

Stage 3 Water Shortage occurs when the Stage 2 conditions are deemed insufficient to achieve identified water usage reductions established by an authorized government agency or official.

In addition to the restrictions identified in Stage 2, the following restrictions will be enacted:

1. Outdoor irrigation restricted to no more than two (2) days per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended limited to no more than five (5) minutes of watering per day per station.
2. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within two (2) business days of written notification by Park, unless other arrangements are made with Park.
3. Other restrictions on use of potable water as prescribed by the Commission, Park, or another governing body or agency.

STAGE 4:

Stage 4 Water Shortage will be implemented if the Stage 3 conditions are deemed insufficient to achieve reductions due to water supply shortages or to achieve identified water usage goals established by an authorized government agency or official.

In addition to the restrictions identified in Stage 3, the following restrictions will be enacted:

1. Outdoor irrigation restricted to no more than one (1) day per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended limited to no more than five (5) minutes of watering per day per station.
2. Other restrictions on use of potable water as prescribed by the Commission, Park, or another governing body or agency.

(N)

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

D. STAGED MANDATORY WATER REDUCTIONS – SCHEDULE NO. 14.1

1. Upon the declaration of a water shortage emergency by a water wholesaler, government agency or the governing body of a distributor of a public water supply (per Water Code Section 350), Park may request addition of a Schedule No. 14.1 – Water Shortage Contingency Plan with Staged Mandatory Reductions, Restrictions and Drought Surcharges tariff, via a Tier 2 advice letter, with full justification. Park may not activate Schedule No. 14.1 until it has been authorized to do so by the Commission, as delegated to the Division of Water and Audits.
 - a. A staged Schedule No. 14.1 that has been authorized by the Commission shall remain dormant until triggered by specific conditions detailed in the Schedule No. 14.1 tariff and Park has requested and received authorization for activating a stage by the Commission.
 - b. Notice of the Tier 2 advice letter and associated public participation hearing if required shall be provided to customers through a bill insert or a direct mailing.
 - c. Park shall comply with all requirements of Sections 350-358 of the California Water Code.
 - d. The Tier 2 advice letter requesting the addition of a Schedule No. 14.1 shall include but not be limited to:
 - i. The proposed Schedule No. 14.1 tariff, which shall include but not be limited to:
 1. Applicability;
 2. Applicable Territory;
 3. A detailed description of each Stage of Mandatory Water Reductions;
 4. A detailed description of the Trigger that Activates each Stage of Mandatory Water Reductions;
 5. A detailed description of each water use restriction, prohibition and/or reduction level for each Stage of Mandatory Water Reduction;
 6. Water use violation levels, written warning levels, applicable rate schedules and drought surcharges, associated penalties, surcharges or fees, if applicable, and exception procedures;
 7. Conditions for installation of a flow restrictor;
 8. Charges for installation and removal of flow restrictors, and
 9. Special Conditions.

(N)

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

D. STAGED MANDATORY WATER REDUCTIONS – SCHEDULE NO. 14.1 (Continued)

- ii. Justification for, and documentation and calculations in support of the Schedule, including but not limited to each item in D.1.d.i above.
- 2. The number of Stages requested by each utility/district/water system may vary, depending on local conditions and specifics of the water shortage event. Park shall file a Tier 2 advice letter to request activation of a particular stage of Schedule No. 14.1 – Water Shortage Contingency Plan with Staged Mandatory Reductions, Restrictions and Drought Surcharges under the following conditions:
 - a. If the Commission, wholesale water supplier, or Park declares an emergency requiring mandatory water use restrictions, or;
 - b. If a government agency with legal jurisdiction over Park or its service area declares a state of emergency in response to severe drought conditions, earthquake or other catastrophic event that severely reduces Park's water supply, or;
 - c. If voluntary conservation levels or mandatory restrictions on certain uses of water, set by the Commission, Park, wholesale water supplier, or government agency are insufficient, or;
 - d. If a Declaration of Mandatory Water Reductions is made by Park or governing body or agency, or;
 - e. If Park chooses to subsequently activate a different stage.
- 3. The Tier 2 advice letter requesting activation of a Schedule No. 14.1 shall include but not be limited to:
 - a. Justification for activating this particular stage of reductions, as well as the period during which this particular stage of mandatory restrictions and reductions measures will be in effect.
 - b. When Park requests activation of a particular Stage, it shall notify its customers as detailed in Section E. below.

E. ENFORCEMENT OF STAGED MANDATORY WATER REDUCTIONS

- 1. The staged reduction of water usage and mandatory restrictions in Section C of this Plan become enforceable through additional tariff rates when the Schedule No. 14.1-Water Shortage Contingency Plan with Staged Mandatory Water Reductions and Drought Surcharges program is triggered, at which time Park files a Tier 2 (N)

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

E. ENFORCEMENT OF STAGED MANDATORY WATER REDUCTIONS
(Continued)

advice letter requesting activation of a particular stage, and authorization is received from the Commission as delegated to the Division of Water and Audits.

- a. In the event a customer is observed to be using water for any nonessential or unauthorized use as defined in Section B and C of this Rule, Park may charge a water use violation fine in accordance with Schedule No. 14.1.
 - b. In the event an authorized governing body has established water usage levels through an executive order or emergency regulation, Park may establish water usage targets conforming to the level established by the regulation and adopt appropriate rate schedules for the target levels decreed in the order in accordance with Schedule No. 14.1.
2. Park may, after one written warning, install a flow-restricting device on the service line of any customer observed by utility personnel to be using water for any non-essential or unauthorized use as defined in Section B and C above.
 3. A flow restrictor shall not restrict water delivery by greater than 50% of normal flow and shall be capable of providing the premise with a minimum of 3 Ccf/person/month. The restricting device may be removed only by the utility, only after a three-day period has elapsed, and only upon payment of the appropriate removal charge as set forth in Schedule No. 14.1.
 4. After the removal of the restricting device, if any non-essential or unauthorized use of water continues, the utility may install another flow-restricting device without written notice. This device shall remain in place until water supply conditions warrant its removal and until the appropriate charge for removal has been paid to Park.
 5. Any tampering with the flow restricting device by a customer can result in discontinuation of water use at Park's discretion.
 6. If, despite installation of such flow-restricting device pursuant to the provisions of the previous enforcement conditions, any such non-essential or unauthorized use of water continues, then the utility may discontinue water service to such customer. In such latter event, a charge as provided in Rule No. 11 shall be paid to Park as a condition for restoration of service.

(N)

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

E. ENFORCEMENT OF STAGED MANDATORY WATER REDUCTIONS
(Continued)

7. The charge for removal of a flow-restricting device shall be in accordance with Schedule No.14.1.

F. APPEAL PROCEDURE

1. Any customer who seeks a variance from any of the provisions of this Water Shortage Contingency Plan shall notify Park in writing using the appeals form, explaining in detail the reason for such a variation. Park shall respond to each such request in writing.
2. The appeals form is available online at Park's website, www.parkwater.com, the Park office located 9750 Washburn Road, Downey, 90241 or by calling 1-800-727-5987.
3. If the customer disagrees with such disposition, the customer may contact the Commission.
4. Except as set forth in this Section, no person shall have any right or claim in law or in equity, against Park or any of its employees, or the Commission because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of the Water Shortage Contingency Plan.

G. NOTICE

1. As stated under Section D.1.b and c, when Park requests the addition of a Schedule 14.1 – Staged Mandatory Water Allocation tariff, via a Tier 2 advice letter, it shall provide notice of the Tier 2 advice letter and associated public hearing, if necessary. Notice will be provided to customers through bill inserts or direct mailing, and it shall comply with all requirements of Sections 350-358 of the California Water Code (CWC), including but not limited to the following:
 - a. In order to be in compliance with both General Order 96-B and CWC, Park shall provide notice via both newspaper and bill insert/direct mailing.
 - b. Park shall file one notice for each advice letter filed, that includes both notice of the filing of the Tier 2 advice letter as well as the details of the public hearing (date, time, place, etc.).
 - c. The public meeting shall be held after Park files the Tier 2 advice letter, and before the Commission authorizes the addition of Schedule 14.1 to the tariff

(N)

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

(N)

G. NOTICE (Continued)

except in cases of emergency water shortages approved by the Division of Water and Audits.

- d. Park shall consult with the Division of Water and Audits staff prior to filing the advice letter, in order to determine the details of the public meeting.

In the event that Schedule 14.1 – Water Shortage Contingency Plan with Staged Mandatory Reductions, Restrictions and Drought Surcharges is triggered, and Park requests activation through the filing of a Tier 2 advice letter, Park shall notify its customers and provide each customer with a summary of Schedule No. 14.1 by means of bill insert or direct mailing. Notification shall take place prior to imposing any fines associated with this plan. If activation of Schedule No. 14.1 occurs one year or more since the public hearing associated with adding Schedule No. 14.1 to its tariffs, then Park shall conduct a public hearing pursuant to California Water Code Section 351 prior to activating the rationing stage.

- 2. During the period that a stage of Schedule No. 14.1 is activated, Park shall provide customers with updates in at least every other bill, regarding its water supply status and the results of customers' conservation and water-use reduction efforts.

(N)

Advice No. 261-W _____
Name LEIGH K. JORDAN
Dec. No. _____
Title EXECUTIVE VICE PRESIDENT

Date Filed DEC 21 2015
Effective DEC 1 2015
Resolution No. _____

PARK WATER COMPANY
9750 WASHBURN ROAD
P. O. BOX 7002
DOWNEY, CALIFORNIA 90241-7002

ORIGINAL Cal. P.U.C. Sheet No. 1233-W
Canceling _____ Cal. P.U.C. Sheet No. _____

PARK WATER COMPANY SCHEDULE 14.1 Page 1 of 6 (N)
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES

A. APPLICABILITY

This schedule applies to all water customers served under Tariff Schedules PR-1-R and PR-1-NR authorized by the California Public Utilities Commission (Commission) for the Park Water Company (Park) service areas. This schedule is only effective in times of mandatory conservation, as required by Rule No. 14.1, and only for the period noted in the Special Conditions section below. The drought emergency surcharges listed in this schedule are in addition to the regular water use charges under the current Schedules referenced above as authorized by the Commission.

To the extent that a stage of the water shortage contingency plan in Schedule No. 14.1 has been activated, and a provision of Rule No. 14.1 is inconsistent with the activated stage in Schedule No. 14.1, the provisions of Schedule No. 14.1 apply.

B. TERRITORY

This schedule is applicable to customers in portions of Artesia, Bellflower, Compton, Lynwood, Norwalk, and Santa Fe Springs and in Los Angeles County.

C. MANDATORY WATER USE REDUCTIONS, MANDATORY RESTRICTIONS, AND DROUGHT EMERGENCY SURCHARGES

In response to the Governor's Executive Order (B-29-15) the State Water Resources Control Board (Water Board) imposed restrictions to achieve a statewide 25% reduction in potable urban water usage through February 28, 2016. These restrictions are designed to strongly encourage those customers with high per capita usage to achieve proportionally greater reduction than those with low use. Water users will need to reduce usage as compared to the amount they used in 2013. The mandated water use reduction for Park's service area is 8%. Park customers reduced usage in 2014, but will need to achieve additional water conservation in 2015-16 to achieve the statewide goal.

The Water Board has established the following mandatory restrictions for all water users. No customer shall use utility-supplied water for non-essential or unauthorized uses as defined below:

- a. The application of potable water to outdoor landscapes in a manner that causes runoff such that water flow onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
- b. The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.

(continued)

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PARK WATER COMPANY SCHEDULE 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

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C. MANDATORY WATER USE REDUCTIONS, MANDATORY RESTRICTIONS, AND DROUGHT EMERGENCY SURCHARGES (continued)

- c. The use of potable water for washing buildings, structures, sidewalks, walkways, patios, tennis courts, or other hard-surfaced, non-porous areas.
- d. The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system.
- e. The use of potable water for watering outside plants, lawn, landscape, and turf area during certain hours prohibited by applicable laws, during and up to 48 hours after measurable rainfall (0.1" or more).
- f. Park will promptly notify customers when aware of leaks within the customer's control. The failure to promptly repair any leaks, breaks, or other malfunction resulting in water waste in a customer's domestic or outdoor water system after notification by Park, unless other, specific arrangements are made with and agreed to by Park.
- g. The serving of water, other than upon request, in eating and drinking establishments, including but not limited to restaurants, hotels, cafes, bars, or other public places where food or drink are served and/or purchased.
- h. Hotels/motels must provide guests with the option of choosing not to have towels and linens laundered daily and prominently display notice of this option in each guestroom.
- i. The use of potable water for irrigation of ornamental turf on public street medians.
- j. The use of potable water for irrigation outside of newly constructed homes and buildings that is not delivered by drip or micro spray systems.
- k. Commercial, industrial, and institutional properties, such as campuses, golf courses, and cemeteries, immediately implement water efficiency measures to reduce potable water use in an amount consistent with the mandated reduction.
- l. Further reduction in or the complete prohibition of any other use of water declared non-essential, unauthorized, prohibited, or unlawful by an authorized government or regulatory agency or official.
- m. Use of potable water for watering streets with trucks, or other vehicles, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.

The following stages will be implemented as needed to achieve the annual mandated reduction. The utility may implement Stage 2 and the associated Drought Emergency Surcharge without first implementing Stage 1 if warranted by the mandated reduction.

(continued)

(N)

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PARK WATER COMPANY SCHEDULE 14.1
 WATER SHORTAGE CONTINGENCY PLAN
 WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
 (continued)

Stage 1

1. Outdoor irrigation is restricted to no more than three days per week:

Addresses Ending In:	Watering Days
Even Numbers (0, 2, 4, 6, 8)	Monday, Wednesday, and Saturday
Odd Numbers (1, 3, 5, 7, 9)	Tuesday, Thursday, and Sunday

2. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than 10 minutes of watering per day per station, with no watering between 8:00 a.m. and 7:00 p.m. This provision does not apply to landscape irrigation zones that exclusively use drip-type irrigation systems that use less than 1.0 inch per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive action shut-off nozzle or device that causes it to cease dispensing water immediately when not in use, or for the express purpose of adjusting or repairing an irrigation system. However, no irrigation that results in runoff can occur regardless of method.
3. Apart from the above outdoor irrigation restrictions, when a city, county, or other local public agency in Park's service area adopts restrictions on the number of days or hours of the day that customers may irrigation that are different than those adopted by Park, Park may adopt the city, county, or other local public agency's restrictions.
4. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within five (5) business days of written notification by Park, unless other arrangements are made with Park.
5. Failure to comply with these restrictions may result in the installation of a flow restrictor device along with associated fees for installation and removal.
6. Failure to comply with these restrictions may result in the installation of a real time measurement device on the customer's service line to provide the customer and Park with access to information from the device. The cost of the device, including installation, shall be billed to the customer, and nonpayment may result in discontinuance of service.
7. If conditions warrant, Park will change the number of watering days and the specific day of watering after first notifying its customers in accordance with Rule No. 14.1.
8. If conditions warrant, Park will change the number of days allowed for a customer to fix leaks, breaks or other malfunctions after first notifying its customers in accordance with Rule No. 14.1.

(continued)

(N)

Advice No. 280-W _____ LEIGH K. JORDAN _____ Date Filed _____
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PARK WATER COMPANY SCHEDULE 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

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Stage 2

Will be implemented if the Stage 1 restrictions are deemed insufficient to achieve reductions due to water supply shortages or to achieve identified water usage goals established by an authorized government agency or official.

In addition to the restrictions identified in Stage 1, the following restrictions, allocations, and drought emergency surcharges are in effect:

1. Outdoor irrigation is restricted to no more than two (2) days per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than ten (10) minutes of watering per day per station.
2. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within three (3) business days of written notification by Park, unless other arrangements are made with Park.
3. The use of potable water to refill residential swimming pools or outdoor spas more than one foot or initial filling with potable water except when existing pools are drained to repair leaks.
4. All customers will have their baseline established by using the system wide average use for 2013.
5. The customer's allocation will be based on the 2013 baseline less 8%.
6. Residential customer's allocation will be set at nine (9) Ccf per month for the months of November, December, January, February, March, April, and May. For the months of June, July, August, September, and October the allocation will be set at twelve (12) Ccf per month.
7. All usage in excess of residential customer's allocation will be charged at the regular Schedule No. PR-1-R rate plus a drought emergency surcharge rate that is calculated from the Tier 1 quantity rate multiplied by a factor of 0.5.
8. All usage for non-residential customers served under Tariff Schedule No. PR-1-NR will be charged at the regular Schedule No. PR-1-NR quantity rate plus a drought emergency surcharge rate that is calculated as the quantity rate multiplied by a factor of 0.10.
9. If feasible, customer's allocation may be based on a customer's consumption during a historical base period and will include a percentage reduction designed to meet necessary water use reductions. In addition to the normal rate paid for the unit of water, a drought surcharge will be charged to a customer for each unit of water used over the established allocation for the billing period.

(continued)

(N)

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PARK WATER COMPANY SCHEDULE 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

Page 5 of 6 (N)

Stage 3

Will be implemented if the Stage 2 allocations and drought emergency surcharges are deemed insufficient to achieve reductions due to water supply shortages or to achieve identified water usage goals established by an authorized government agency or official.

In addition to the restrictions identified in Stage 2, the following restrictions and drought emergency surcharges are in effect:

1. Outdoor irrigation is restricted to no more than two (2) days per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than five (5) minutes of watering per day per station.
2. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within two (2) business days of written notification by Park, unless other arrangements are made with Park.
3. All usage in excess of residential customer's allocation will be charged at the regular Schedule No. PR-1-R rate plus a drought emergency surcharge rate that is calculated as the Tier 1 quantity rate multiplied by a factor of 1.0.
4. All usage for non-residential customers served under Tariff Schedule No. PR-1-NR will be charged at the regular Schedule No. PR-1-NR quantity rate plus a drought emergency surcharge rate that is calculated as the quantity rate multiplied by a factor of 0.20.

Stage 4

Will be implemented if the Stage 3 allocations and drought emergency surcharges are deemed insufficient to achieve reductions due to water supply shortages or to achieve identified water usage goals established by an authorized government agency or official.

In addition to the restrictions identified in Stage 3, the following restrictions and drought emergency surcharges are in effect:

1. Outdoor irrigation is restricted to no more than one (1) day per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than five (5) minutes of watering per day per station.
2. All usage in excess of residential customer's allocation will be charged at the regular Schedule No. PR-1-R rate plus a drought emergency surcharge rate that is calculated as the Tier 1 quantity rate multiplied by a factor of 1.5.
3. All usage for non-residential customers served under Tariff Schedule No. PR-1-NR will be charged at the regular Schedule No. PR-1-NR quantity rate plus a drought emergency surcharge rate that is calculated as the quantity rate multiplied by a factor of 0.30.

(continued)

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PARK WATER COMPANY SCHEDULE 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

Page 6 of 6 (N)

D. FLOW RESTRICTOR REMOVAL CHARGE

The charge for installation and removal of a flow-restricting device shall be:
\$73 during normal business hours, and \$370 during outside normal business hours.

The flow restrictor will remain installed for a minimum of 7 days.

E. EXEMPTION AND APPEALS PROCESS

Any customer who seeks a variance from any of the provisions of this Water Shortage Contingency plan shall notify the utility in writing using the appeals form, explaining in detail the reason for such a variation. The utility shall respond to each such request in writing.

The appeals form is available online at Park website, www.parkwater.com, the Park office located at 9750 Washburn Road, Downey, 90241 or by calling 1-800-727-5987.

If the customer disagrees with such disposition, the customer shall have the right to file a complaint with the Commission.

Except as set forth in this section, no person shall have any right or claim in law or in equity against Park, or any of its employees, or the Commission because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of this Schedule No. 14.1.

F. SPECIAL CONDITIONS

1. The active stage of Schedule No. 14.1 is to remain in effect until a Tier 2 advice letter is filed with the Commission to activate a different Stage or when Schedule No. 14.1 is deactivated.
2. Drought Emergency Surcharges must be separately identified on each bill.
3. All bills are subject to reimbursement fee set forth on Schedule No. UF.
4. All monies collected by Park through Drought Emergency Surcharges shall not be accounted for as income, but shall be accumulated in the Water Revenue Adjustment Mechanism (WRAM) Balancing Account and used to offset under-collected revenues.
5. All expenses incurred by Park to implement Rule No. 14.1, and Schedule No. 14.1, and requirements of the Water Board that have not been considered in a General Rate Case or other proceeding shall be accumulated by Park in a separate memorandum account, authorized in Resolution No. W-4976, for disposition as directed or authorized from time to time by the Commission.

(N)

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Title Resolution No. _____

Rule No. 20

WATER CONSERVATION

A. Purpose

The purpose of this rule is to ensure that water resources available to the utility are put to a reasonable beneficial use and that the benefits of the utility's water supply and service extend to the largest number of persons.

B. Waste of Water Discouraged

Refer to Rule 11 B. (3).

C. Use of Water-Saving Devices and Practices

Each customer of the utility is encouraged to install water saving devices to reduce the quantity of water used within the residence. Each customer is further encouraged to adopt such other water usage and re-usage practices and procedures as are feasible and reasonable. (T) (T)

D. Water-Saving Kits

The utility will make available, without initial cost to the customer, for use in each residence receiving water service from the utility, a water-saving kit containing the following:

- (1) A device or devices for reducing faucet and shower flow rates; (D) (T)
- (2) A dye tablet or tablets for determining if a toilet tank leaks;
- (3) Other devices and programs from time to time approved by the utility; (T)
- (4) Installation and other instructions and information pertinent to conserving water. (T)

ISSUED BY

R. J. SPROWLS

President

Date Filed: February 2, 2015

Effective Date: February 2, 2015

Resolution No. _____

Advice Letter No. 1591-W

Decision No. _____

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX L

LOS ANGELES COUNTY ALL-HAZARDS MITIGATION PLAN



PUBLIC DRAFT

2019 County of Los Angeles All-Hazards Mitigation Plan

Chief Executive Office - Office of Emergency Management

2019 COUNTY OF LOS ANGELES
ALL-HAZARDS MITIGATION PLAN



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LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AB	Assembly Bill
AHMP	All-Hazards Mitigation Plan
Cal FIRE	California Department of Forestry and Fire Protection
Cal OES	California Office of Emergency Services
CFR	Code of Federal Regulations
CGS	California Geological Survey
CWPP	Community Wildfire Protection Plans
CPG	Comprehensive Preparedness Guide
CRS	Community Rating System
DFIRM	Digital Flood Insurance Rate Map
DHS	Department of Homeland Security
DMA	Disaster Mitigation Act
DR	Disaster Declaration Number
DSOD	Division of Safety of Dams
EAP	Emergency Action Plan
EPA	Environmental Protection Agency
EQ	Earthquake
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zones
GIS	Geographic Information System
IPCC	Intergovernmental Panel on Climate Change
LACMA	Los Angeles County Museum of Art
LRA	Local Responsibility Area
M	Magnitude
MARAC	Mutual Aid Regional Advisory Committee
NFIP	National Flood Insurance Program
NHM	Los Angeles County Natural History Museum
OEM	Office of Emergency Management
PGA	Peak Ground Acceleration

RL	Repetitive Loss
SFHA	Special Flood Hazard Area
SRA	State Responsibility Area
U.S.	United States
USACE	United States Army Corps of Engineers
USGS	U.S. Geological Survey
WUI	wildland-urban interface

1 INTRODUCTION

1.1 HAZARD MITIGATION PLANNING

As defined in Title 44 of the Code of Federal Regulations (CFR), Subpart M, Section 206.401, hazard mitigation is “any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.” As such, hazard mitigation is any work to minimize the impacts of any type of hazard event before it occurs. Hazard mitigation aims to reduce losses from future disasters. It is a process that identifies and profiles hazards, analyzes the people and facilities at risk, and develops mitigation actions to reduce or eliminate hazard risk. The implementation of the mitigation actions, which include short- and long-term strategies that may involve planning, policy changes, programs, projects, and other activities, is the end result of this process.

In recent years, local hazard mitigation planning has been driven by a federal law, known as the Disaster Mitigation Act of 2000 (DMA 2000). On October 30, 2000, Congress passed the DMA 2000 (Public Law 106-390), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act) (Title 42 of the United States Code Section 5121 et seq.) by repealing the act’s previous mitigation planning section (409) and replacing it with a new mitigation planning section (322). This new section emphasized the need for state, tribal, and local entities to closely coordinate mitigation planning and implementation efforts. This new section also provided the legal basis for the Federal Emergency Management Agency’s (FEMA’s) mitigation plan requirements for the Hazard Mitigation Assistance grant programs.

1.2 2019 ALL-HAZARDS MITIGATION PLAN SYNOPSIS

To meet the requirements of the DMA 2000, the Los Angeles County Office of Emergency Management (OEM) has prepared an All-Hazards Mitigation Plan (AHMP) (hereinafter referred to as the 2019 AHMP) to assess risks posed by natural hazards and to develop a mitigation action plan for reducing the risks in Unincorporated Los Angeles County. The 2019 AHMP replaces the AHMP that was approved in 2014.

The 2019 AHMP is organized to follow FEMA’s Local Mitigation Plan Review Tool, which demonstrates how local AHMPs meet the DMA 2000 regulations. As such, specific planning elements of this review tool are in their appropriate plan sections.

The 2019 AHMP structure has been updated to include the following sections:

- **Section 2 Planning Process** provides an overview of the 2019 planning process, starting with a plan update timeline. It identifies advisory committee members and describes their involvement with the plan update process. It also details stakeholder outreach, public involvement and continued public involvement. It provides an overview of the existing plans and reports and how they were incorporated into the 2019 AHMP and lastly lays out a plan update method and schedule. Supporting planning process documentation is listed in **Appendix A**.
- **Section 3 Community Profile** describes the planning area for the 2019 AHMP, which includes the unincorporated areas of the county. It touches on the current population and development trends in the county and discusses vulnerable populations in the county, including the growing homeless crisis. Finally, this section lists the county-owned and

county-related critical facilities included in this plan. Supporting community profile information can be found in **Appendix B**.

- **Section 4 Hazard Identification and Risk Assessment** describes each of the eight hazards addressed in this plan. Additionally, it includes impact (i.e., risk assessment) tables for the planning area, vulnerable populations and critical facilities within each hazard area. An overall summary description is also provided for each hazard. **Appendix C** contains supporting hazard identification and risk assessment information.
- **Section 5 Mitigation Strategy** details Los Angeles County’s capabilities (authorities, policies, programs and resources) available for hazard mitigation. It also discusses the county’s participation in the National Flood Insurance Program (NFIP). Finally, it describes the mitigation strategy, which is the blueprint for how the County will reduce its risks to hazards. The mitigation strategy is made up of three main components: mitigation goal(s); potential mitigation actions and projects; and a mitigation action plan.
- **Section 6 Plan Review, Evaluation and Implementation** discusses the revisions made to the 2019 AHMP to address changes in development, progress made in local mitigation efforts and changes to priorities.
- **Section 7 Plan Adoption** contains a scanned copy of the adoption resolution.

2 PLANNING PROCESS

Section 2 – Planning Process addresses Element A of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans	
Element A: Planning Process	
A.1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	
A.2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	
A.3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	
A.4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	
A.5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	
A.6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	

2.1 OVERVIEW OF 2019 AHMP PLANNING PROCESS

The development of the 2019 AHMP was collaborative effort between Los Angeles County OEM, AECOM Technical Services, Inc. (AECOM), an advisory committee, and various county departments and agencies. **Table 2-1** provides a timeline of the major plan update tasks and milestones by month over a 9-month period. **Table 2-2** lists the advisory committee members and how they contributed to the development of the plan.

Table 2-1. AHMP Time line

Date	Tasks	People Involved
March 2019	Reviewed the 2014 AHMP and decided to continue efforts to streamline the plan Held 2019 AHMP advisory committee kick-off meeting (March 15)	AHMP project manager, advisory committee
April 2019	Determined the hazards to be profiled, including climate change (new to the 2019 AHMP), drought, dam failure, earthquake, flood, landslide, tsunami and wildfire (all addressed in the 2014 AHMP)	AHMP project manager, AECOM
May 2019	Collected local and regional existing plans and reports	AECOM
June 2019	Determined the Geographic Information System (GIS) strategy for risk assessment including land area/geographical boundaries and critical facilities and discussed how to incorporate people experiencing homelessness	AHMP project manager, AECOM, Los Angeles County Office of Emergency Management

Table 2-1. AHMP Timeline

Date	Tasks	People Involved
July 2019	<p>Identified initial list of stakeholders</p> <p>Crafted public outreach messages for the Twitter handle @ReadyLACounty</p> <p>Created draft hazard figures</p> <p>Developed homeless people risk assessment tables</p> <p>Developed land area/geographic boundaries risk assessment tables</p> <p>Rewrote/updated the hazard profiles into a streamlined tabular format</p> <p>Began developing/updating/collecting draft mitigation actions</p> <p>Streamlined and updated the community profile section to only address the planning area, population and development trends and county critical facilities (deleted general County information)</p>	AHMP project manager, AECOM
August 2019	<p>Tweeted public outreach messages about the 2019 AHMP</p> <p>Emailed stakeholders about the 2019 AHMP</p> <p>Conducted conference call with Los Angeles County Regional Planning (August 5) to discuss joint public outreach efforts as well as mitigation strategies</p> <p>Conducted meeting with Los Angeles County Public Works (August 7) to discuss 2019 AHMP, progress made to date, and existing and new mitigation strategies</p> <p>Developed critical facilities risk assessment tables</p> <p>Created draft risk assessment tables</p> <p>Revised plan maintenance approach from quarterly meetings to annual review questionnaires</p>	AHMP project manager, AECOM, Los Angeles County Department of Regional Planning, Los Angeles County Public Works, advisory committee
September 2019	<p>Updated the capability assessment tables</p> <p>Developed a list of potential mitigation actions and prioritized actions based on a new tiered approach</p> <p>Created public outreach flyers in English and Spanish and placed on the Los Angeles County OEM website</p> <p>Documented progress in local mitigation efforts</p> <p>Addressed changes in development since the 2014 AHMP</p> <p>Created Initial Draft AHMP</p> <p>Created Public Draft AHMP</p>	AHMP project manager, AECOM, advisory committee
October 2019	<p>Created Final Draft AHMP</p>	AECOM

Table 2-2. Hazard Mitigation Advisory Committee

Name	Department / Agency, Title	Contribution
Emily Montanez	Office of Emergency Management, AHMP project manager, Senior Program Manager	Led kick-off meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.
Margaret Carlin	Office of Emergency Management, GIS Project Supervisor	Provided input on GIS, reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.
Stephanie Kim	Office of Emergency Management, Academic Intern	Reviewed and updated the community profile, provided input on people experiencing homelessness, participated on conference calls, attended department meetings, and reviewed the initial draft plan.
Caroline Chen	Los Angeles County Department of Regional Planning, Regional Planner	Attended kick-off meeting, participated on conference call, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Iris Chi	Los Angeles County Department of Regional Planning, Regional Planner	Attended kick-off meeting, participated on conference call, reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.
Loni Ezell	Los Angeles County Public Works, Disaster Services Specialist	Coordinated August 7 department meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Frank Forman	Los Angeles County Fire Department, Battalion Chief	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.
Andrew Gano	City of Glendale Fire Department, Captain	Attended kick-off meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Angie Gragoosian	Los Angeles County Public Works, Disaster Services Analyst	Attended kick-off meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Patricia Hachiya	Regional Planning, Supervising Regional Planner	Attended kick-off meeting, participated on conference call, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Jack Husted	Department of Public Works, Senior Civil Engineer	Attended August 7 meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Sheryl Jones	Emergency Services Coordinator, Southern Region Cal OES	Advised Los Angeles County OEM about initial update process and reviewed initial draft plan.
Sinan Khan	Office of Emergency Management, Associate Director	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.

Table 2-2. Hazard Mitigation Advisory Committee

Name	Department / Agency, Title	Contribution
Diana Manzano	Area D Disaster Management, Coordinator	Attended kick-off meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
John Eric Pearce	Fire Department, Captain	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Christine Shaffer	Sheriff's Department, Deputy	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Nathaniel VetGow	Los Angeles Homeless Services Authority, Director of Access and Engagement	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Steven Wallace	San Gabriel Fire Department, Interim Fire Chief	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Iain Watt	Office of Emergency Management, Emergency Management Coordinator	Participated on conference call, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.

2.2 OPPORTUNITIES FOR STAKEHOLDERS

On August 20, 2019, the AHMP project manager reached out to stakeholders about the 2019 AHMP to invite them to participate in the plan update process. The stakeholders were also notified on October 4, 2019, that a copy of the public draft plan was available for review on the Los Angeles County OEM website. Stakeholders include members of the Mutual Aid Regional Advisory Committee (MARAC) for the Southern Region. The MARAC consists of: the California Office of Emergency Services (Cal OES) regional administrator, or deputy, for the Administrative Region encompassing the mutual aid region(s); regional mutual aid coordinators (fire, law enforcement, disaster medical and other established mutual aid systems); a representative from each operational area located in the mutual aid region; representatives from two municipalities (small/large and rotates bi-annually); regional public utility representative; private utility representative; special district representative; and other designee as appointed by an individual MARAC. Stakeholder documentation is located in **Appendix A**.

2.3 PUBLIC INVOLVEMENT

The Los Angeles County OEM engaged the public in the plan update process through various media formats. A flyer about the 2019 AHMP was created in both English and Spanish and placed on the Los Angeles County OEM website. The website also includes a copy of the public draft plan for public comment on October 4, 2019.

<https://www.lacounty.gov/emergenc/vcounty-of-los-angeles-all-hazards-mitigation-plan/>

Additionally, the Los Angeles County OEM used Twitter, @ReadyLACounty, to engage the public through a series of tweets about the 2019 AHMP, hazards in Los Angeles County, hazard mitigation planning, and the public draft plan.

2.4 REVIEW AND INCORPORATION OF EXISTING PLANS AND REPORTS

The consultant reviewed existing relevant information to include in the 2019 AHMP. **Table 2-3** lists the plans and reports reviewed as well as information to be incorporated into the 2019 AHMP.

Table 2-3. Existing Plans and Reports

Plans and Reports	Information to be Incorporated into the 2019 AHMP
Los Angeles County Operational Area Emergency Response Plan (2012)	Appendix K Hazards-Specific to the operational area into Section 4 Hazard Identification and Risk Assessment
Los Angeles County 2035 General Plan (2015)	Safety element mitigation policies into Section 5 Mitigation Strategy
Los Angeles County Floodplain Management Plan (2016)	Flood hazard profile, non-implemented flood mitigation initiatives into Section 4 Hazard Identification and Risk Assessment
County of Los Angeles Floodplain Management Plan Progress Report 2017 – 2018	Non-implemented flood mitigation initiatives into Section 5 Mitigation Strategy, implemented flood mitigation initiatives into Section 6 Plan Review, Evaluation, and Implementation
County of Los Angeles Repetitive Loss Area Analysis Progress Report 2017 – 2018	Non-implemented flood mitigation initiatives into Section 5 Mitigation Strategy, implemented flood mitigation initiatives into Section 6 Plan Review, Evaluation, and Implementation
Unincorporated Los Angeles County Community Climate Action Plan 2020	Climate change mitigation objectives into Section 5 Mitigation Strategy
2019 Greater Los Angeles Homeless Count Results	People experiencing homelessness count into Section 4 Hazard Identification and Risk Assessment
Los Angeles County Fire Department 2018 Strategic Fire Plan	Vegetation management programs into Section 5 Mitigation Strategy
Southern California Earthquake Data Center's Earthquake Catalogs	Historic seismic data into Section 4 Hazard Identification and Risk Assessment
Maritime Tsunami Response Playbooks: Background Information and Guidance for Response and Hazard Mitigation Use (2016)	Historical tsunami information and evaluation data into Section 4 Hazard Identification and Risk Assessment
FEMA Flood Insurance Study; Los Angeles County, California (2018)	Historical flood information and flood hazard areas into Section 4 Hazard Identification and Risk Assessment
U.S. Geological Survey (USGS): Rainfall and Landslides in Southern California (active)	Landslide nature, location, historical and extent information into Section 4 Hazard Identification and Risk Assessment

2.5 CONTINUED PUBLIC PARTICIPATION

A copy of the 2019 AHMP will be kept on the Los Angeles County OEM website along with contact information. The Los Angeles County OEM will also notify residents of any changes or

updates to the 2019 AHMP, including mitigation projects identified in the plan as they are implemented, via @ReadyLACounty on Twitter.

2.6 PLAN UPDATE METHOD AND SCHEDULE

The 2014 AHMP recommended quarterly meetings to discuss and track mitigation projects implemented during the lifespan of the 2014 AHMP. It is unknown how often specific departments/agencies met to track the status of their mitigation actions. For the 2019 AHMP, the plan update method and schedule has been revised to include an annual review and an advisory committee roundtable prior to the 5-year update. Mitigation projects will be monitored via a progress project report. Details are as follows:

- Annual Review Worksheets:** Every 12 months from plan adoption, the AHMP project manager will email each member of the advisory committee an Annual Review Worksheet to complete. As shown in Appendix A, the Annual Review Worksheet reflects the Local Mitigation Plan Review Tool and includes the following: planning process, hazard profile, risk assessment, and mitigation strategy. Each member of the advisory committee will email completed worksheets back to the AHMP project manager to review. The AHMP project manager will summarize these findings and email them out to the committee. If the AHMP project manager believes that the 2019 AHMP needs to be updated based on the findings, then an invitation will be sent to advisory committee members to attend a formal AHMP update meeting.
- Mitigation Progress Project Reports:** Mitigation actions will be monitored and updated using the Mitigation Project Progress Report. During each annual review, each department or agency currently administering a mitigation project will submit a progress report to the AHMP project manager. For projects that are being funded by a FEMA mitigation grant, FEMA quarterly reports may be used as the preferred reporting tool. As shown in Appendix A, the progress report will discuss the current status of the mitigation project, including any changes made to the project, identify implementation problems, and describe appropriate strategies to overcome them.
- Advisory Committee Roundtable:** On the fourth year of the update, the AHMP project manager will reconvene the advisory committee updating membership, if necessary) and lead a tabletop exercise with the advisory committee to: collect the Annual Review Worksheet and any Mitigation Project Progress Reports and FEMA quarterly reports; determine hazards to be included in the 2024 AHMP; develop a new work plan; and begin the plan update process.

3 COMMUNITY PROFILE

3.1 PLANNING AREA

With approximately 4,760.72 square miles, Los Angeles County is geographically one of the largest counties in the country. As shown in Figure 3-1, the county stretches along 75 miles of the Pacific coast of Southern California and is bordered to the east by Orange County and San Bernardino County, to the north by Kern County, and to the west by Ventura County. Los Angeles County has two islands, Santa Catalina (75.00 square miles) and San Clemente (60.69 square miles), which are part of an eight-island group called the Channel Islands.

As shown in Tables 3-1 – 3-6 and Figures 3-2 – 3-6, the county is divided into five supervisorial districts, each representing approximately 2 million people in 88 cities and approximately 140 communities or 122 county-wide statistical areas. The five supervisorial districts consist of 4,150 square miles, with 3,014.17 square miles located in the unincorporated areas. The remaining area of Los Angeles County is federal land, including the Los Padres National Forest and Angeles National Forest.

For the 2019 AHMP, the planning area is defined as Unincorporated Los Angeles County. However, the plan’s risk assessment includes: Los Angeles County, Unincorporated Los Angeles County, and supervisorial districts 1-5. In addition, specific county-wide statistical area risk assessment information is provided in Appendix C.

Table 3-1. Los Angeles County Land Area

Entity	Square Miles
Los Angeles County	4,760.72
Unincorporated Los Angeles County	3,041.17
Supervisorial District 1	246.19
Supervisorial District 2	161.83
Supervisorial District 3	431.21
Supervisorial District 4	439.95
Supervisorial District 5	2,807.00

Table 3-2. Supervisorial District 1

City	County-wide Statistical Area
Azusa	Arcaadia
Baldwin Park	Angeles National Forest
Bell	Avocado Heights
Bell Gardens	Azusa
Claremont	Bandini Islands

Table 3-2. Supervisorial District 1

City	County-wide Statistical Area
Commerence	Bassett
Cudahy	Charter Oak
El Monte	Claremont
Huntington Park	Covina
Industry	Covina (Charter Oak)
Irwindale	Duarte
La Puente	East Los Angeles
Maywood	El Monte
Montebello	Florence – Firestone
Monterey Park	Glendora
Pico Rivera	Hacienda Heights
Pomona	La Verne
Rosemead	Lynwood
South El Monte	North Whittier
South Gate	Padua Hills
Vernon	Pellissier Village
Walnut	Pomona
West Covina	Rowland Heights
	San Jose Hills
	South El Monte
	South San Gabriel
	Sunrise Village
	Valinda
	Walnut
	Walnut Park
	West Puente Valley
	West Whittier / Los Nietos
	Whittier
	Whittier Narrows

Table 3-3. Supervisorial District 2

City	County-wide Statistical Area
Carson	Athens Village
Compton	Athens-Westmont
Culver City	Del Aire
Gardena	Del Rey
Hawthorne	East Rancho Dominguez
Inglewood	El Camino Village
Lawndale	Florence – Firestone
Los Angeles (portion)	Hawthorne
Lynwood	Ladera Heights
	Lennox
	Lynwood
	Marina del Rey
	Rancho Dominguez
	Rosewood
	Rosewood/East Gardena
	Rosewood/West Rancho Dominguez
	View Park/Windsor Hills
	Walnut Park
	West Carson
	West Rancho Dominguez
	Willowbrook
	Wiseburn

Table 3-4. Supervisorial District 3

City	County-wide Statistical Area
Agoura Hills	Angeles National Forest
Beverly Hills	Franklin Canyon
Calabasas	Marina del Rey
Hidden Hills	Miracle Mile
Malibu	Kegel/Lopez Canyons
San Fernando	Santa Monica Mountains
Santa Monica	Universal City
West Hollywood	West LA
Westlake Village	Westhills

Table 3-5. Supervisorial District 4

City	County-wide Statistical Area
Artesia	Cerritos
Avalon	Del Aire
Bellflower	East La Mirada
Cerritos	East Rancho Dominguez
Diamond Bar	East Whittier
Downey	El Camino Village
El Segundo	Hacienda Heights
Hawaiian Gardens	Harbor Gateway
Hermosa Beach	La Habra Heights
La Habra Heights	La Rambla
La Mirada	Lakewood
Lakewood	Lennox
Lomita	Long Beach
Long Beach	Lynwood
Los Angeles (portion)	Marina del Rey
Manhattan Beach	Palos Verdes Peninsula
Norwalk	Rancho Dominguez
Palos Verdes Estates	Rowland Heights
Paramount	San Clemente Island
Rancho Palos Verdes	Santa Catalina Island

Table 3-5. Supervisorial District 4

City	County-wide Statistical Area
Redondo Beach	South Whittier
Rolling Hills	Sunrise Village
Rolling Hills Estates	West Carson
Santa Fe Springs	West Whittier / Los Nietos
Signal Hill	Westfield/Academy Hills
Torrance	Whittier
Whittier	

Table 3-6. Supervisorial District 5

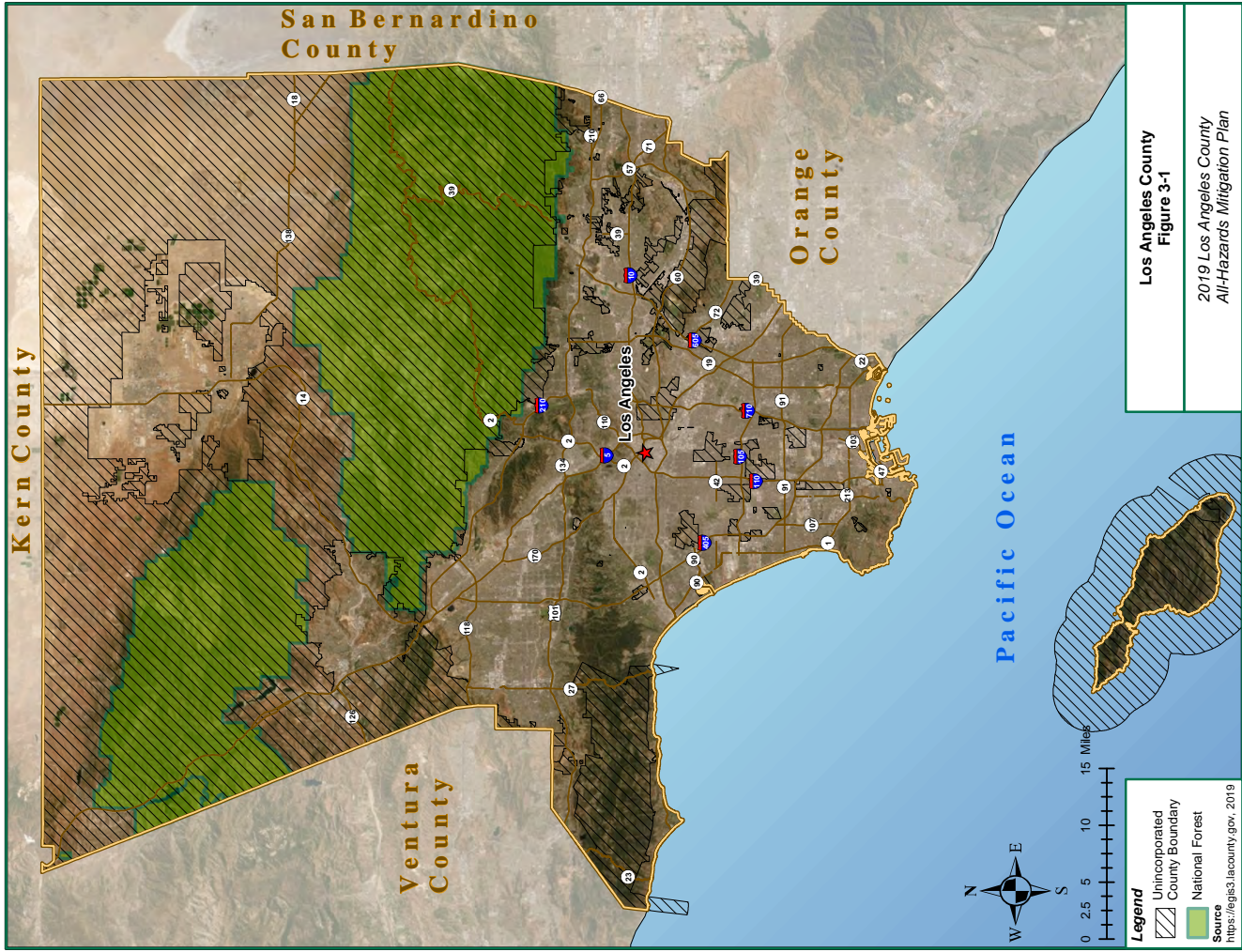
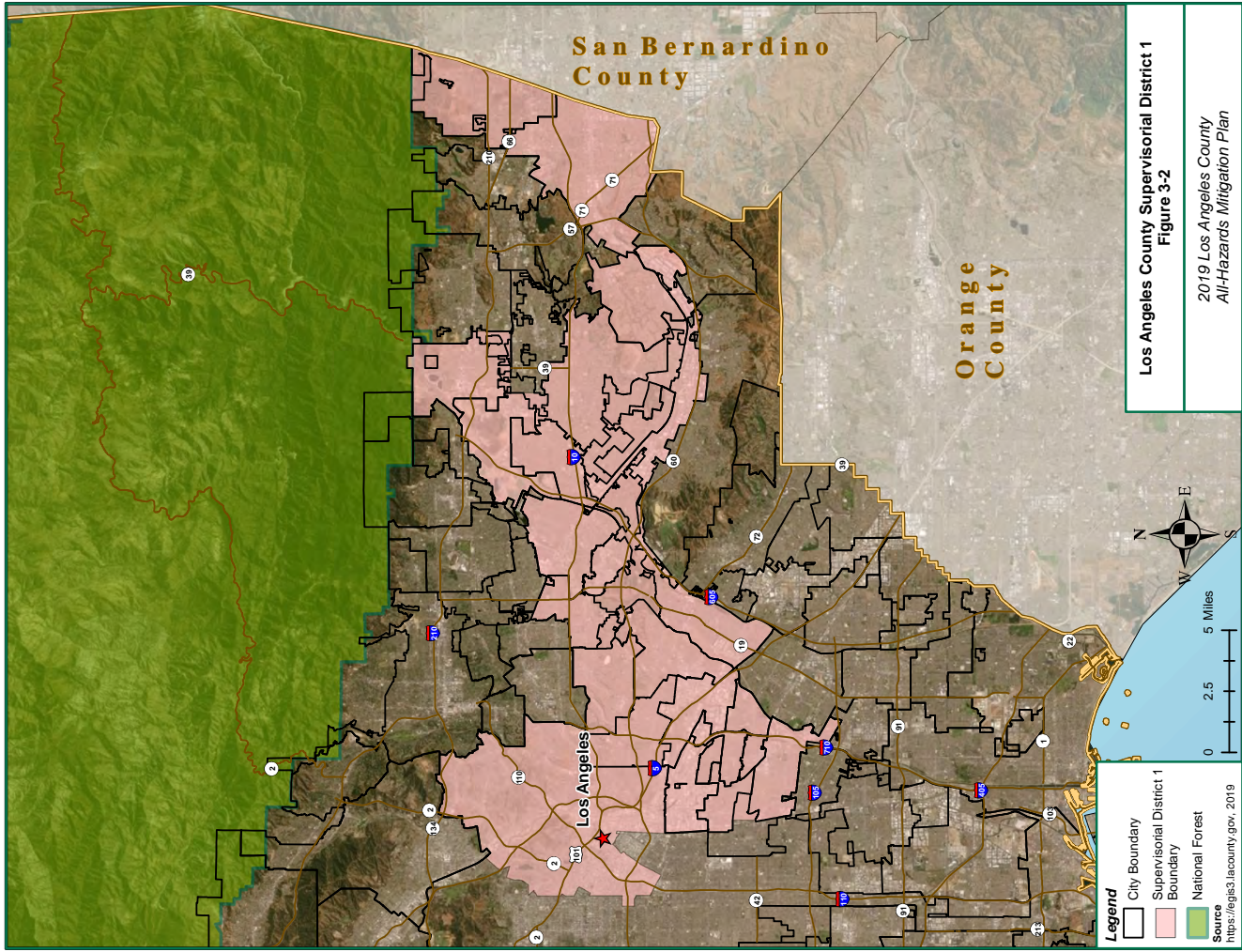
City	County-wide Statistical Area
Alhambra	Acton
Arcadia	Agua Dulce
Bradbury	Altadena
Covina	Anavende
Duarte	Angeles National Forest
Glendale	Arcadia
Glendora	Azusa
La Canada – Flintridge	Bouquet Canyon
La Verne	Bradbury
Lancaster	Canyon Country
Monrovia	Castaic
Palmdale	Claremont
Pasadena	Covina
San Dimas	Covina (Charter Oak)
San Gabriel	Del Sur
San Marino	Desert View Highlands
Santa Clarita	Duarte
Sierra Madre	East Covina
South Pasadena	East Lancaster
Temple City	East Pasadena
Los Angeles City	Elizabeth Lake
Canoga Park (portion)	Glendora

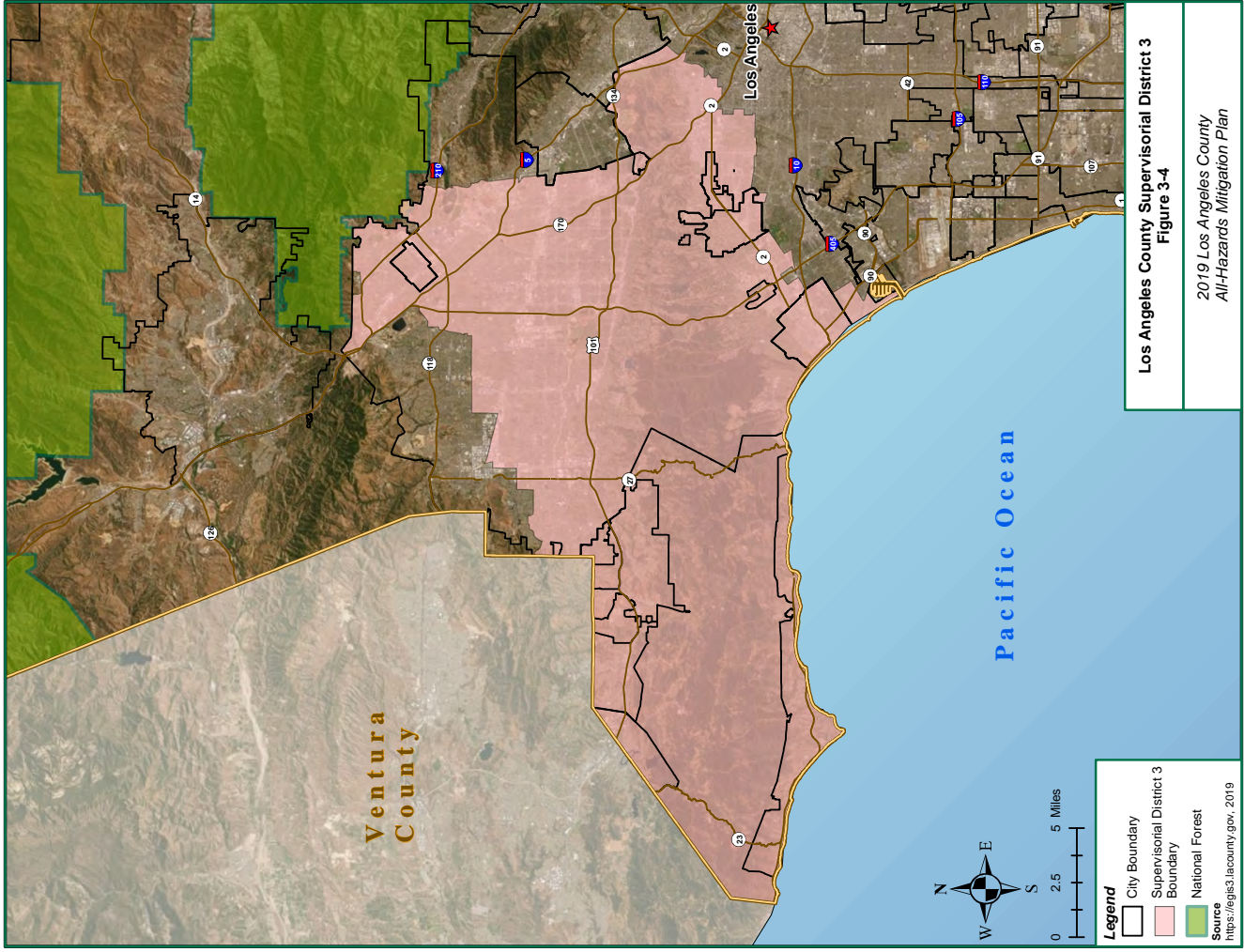
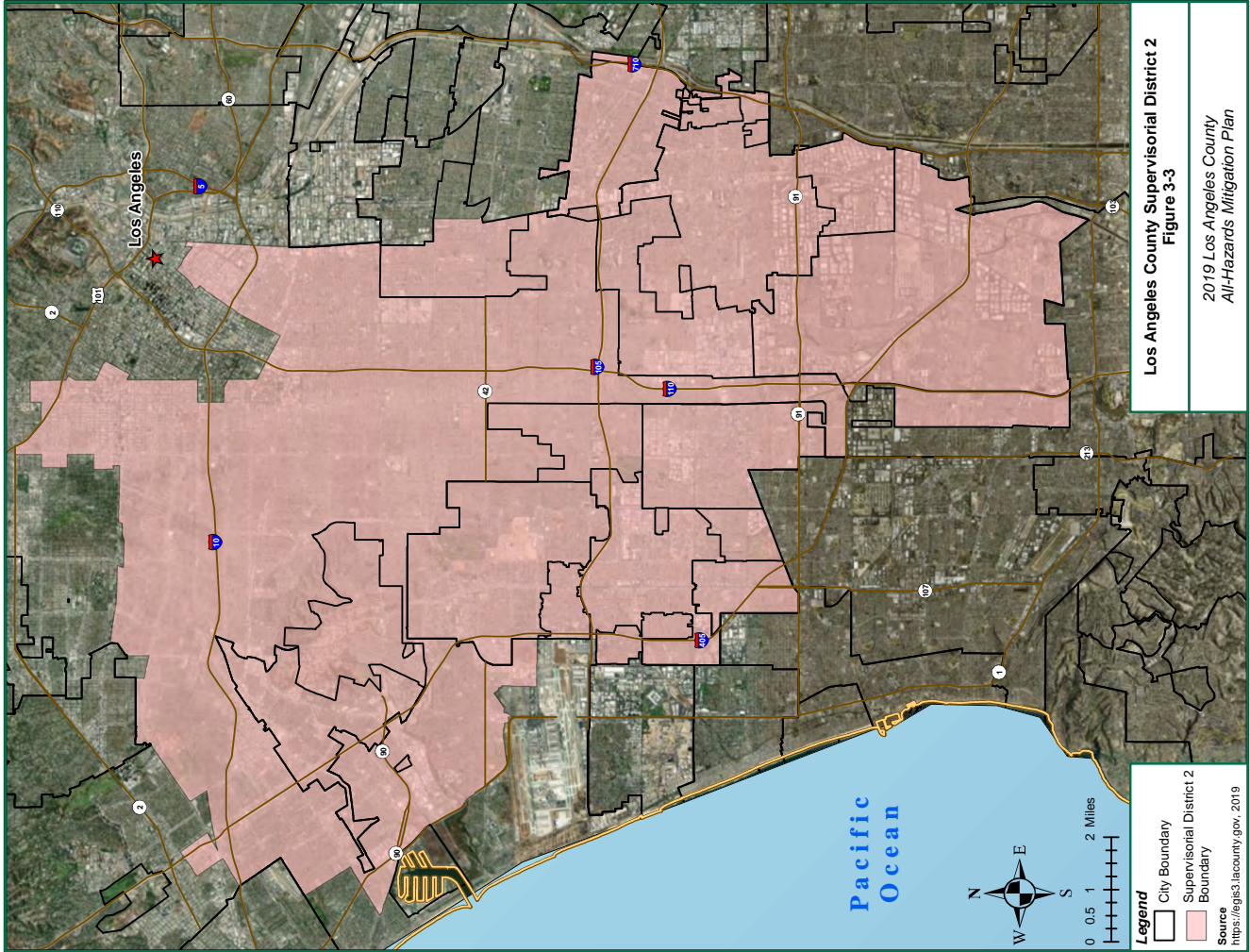
Table 3-6. Supervisorial District 5

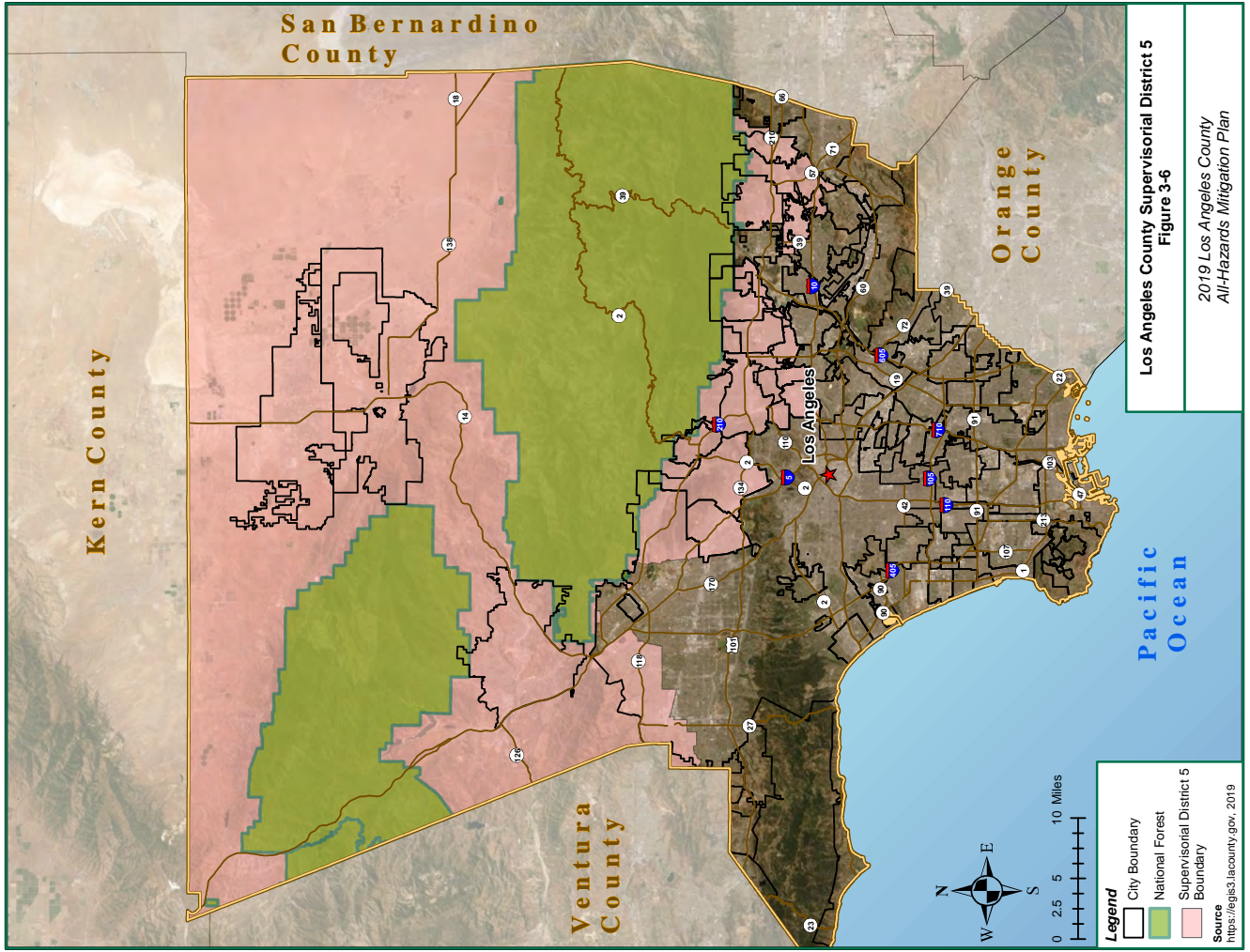
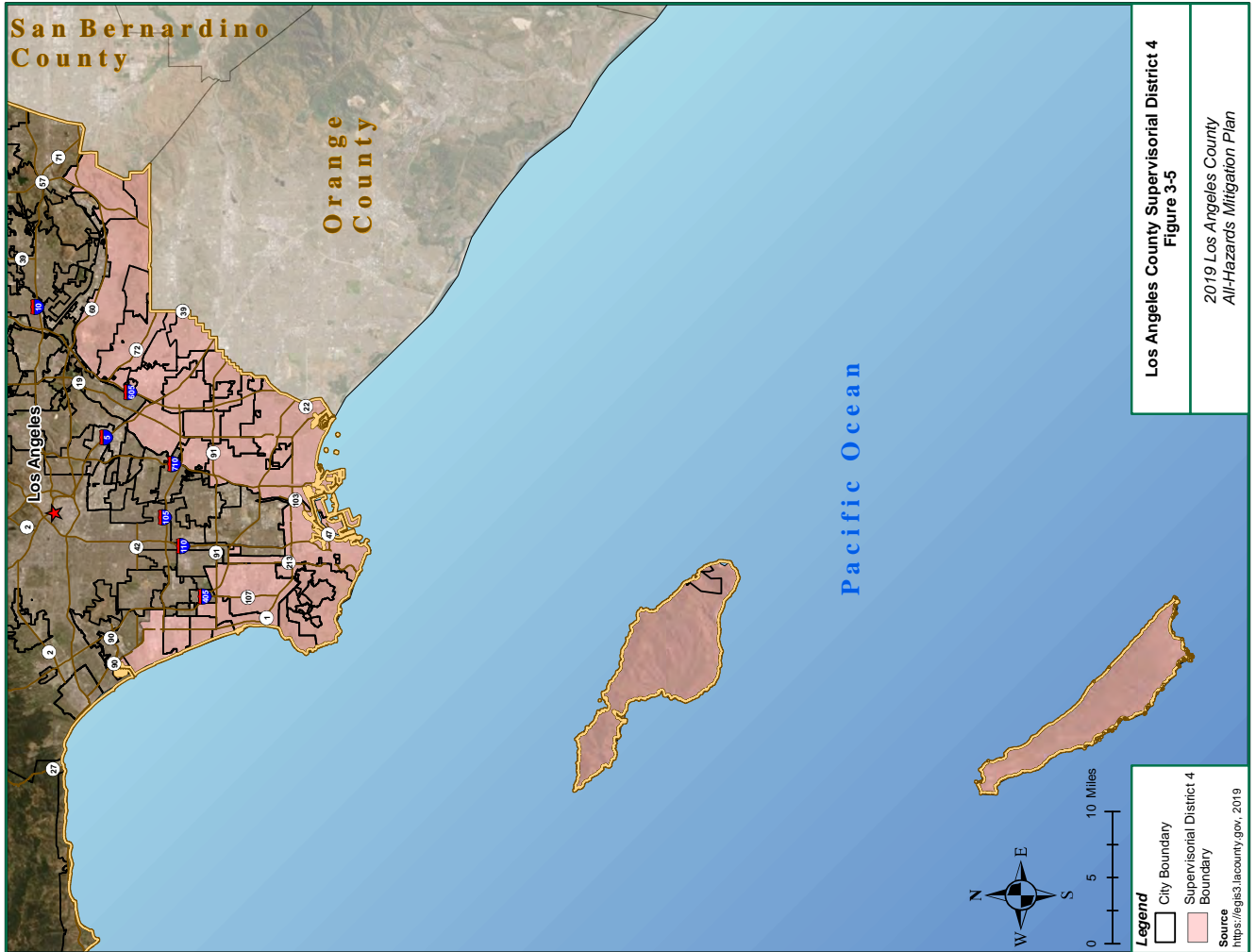
City	County-wide Statistical Area
Chatsworth (portion)	Hi Vista
Granada Hills (portion)	Kagel / Lopez Canyons
Hansen Dam (portion)	La Crescenta-Montrose
Lake View Terrace (portion)	La Verne
Mission Hills (portion)	Lake Hughes
Northridge (portion)	Lake Los Angeles
Olive View Hospital (Sylmar)	Lake Manor
Porter Ranch	Leona Valley
Shadow Hills	Littlerock
Sun Valley (portion)	Littlerock/Juniper Hills
Sunland	Littlerock/Pearblossom
Sylmar (portion)	Llano
Tujunga	Monrovia
West Hills (portion)	Newhall
	North Lancaster
	Northeast San Gabriel
	Palmdale
	Pearblossom/Llano
	Placerita Canyon
	Pomona
	Quartz Hill
	Rosevelt
	San Francisquito Canyon/Bouquet Canyon
	San Pasqual
	Sand Canyon
	Saugus
	Saugus/Canyon Country
	South Antelope Valley
	South Edwards
	Southeast Antelope Valley
	Stevenson Ranch
	Sun Village
	Twin Lakes/Oat Mountain

Table 3-6. Supervisorial District 5

City	County-wide Statistical Area
	Val Verde
	Valencia
	West Antelope Valley
	West Chatsworth
	White Fence Farms







3.2 POPULATION AND DEVELOPMENT TRENDS

Since the drafting of the 2014 AHMP, United States (U.S.) Census Bureau Intercensal Estimates from July 1, 2015, to July 1, 2018, show the number of people residing in Los Angeles County only grew from 10,097,037 to 10,105,518. While the county experienced population growth of 0.50 percent in 2015 and 0.23 percent in 2016, the county population fell by 0.02 percent in 2017 and 0.13 percent in 2018.

The California Department of Finance noted that the decline in population can be linked in part to a decline in birthrate. Researchers at the University of Southern California Lusk Center for Real Estate also suggest that one of the biggest reasons behind Los Angeles County's growth rate slip is due the lack of housing. Despite the city of Los Angeles adding between 15,000 and 17,000 units of housing each year from 2014 to 2018, housing has become prohibitively unaffordable, which has led many young Los Angeles County residents to move out-of-state or put down roots in nearby Inland Empire counties, where thousands of new jobs in distribution hubs and fulfillment centers have fueled more affordable housing development.

For the 2019 AHMP, population and residential buildings are not included in the risk assessment. As 2020 U.S. Census data become available, this information may be included in plan updates.

3.3 VULNERABLE POPULATIONS

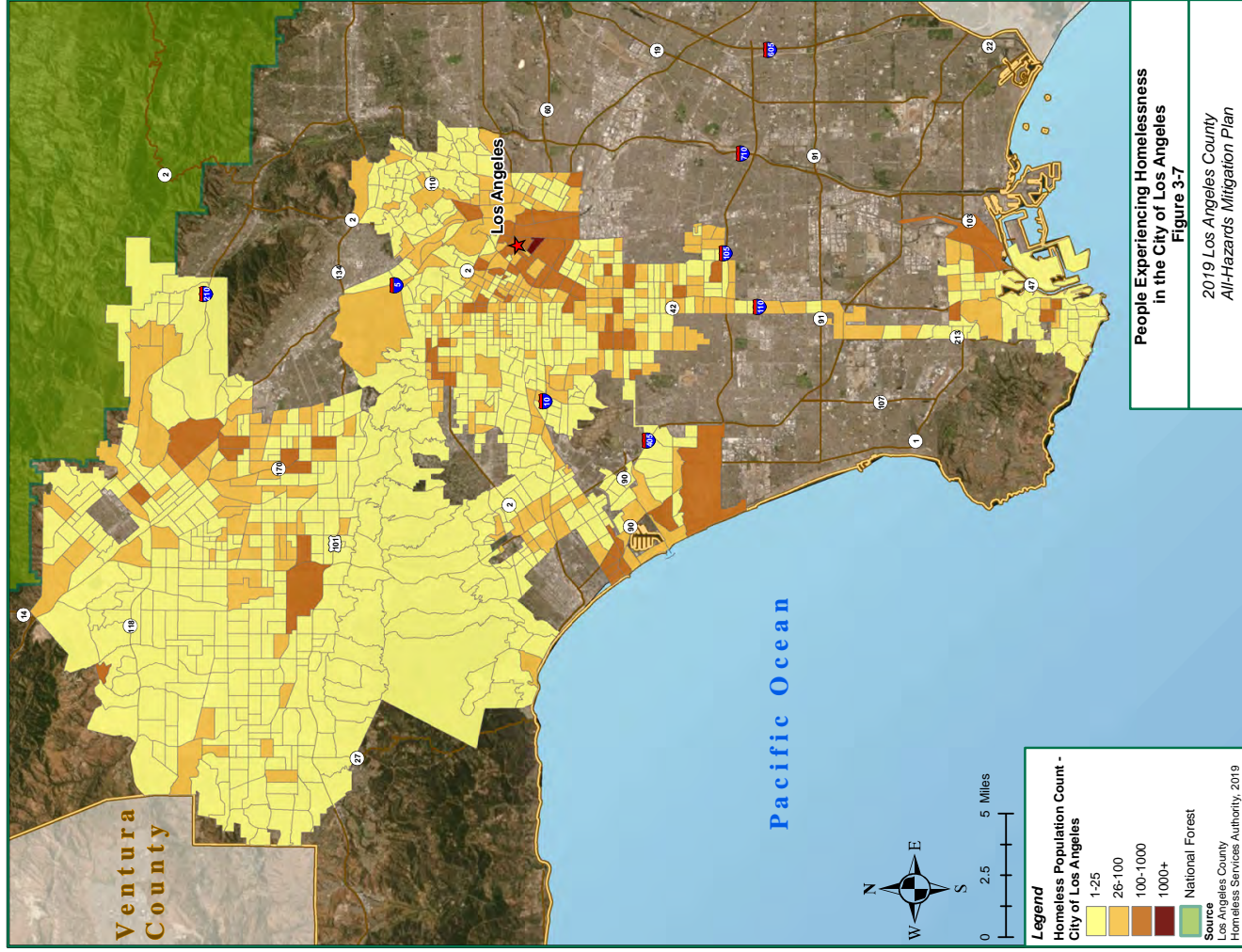
As noted by the Center for Disease Control (CDC), "Everyone must remain safe in an emergency. But for some, it's more difficult." Vulnerable or at-risk groups include people that may have difficulty communicating or accessing medical care, need help maintaining independence, require supervision, and need help accessing transportation.

For the 2019 AHMP, vulnerable population groups addressed in the risk assessment include people experiencing homelessness. People experiencing homelessness have become a regional crisis as the number of this vulnerable population group has risen to nearly 60,000 in Los Angeles County alone. **Table 3-7** and **Figures 3-7** and **3-8** show the total point-in-time number of people experiencing homelessness in the city of Los Angeles and Unincorporated Los Angeles County, as captured for the 2019 Greater Los Angeles Homeless Count.

There are several other vulnerable groups at-risk to hazards in Los Angeles County; future updates of the AHMP will expand vulnerable population categories as the 2020 U.S. Census socioeconomic status, household composition and disability, minority status and language, and housing and transportation data becomes available.

Table 3-7. People Experiencing Homelessness

Entity	Total # of People Experiencing Homelessness (Sheltered and Unsheltered)
City of Los Angeles	32,931
Unincorporated Los Angeles County	5,881



3.4 CRITICAL FACILITIES

A critical facility provides services and functions essential to a community, especially during and after a disaster. Common types of critical facilities include: fire stations, police stations, hospitals, schools, water and waste water systems, and utilities. Critical facilities may also include places that can be used for sheltering or staging purposes, such as community centers and libraries. Critical facilities may also include large public gathering spots.

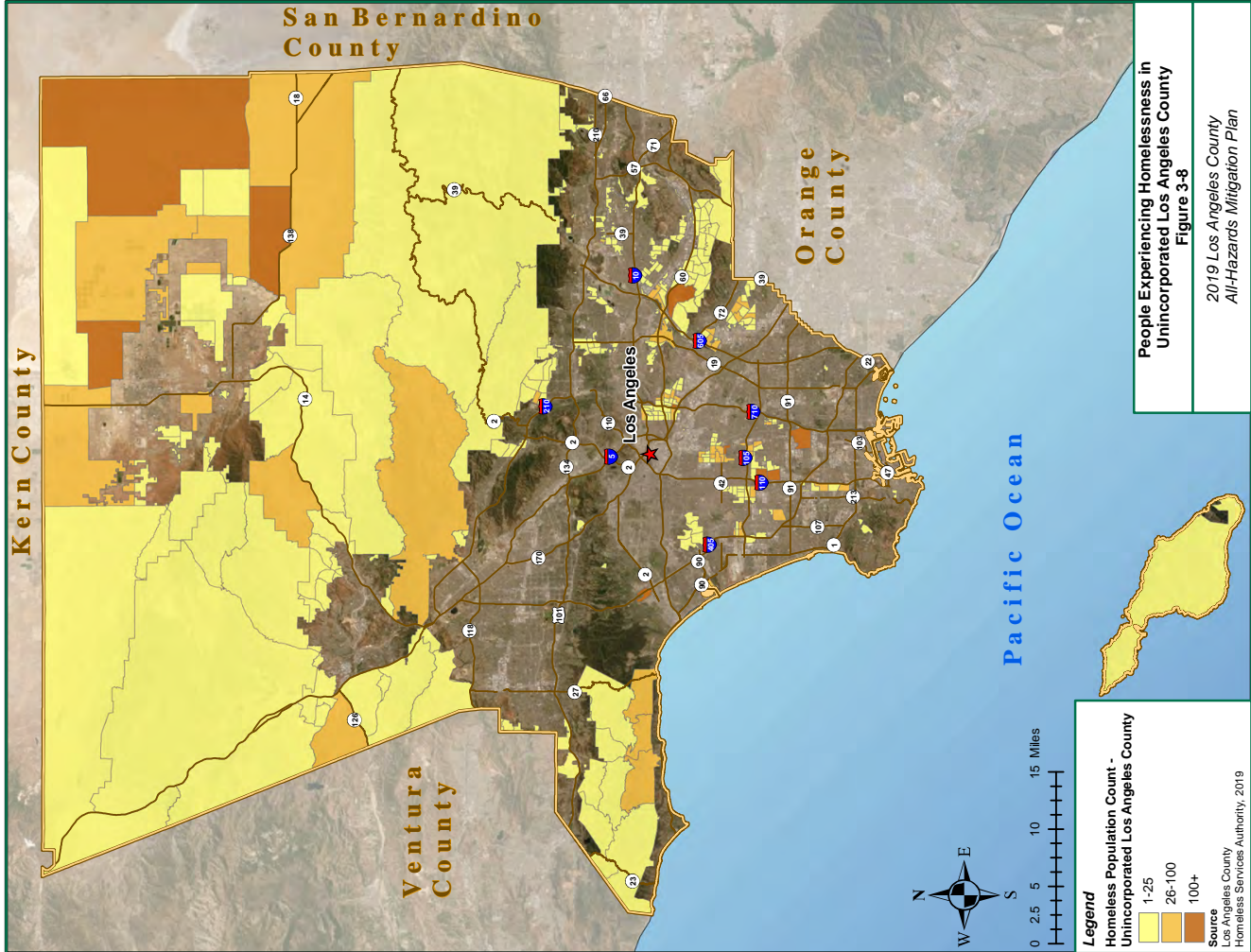
Los Angeles County does not currently maintain a centralized critical facilities database. For the 2019 AHMP, 915 major county-owned and county-related critical facilities were collected from various county department and agencies and also from the U.S. Department of Homeland Security's (DHS) Homeland Infrastructure-Foundation-Level Data site. Critical facility names and addresses were then geocoded to a location and the resulting geographic features were used for the risk assessment. The results of this process are shown in **Table 3-8** and **Figure 3-9** through **Figure 3-19**. Facility-specific information is provided in **Appendix B**. Some departments and agencies have multiple facilities at the same location; hence there are duplications of facility sites.

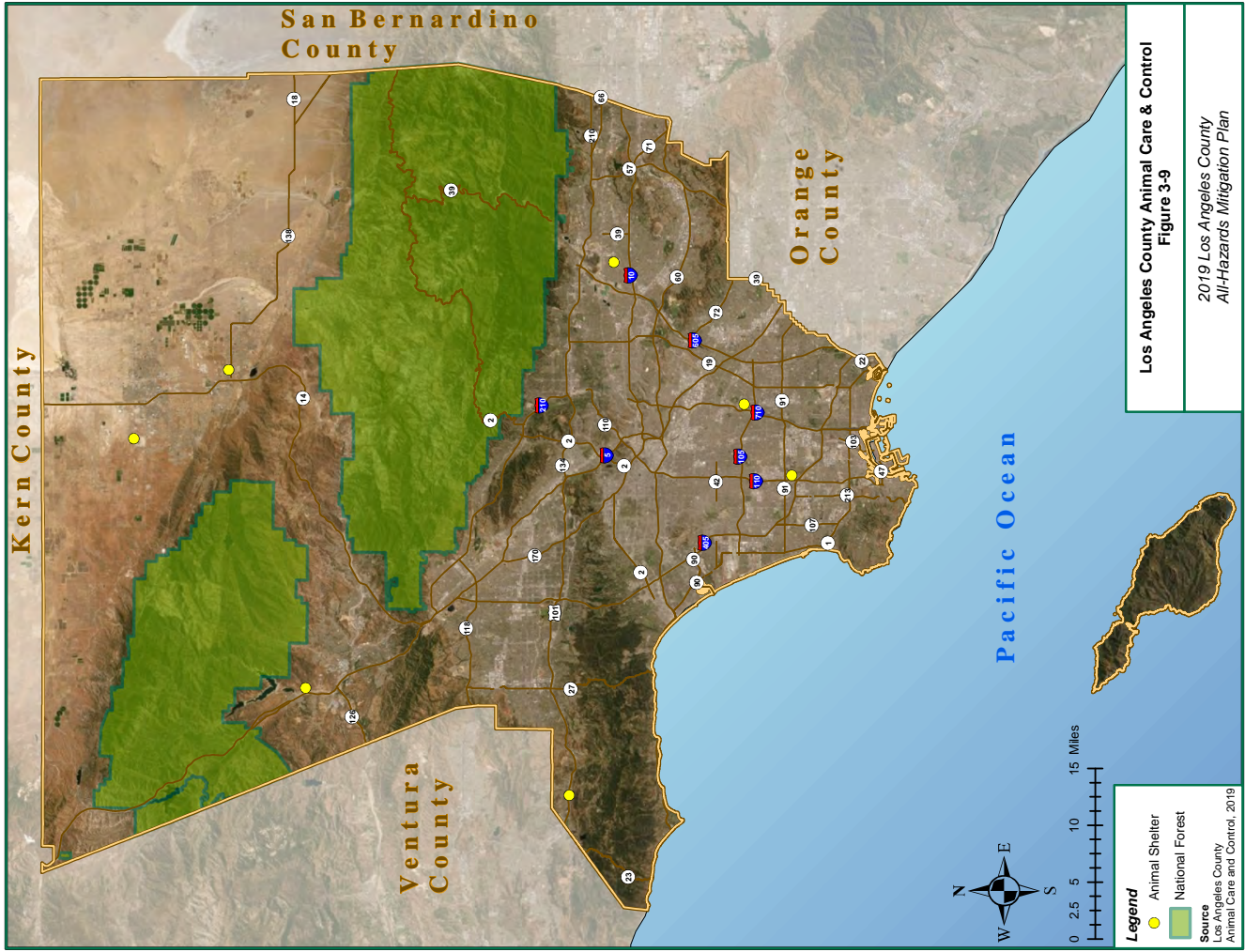
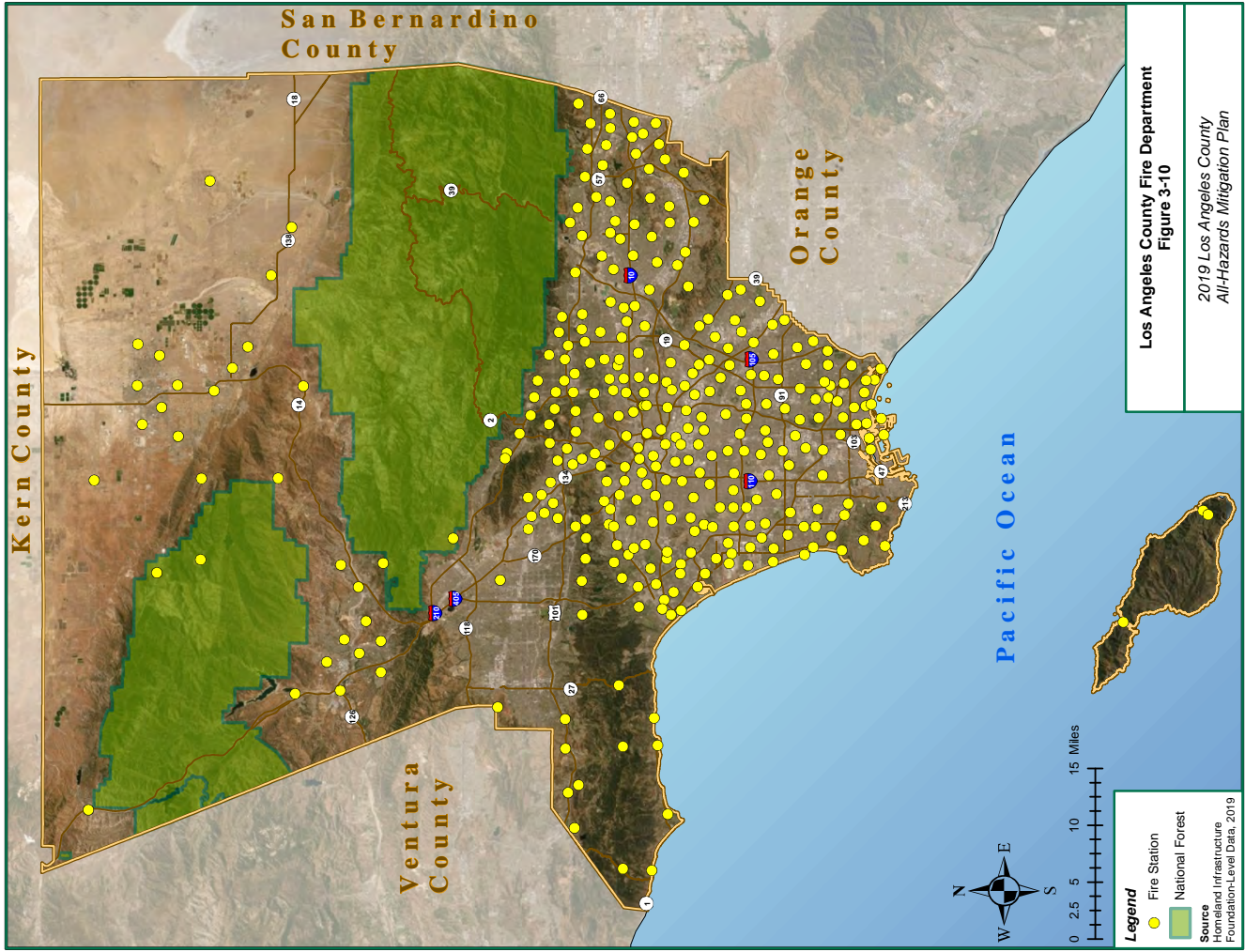
The County hopes to implement a coordinated data collection and database system for critical facilities; as such, future updates to this plan will likely include an expanded critical facilities list.

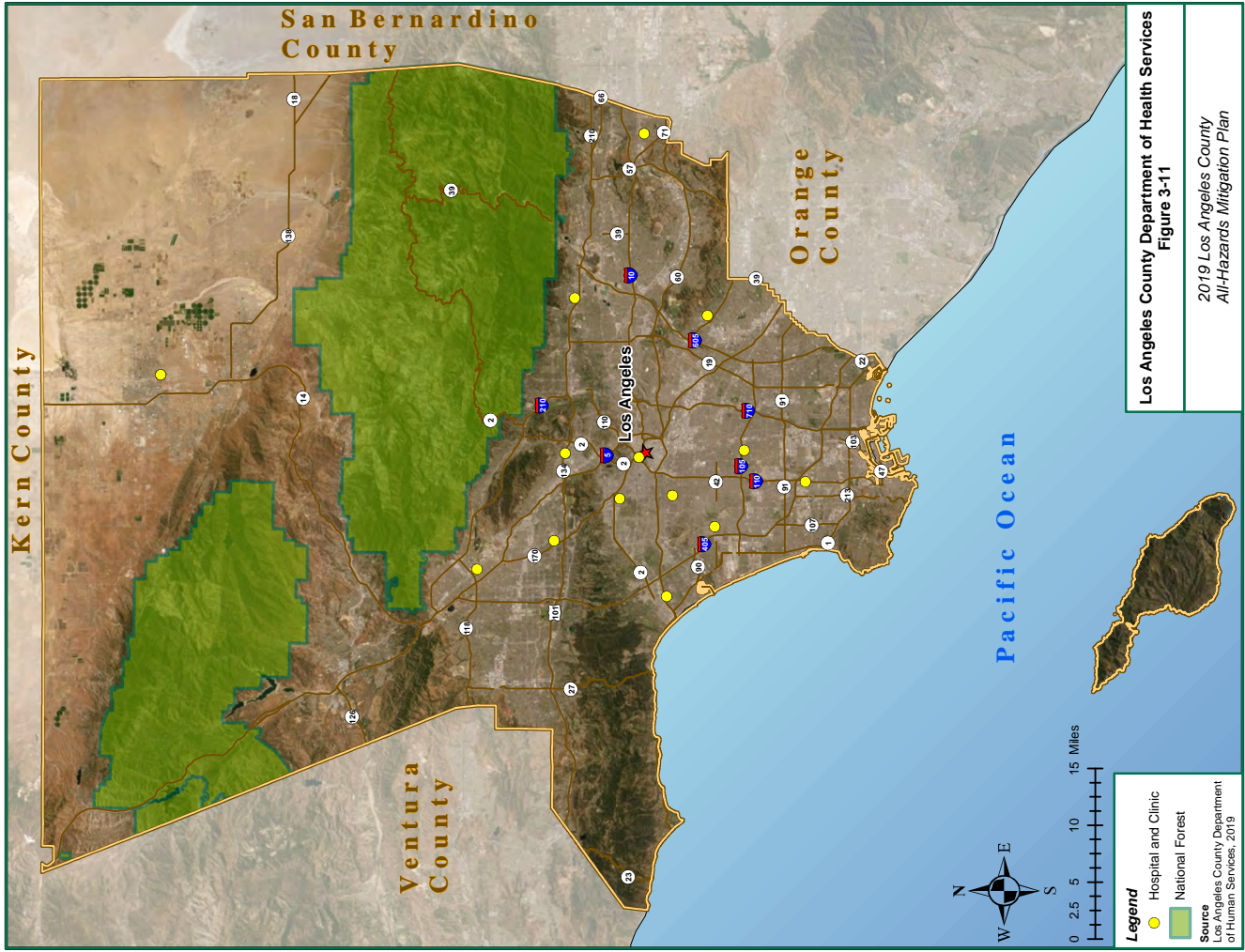
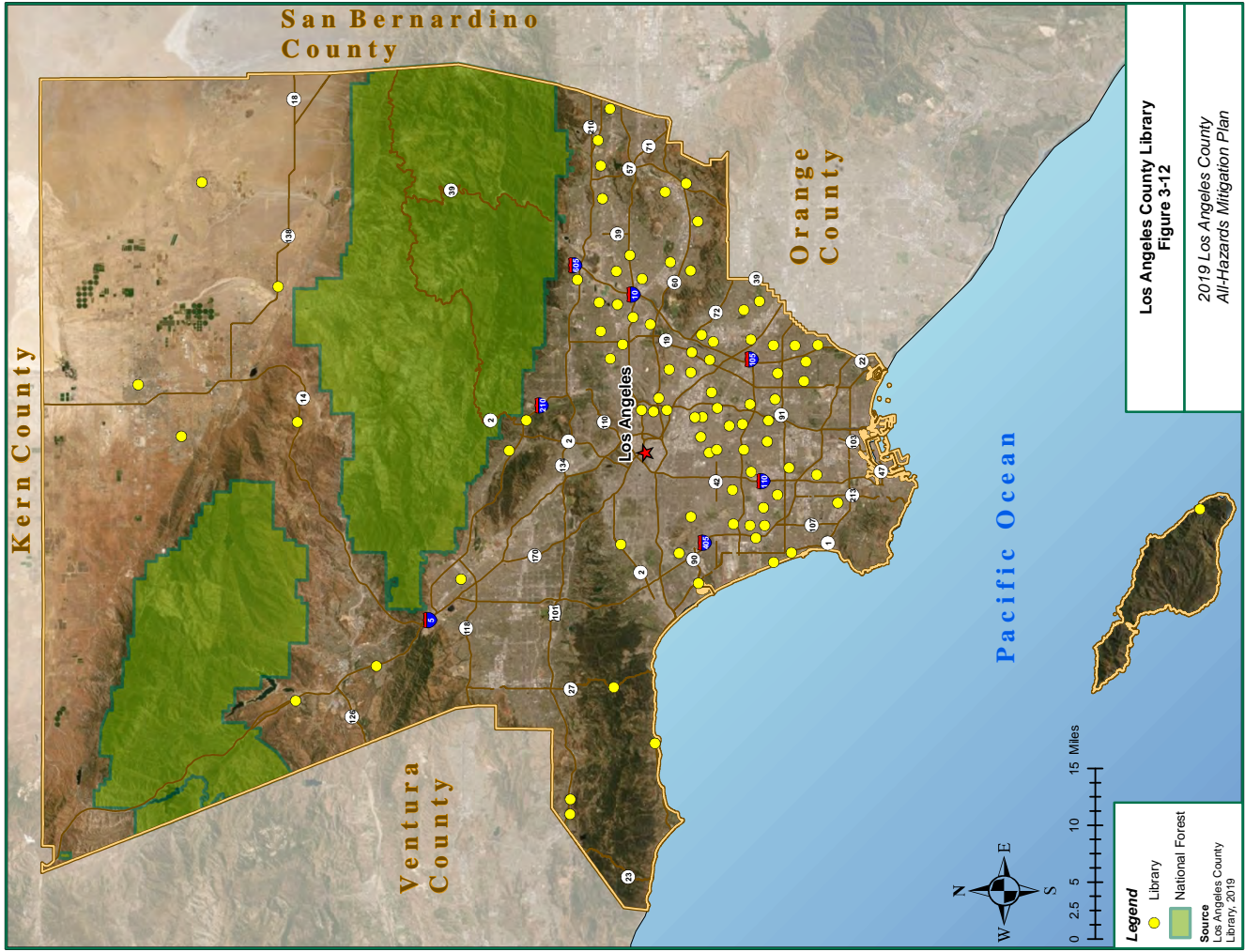
Table 3-8. Los Angeles County-Owned and County-Related Critical Facilities

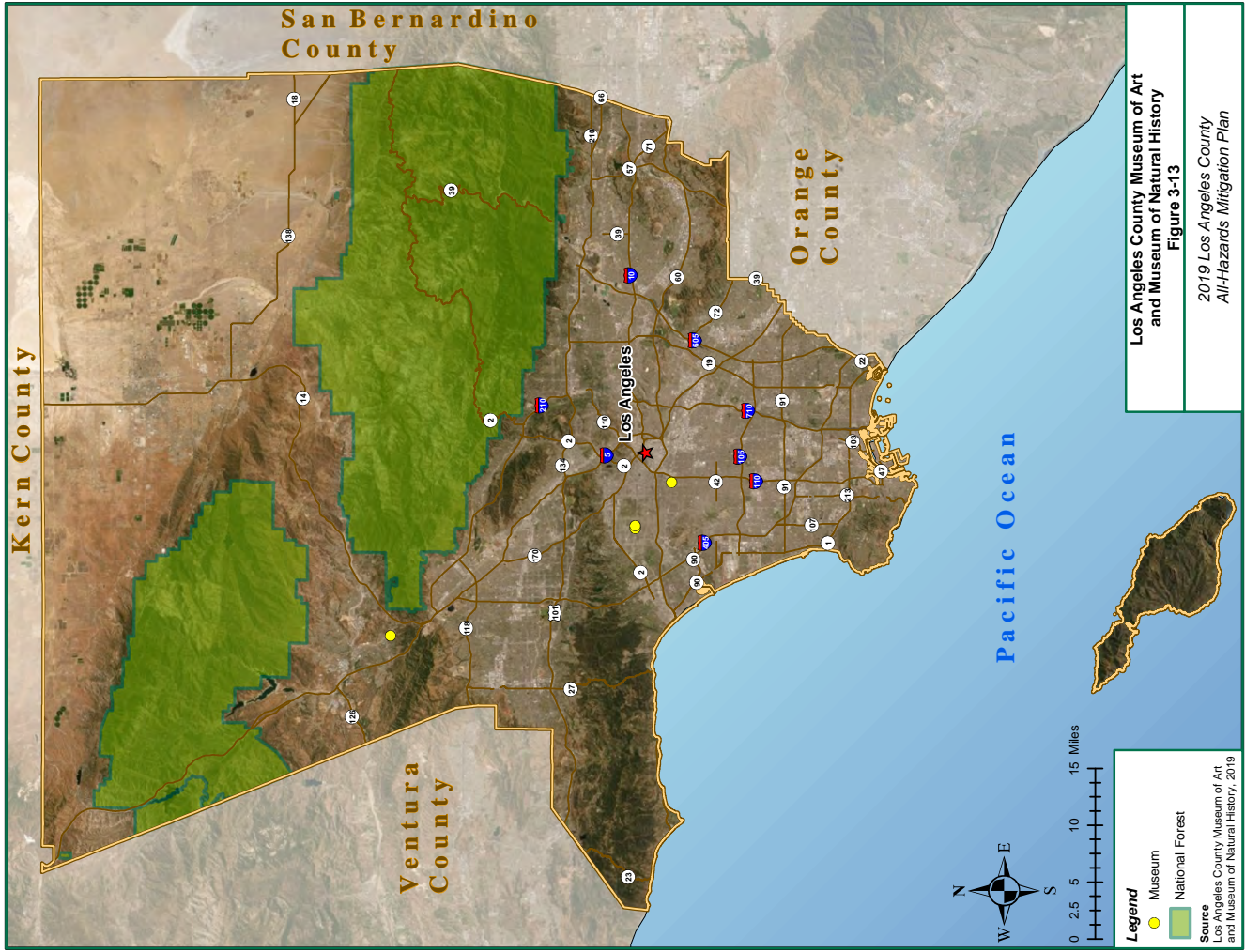
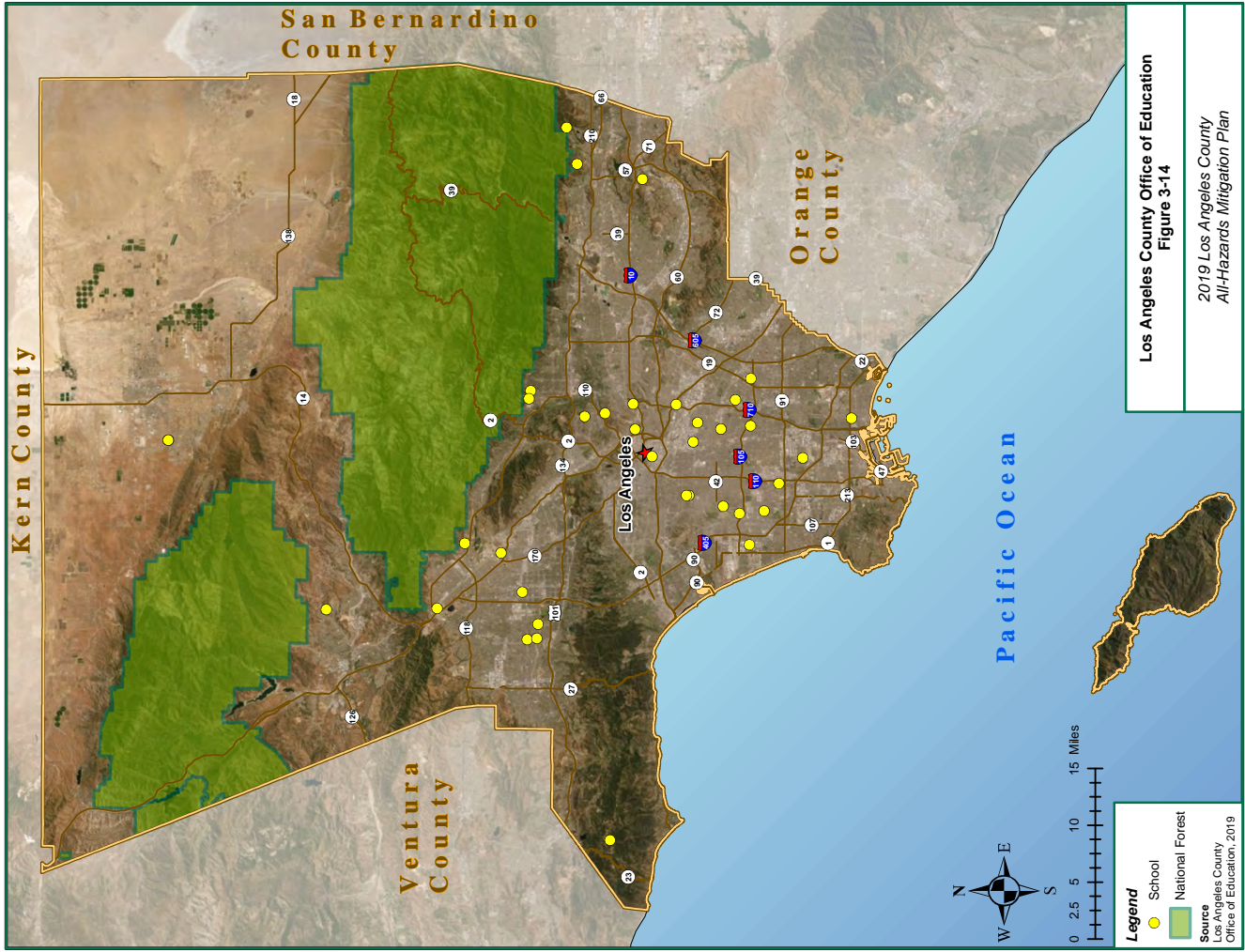
Department / Agency	# of Facilities
Los Angeles County Animal Care & Control	7
Los Angeles County Fire Department	337*
Los Angeles County Health Services	29
Los Angeles County Library	85
LACMA & NHM	4
Los Angeles County Office of Education	37
Los Angeles County - Other (offices)	24
Los Angeles County Parks & Recreation	117
Los Angeles County Public Health	14
Los Angeles County Public Works	230
Los Angeles County Sheriff's Department	31

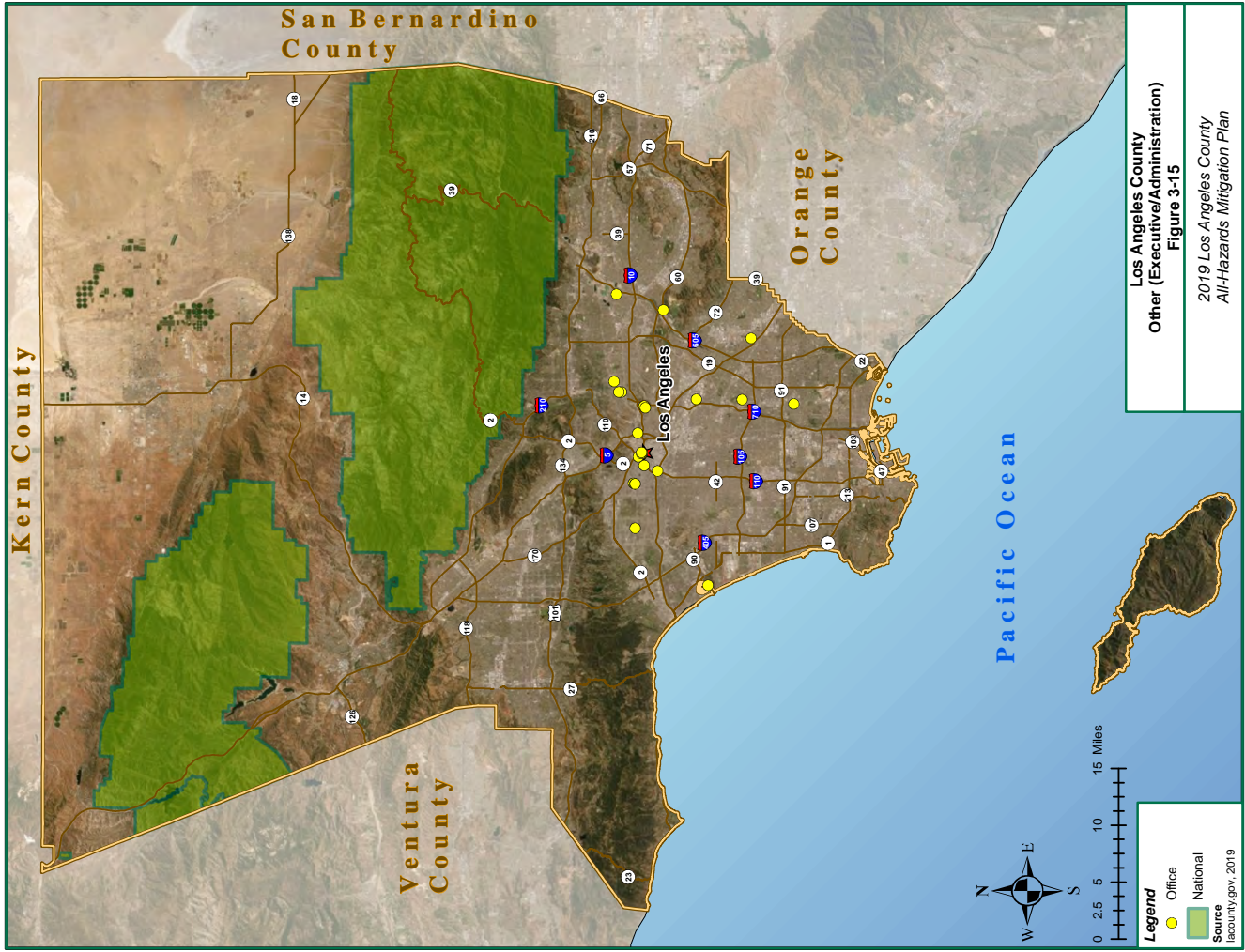
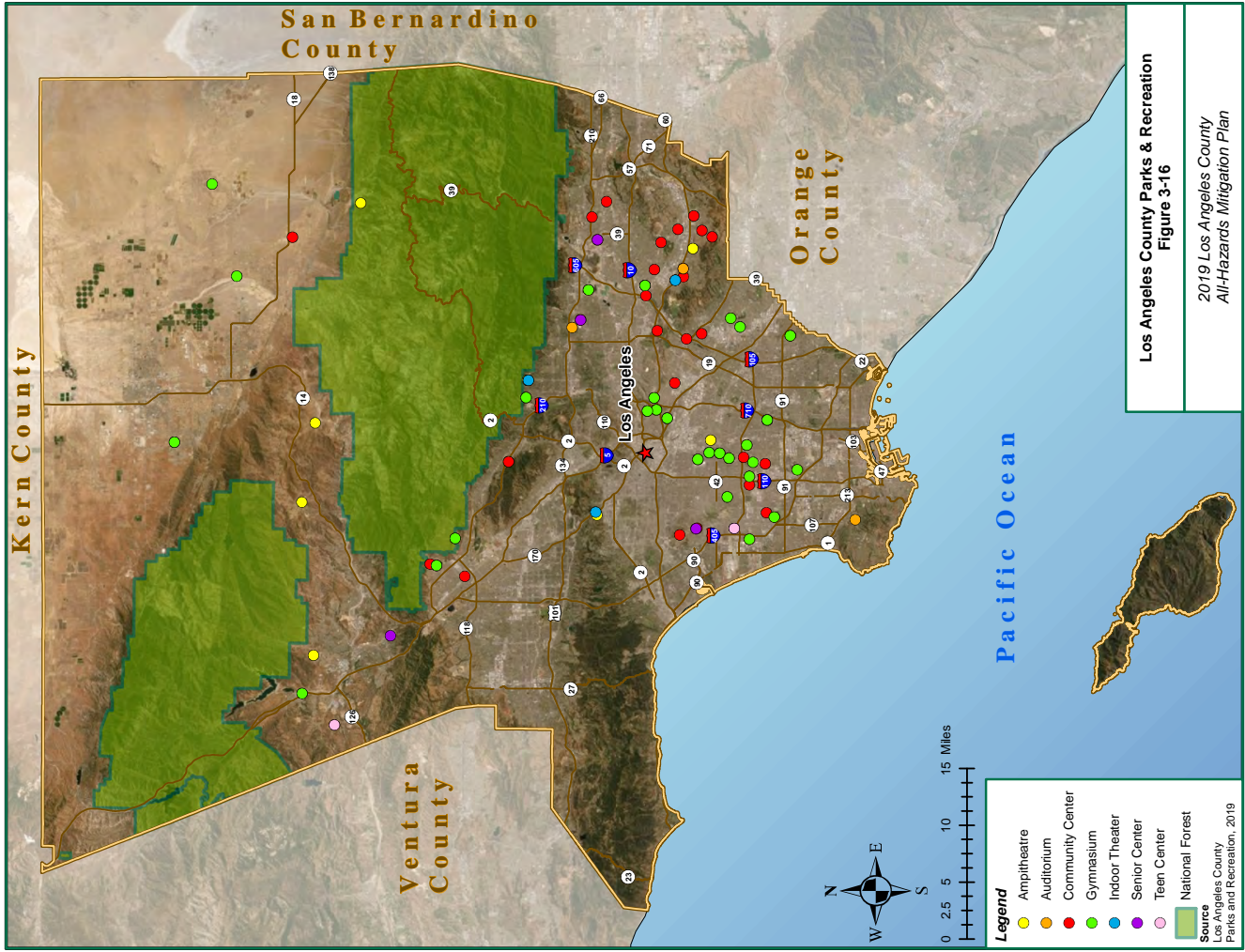
Note: The fire stations identified for this plan include those located within the 59 cities and all the unincorporated areas that the Los Angeles County Fire Department serves.

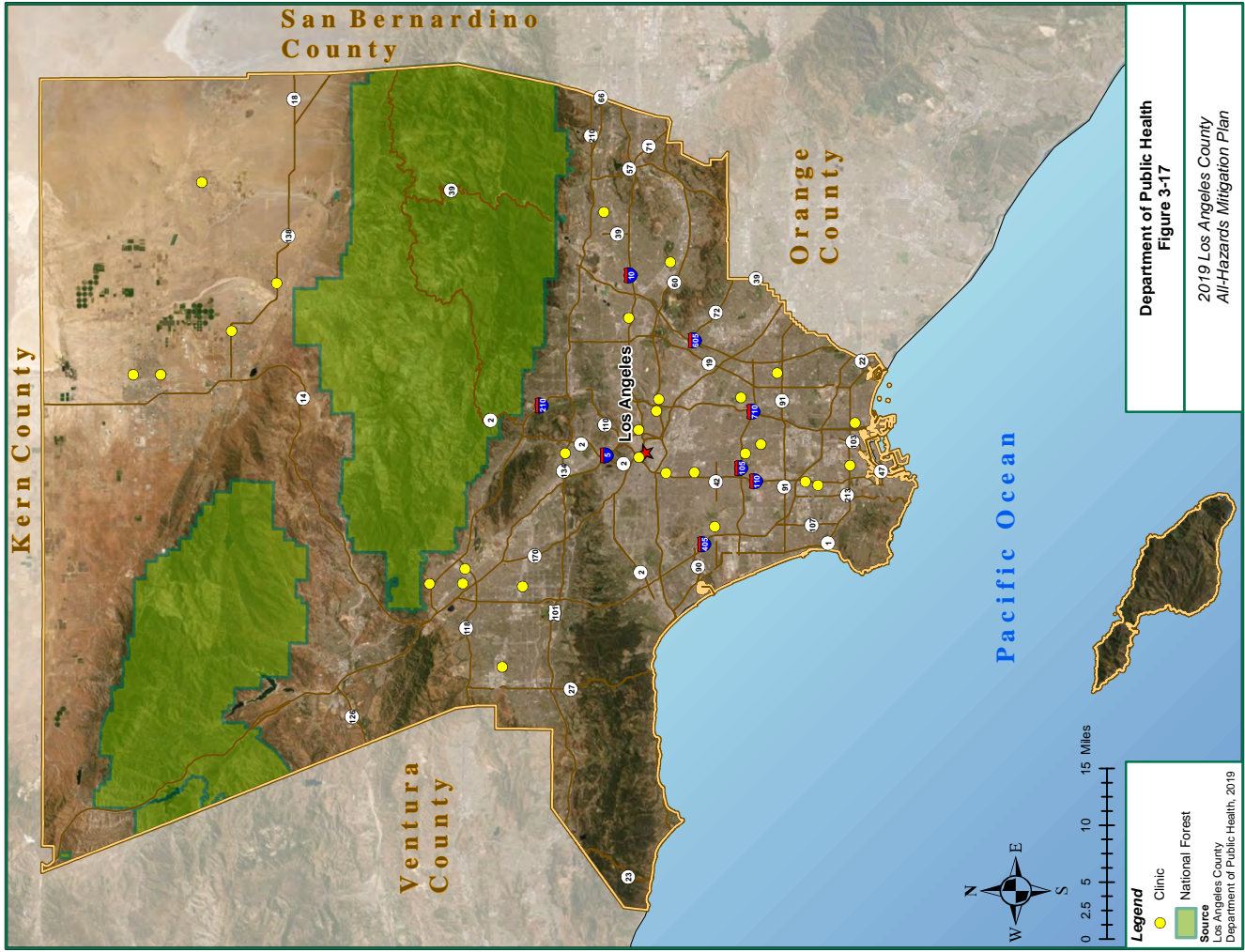
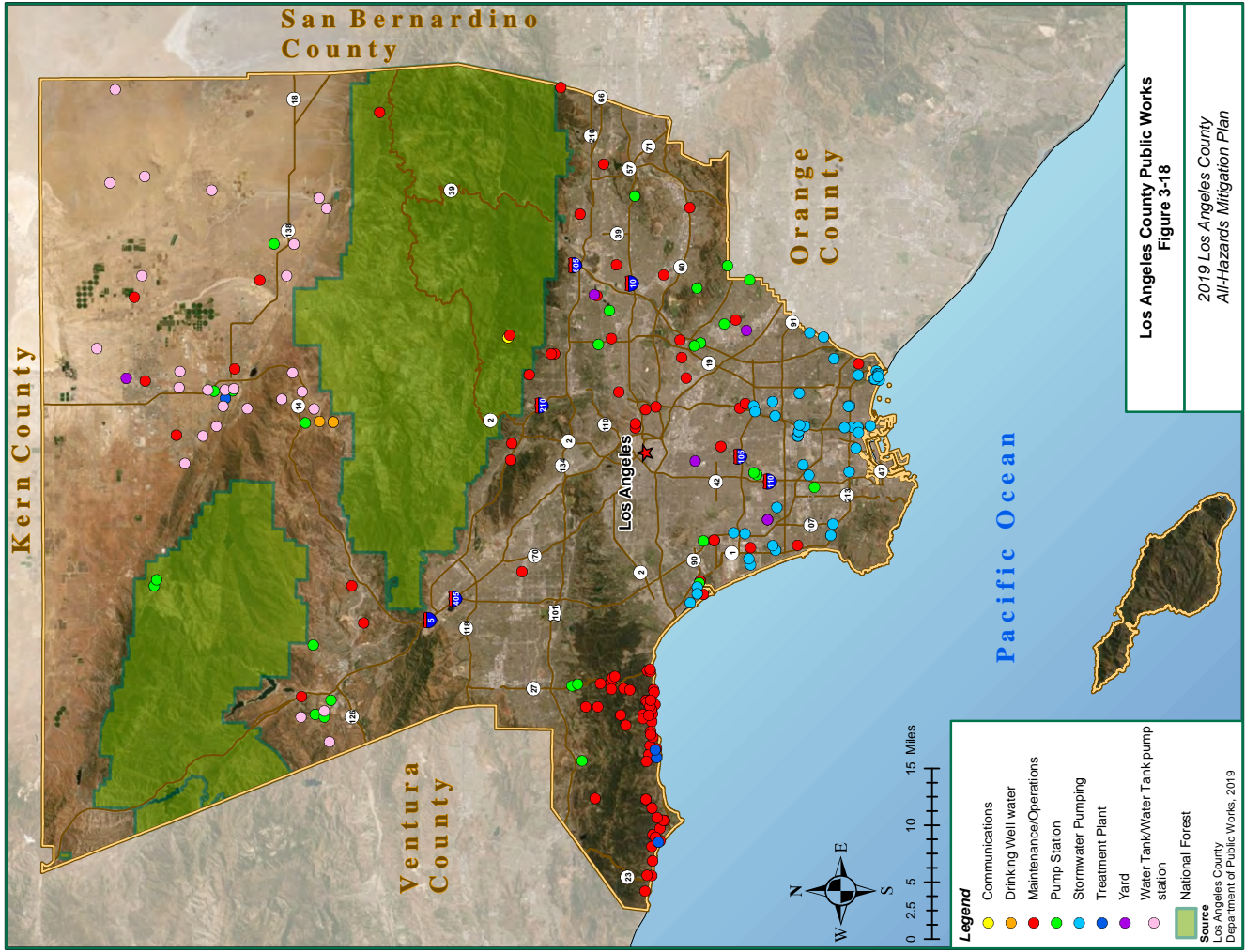












4 HAZARD IDENTIFICATION AND RISK ASSESSMENT

Section 4 – Hazard Identification and Risk Assessment addresses Element B of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans

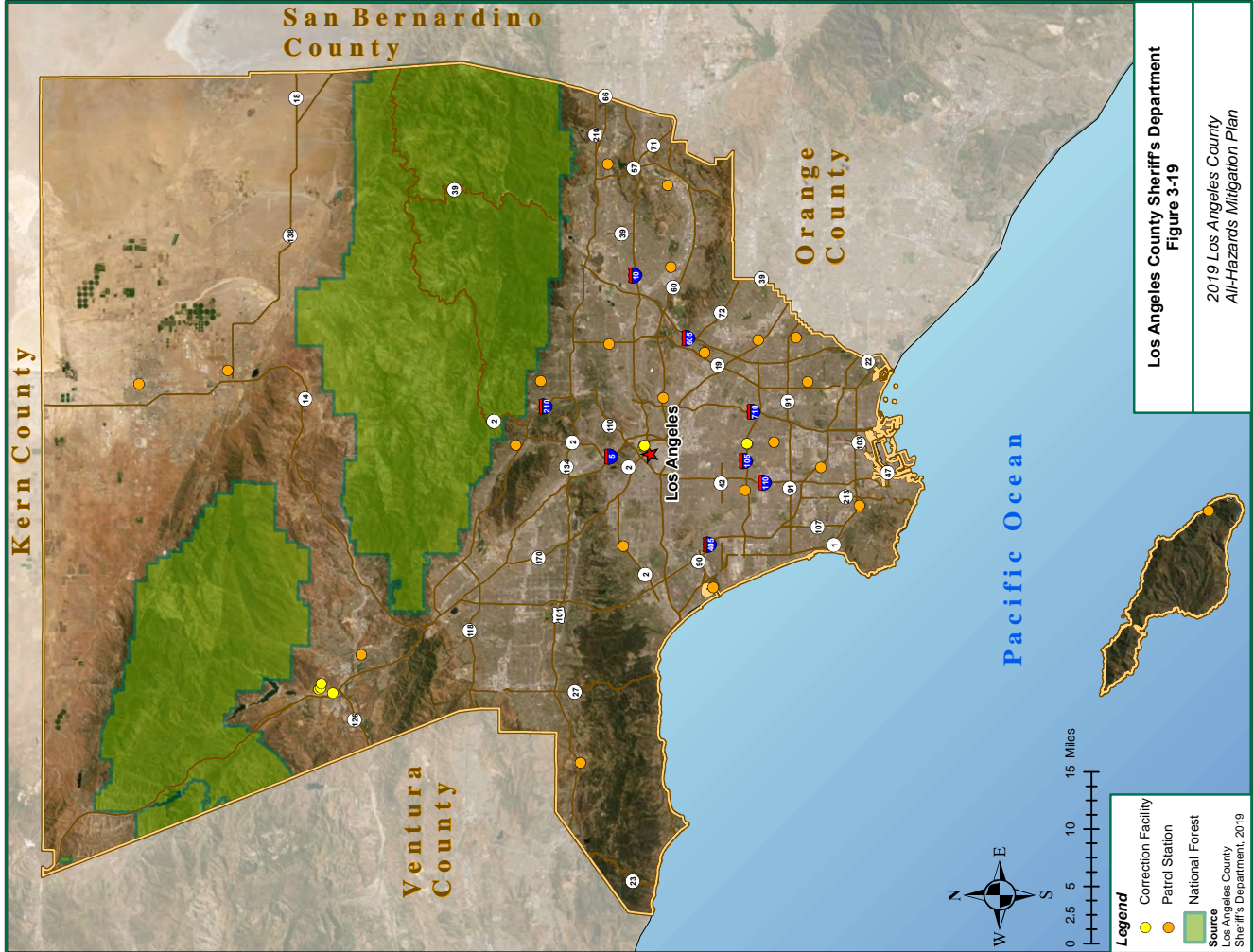
Element B: Hazard Identification and Risk Assessment

- B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement § 201.6(c)(2)(ii))
- B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement § 201.6(c)(2)(i))
- B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? (Requirement § 201.6(c)(2)(ii))
- B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement § 201.6(c)(2)(ii))

For the 2019 AHMP, the AHMP project manager and consultant revisited the hazards addressed in the 2014 AHMP. It was determined that the primary focus of the 2019 AHMP should be natural hazards and secondary hazards, as a result of a natural hazard. In addition, it was decided that climate change should be included in the plan, as increasing surface temperatures will likely result in more droughts and subsequently the risk of wildfires. Therefore, climate change, dam failure, drought, earthquake, flood, landslide, tsunami, and wildfire are profiled in the 2019 AHMP.

Hazard identification consists of describing the nature of the hazard, disaster history, location, extent/severity, and probability of future events. Hazard identification profiles have been developed for each of the eight hazards addressed in Section 4.1 through Section 4.8. Additionally, impact (i.e., risk assessment) tables have been created for each hazard. Quantitative impact tables were prepared using GIS analysis for climate change (sea level rise), dam failure, earthquake, flood, landslide, tsunami, and wildfire, while a qualitative impact table was prepared for drought. Impacts considered include: land area, vulnerable populations and critical facilities. Overall summary descriptions have been developed as well. NFIP insured structures are discussed in Table 4-23. Appendix C contains unincorporated area-specific and critical facility-specific impact tables.

According to the *Comprehensive Preparedness Guide (CPG) 201: Threat and Hazard Identification and Risk Assessment Guide—Second Edition* (CPG 201) drought, earthquake, flood, landslide, tsunami, and wildfire are classified natural hazards, while dam failure is classified as a technological hazard (but is often a secondary hazard of other natural hazards). CPG 201 does not classify climate change. As such, the hazards profiled for this AHMP are discussed in alphabetical order and not by CPG 201 classification. **The order does not signify level of risk.**



Los Angeles County Sheriff's Department
Figure 3-19

2019 Los Angeles County
All-Hazards Mitigation Plan

4.1 CLIMATE CHANGE

Table 4-1. Climate Change Identification Profile

Profile	Description
Nature	<p>Climate change is defined as the average statistics of weather, which includes temperature, precipitation, and seasonal patterns in a particular region. Climate change refers to the long-term and irrevocable shift in these weather-related patterns, either regionally or globally. The Earth and its natural ecosystem are very closely tied to the climate and any permanent climate change will lead to an imbalance in the existing ecosystem impacting the way people live, the food they grow, their health, the wildlife, the availability of water, and much more. Research indicates that much of this warming is due to human activities, primarily burning fossil fuels and clearing forests, that release carbon dioxide (CO₂) and other gases into the atmosphere, trapping in heat that would otherwise escape into space. Once in the atmosphere, these heat-trapping emissions remain there for many years (for example, CO₂ lasts about 100 years. If left unchecked, by the end of the century, CO₂ concentrations could reach levels three times higher than pre-industrial times.</p> <p>According to most climatologists, the planet is starting to experience shifts in climate patterns and increased frequency of extreme weather events at both the global and local levels. Over the next century, increasing atmospheric greenhouse gas concentrations are expected to cause a variety of changes to local climate conditions, including sea level rise and storm surge in coastal areas, reduced mountain snow pack, increased riverine flooding, and more frequent, higher temperatures (leading to extreme heat events and wildfires), particularly inland, decreasing air quality, and extended periods of drought.</p> <p>These effects of climate change are expected to negatively impact water and electricity demand and supplies in Los Angeles County. Decreasing air quality and extreme heat days will degrade public health, as well as and increase wildfire risk. And low-lying water front areas may flood or be underwater from sea level rise.</p>
Location	<p>According to the National Climate Assessment, the entire Pacific coastal region, including Los Angeles County, has been affected by climate change.</p>
History	<p>The history of the scientific discovery of climate change began in the early 19th century, when ice ages and other natural changes in paleoclimate were first suspected and the natural greenhouse effect first identified. In the late 19th century, scientists first argued that human emissions of greenhouse gases could change the climate. Many other theories of climate change were advanced, involving forces from volcanism to solar variation. In the 1960s, the warming effect of carbon dioxide gas became increasingly convincing, although some scientists also pointed out that human activities, in the form of atmospheric aerosols (e.g., "pollution"), could have cooling effects as well. During the 1970s, scientific opinion increasingly favored the warming viewpoint. By the 1990s, as a result of improving fidelity of computer models and observational work confirming the Milankovitch theory of the ice ages, a consensus position formed: greenhouse gases were deeply involved in most climate changes, and human emissions were bringing serious global warming.</p> <p>Since the 1990s, scientific research on climate change has included multiple disciplines and has expanded, significantly increasing our understanding of causal relations, links with historic data, and ability to numerically model climate change. The most recent work has been summarized in the Assessment Reports by the Intergovernmental Panel on Climate Change (IPCC). Climate change is a significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years. It may be a change in average weather conditions, or in the distribution of weather around the average conditions (i.e., more or fewer extreme weather events). Climate changes are caused by factors that include oceanic processes (such as oceanic circulation), biotic processes, variations in solar radiation received by Earth, plate</p>

Table 4-1. Climate Change Identification Profile

Profile	Description
	<p>tectonics and volcanic eruptions, and human-induced alterations of the natural world; these latter effects are currently causing global warming, and "climate change" is often used to describe human-specific impacts.</p> <p>Over the next century, weather patterns that are considered extreme today are expected to become the norm. The average summer temperature will rise, and in inland areas 100-plus degree Fahrenheit (°F) days will occur more frequently. A temperature change map (Figure 4-1) produced by the California Nevada Climate Applications Program predict that the average temperature in the region is expected to rise between 2.5 and 8°F. Drier conditions will also make wildfires more frequent and intense.</p> <p>The National Oceanic and Atmospheric Administration has produced a sea level rise view that shows the impacts of predicted sea level rise. As shown in Figure 4-2, a sea level rise of just 3 feet above mean higher high tide (approximate year 2050 – 2060) will result in coastal flooding of 2.25 square miles of Los Angeles County and 0.03 square miles of unincorporated areas of Los Angeles County, while a sea level rise of 6 feet above mean higher high tide (approximate year 2100) will result in coastal flooding of 6.13 square miles of Los Angeles County and 0.15 square miles of unincorporated areas of Los Angeles County.</p>
Extent / Severity	<p>The specific probability of the extent and frequency climate change induced impacts is uncertain and depends on various climate modeling assumptions. While there is some uncertainty about the rate of climate of change and the severity and frequency of extreme weather events, the IPCC, in its Fifth Assessment of Climate Change (2014), concluded that:</p> <p>...warming of the climate systems unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased...It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century.</p>
Recurrence Probability	

Table 4-2. Climate Change Impact on Land Area

Entity	3 Ft. Sea Level Rise		6 Ft. Sea Level Rise	
	# of Sq. Miles	% of Sq. Miles	# of Sq. Miles	% of Sq. Miles
Los Angeles County	2.25	0.05	6.13	0.13
Unincorporated Los Angeles County	0.03	0.00	0.15	0.00
Supervisory District 1	0.00	0.00	0.00	0.00
Supervisory District 2	0.03	0.02	0.07	0.04
Supervisory District 3	0.14	0.03	0.34	0.08
Supervisory District 4	1.98	0.45	5.58	1.27
Supervisory District 5	0.00	0.00	0.00	0.00

Table 4-3. Climate Change Impact on Vulnerable Populations – People Experiencing Homelessness

Entity	3 Ft. Sea Level Rise		6 Ft. Sea Level Rise	
	# of Homeless	% of Homeless	# of Homeless	% of Homeless
City of Los Angeles	51	0.15	126	0.38
Unincorporated Los Angeles County	0	0.00	2	0.04

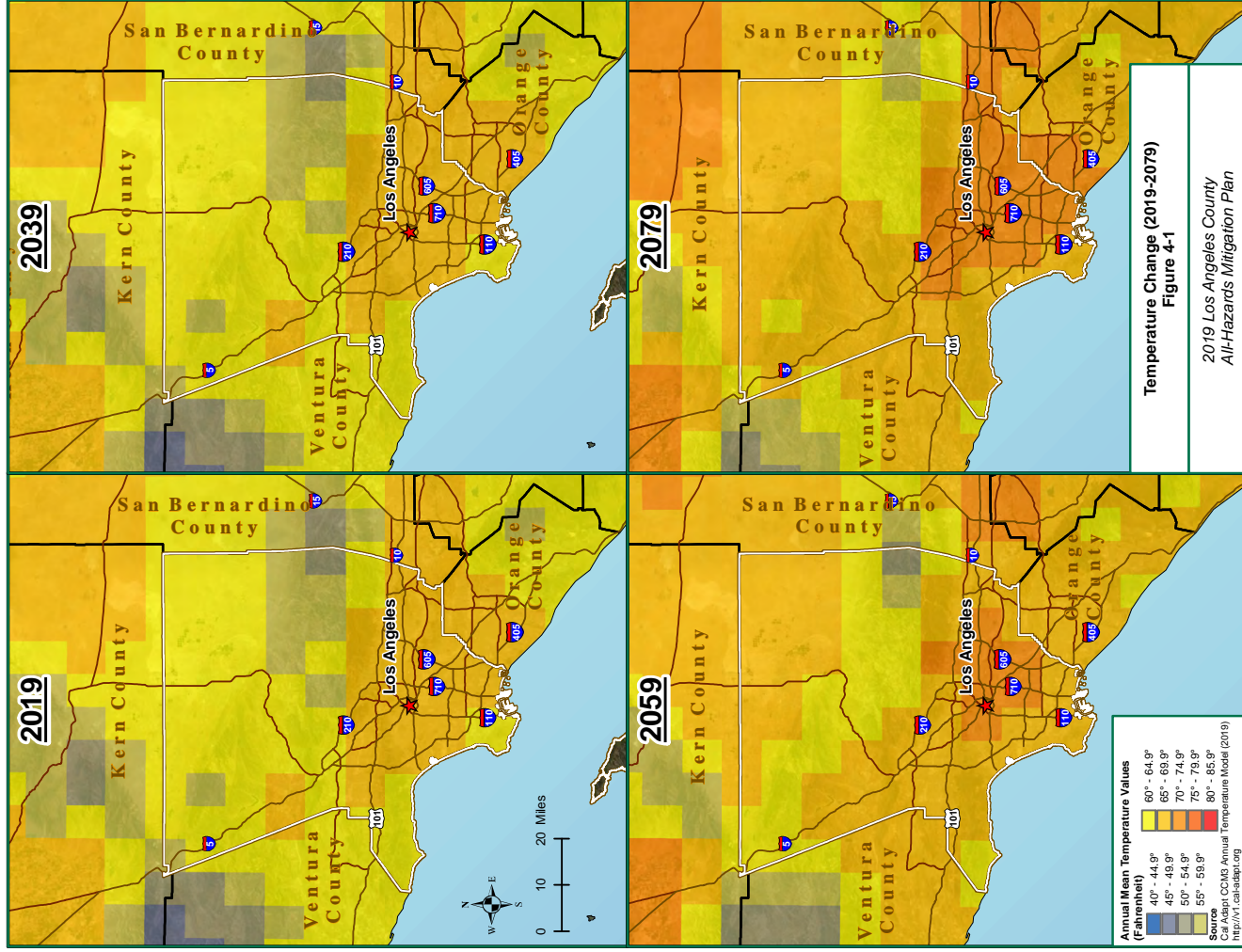
Table 4-4. Climate Change Impact on County Critical Facilities

Department/Agency	3 Ft. Sea Level Rise		6 Ft. Sea Level Rise	
	# of Facilities	% of Facilities	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control	0	0.00	0	0.00
Los Angeles County Fire Department	1	0.00	5	1.4
Los Angeles County Health Services	0	0.00	0	0.00
Los Angeles County Library	0	0.00	0	0.00
LACMA & NHM	0	0.00	0	0.00
Los Angeles County Office of Education	0	0.00	0	0.00
Los Angeles County - Other (offices)	0	0.00	0	0.00
Los Angeles County Parks & Recreation	0	0.00	0	0.00
Los Angeles County Public Health	0	0.00	0	0.00
Los Angeles County Public Works	3	1.30	6	2.61
Los Angeles County Sheriff's Department	1	3.23	0	0.00

LACMA = Los Angeles County Museum of Art
 NHM = Natural History Museum

Table 4-5. Overall Summary of Vulnerability to Climate Change

Climate Change	
Summary	<p>Climate change will affect every person and every area of Los Angeles County. As noted above, the number of extreme heat days will rise, and inland county areas will experience days with temperatures in excess of 100°F more frequently. Extreme heat can trigger a variety of heat stress conditions, such as heat stroke. Higher temperatures can also contribute to the build-up of harmful pollutants and cause respiratory issues. Drier, hotter conditions will also make wildfires more frequent and intense, particularly in the High and Very High Fire Hazard Severity Zones (FHSZ). Wildfires can: burn homes, businesses, and critical facilities; interrupt transportation and utilities; and cause death to people and animals.</p> <p>In addition, mega storms that are linked to climate change will cause severe flooding in cities and form lakes in the Central Valley and Mojave Desert. Along the coast, deadly and destructive storm surges will push farther inland than they once did, which means more frequent nuisance flooding.</p> <p>Los Angeles County is addressing climate change through the implementation of the 2015 Community Climate Action Plan. The plan describes how the County will address the impacts of climate change by reducing greenhouse gas emissions from community activities in the unincorporated areas of Los Angeles County by at least 11% below 2010 levels by 2020. Additionally, in April 2019 the mayor of Los Angeles released the city's Green New Deal, which "sets aggressive goals for the city's sustainable future, tackles the climate emergency with accelerated targets... and sets L.A. on course to be carbon neutral by 2050."</p>



4.2 DAM FAILURE

Table 4-6. Dam Failure Identification Profile

Profile	Description
<p>Nature</p>	<p>Dam failure is the structural collapse of a dam that releases the water stored in the reservoir behind the dam. A dam failure is usually the result of the age of the structure, inadequate spillway capacity used in construction, or structural damage caused by an earthquake or flood. When a dam fails, a large quantity of water is suddenly released with a great potential to cause human casualties, economic loss, and environmental damage. This type of disaster is especially dangerous because it can occur suddenly, providing little warning and evacuation time for the people living downstream. The flows resulting from dam failure generally are much larger than the capacity of the downstream channels and therefore lead to extensive flooding. Flood damage occurs as a result of the momentum of the flood caused by the sediment-laden water flooding over the channel banks and impact debris carried by the flow.</p> <p>According to the California Department of Water Resource's Division of Safety of Dams (DSOD), there are 90 dams under State jurisdiction in Los Angeles County. A dam breach inundation map shows flooding that could result from a hypothetical failure of a dam or its critical appurtenant structure. In 2017, the California Legislature passed a law requiring all State jurisdictional dam owners, except for owners of low-hazard dams, to develop inundation maps approved by DSOD and emergency action plans approved by Cal OES.</p> <p>At the time of the drafting of this plan in early July 2019, 12 State jurisdictional dams in Los Angeles County had approved dam breach inundation maps, including:</p> <ul style="list-style-type: none"> • Castaic Lake Dam: an earthen dam with a storage capacity of 323,700 acre-feet in Warm Springs Mountain • Pyramid Dam: an earthen and rock dam with a storage capacity of 178,700 acre-feet in Black Mountain • Chevy Chase 1290: an earthen dam with a storage capacity 17 acre-feet of in Pasadena • Elysian Dam: and earthen dam with a storage capacity of 167 acre-feet in Los Angeles • Lower San Fernando Dam: hydraulic fill dam with a storage capacity of 9,843 acre-feet in San Fernando • Eagle Rock Dam: an earthen dam with a storage capacity of 254 acre-feet in Pasadena • Santa Ynez Canyon Dam: an earthen dam with a storage capacity 356 acre-feet in Topanga • Devils Gate Dam: a gravity dam with a storage capacity of 2,600 acre-feet Pasadena • Palos Verdes Reservoir: an earthen dam with a storage capacity of 1,100 acre-feet in Torrance • Littlerock – Palmdale Dam: a roller-compacted concrete dam with a storage capacity of 4,600 acre-feet in Pacifico Mountain • Harold Reservoir: an earthen dam with a storage capacity of 3,870 acre-feet in Palmdale • Westlake Reservoir: an earthen dam with a storage capacity of 9,200 acre-feet in Westlake Village
<p>Location</p>	

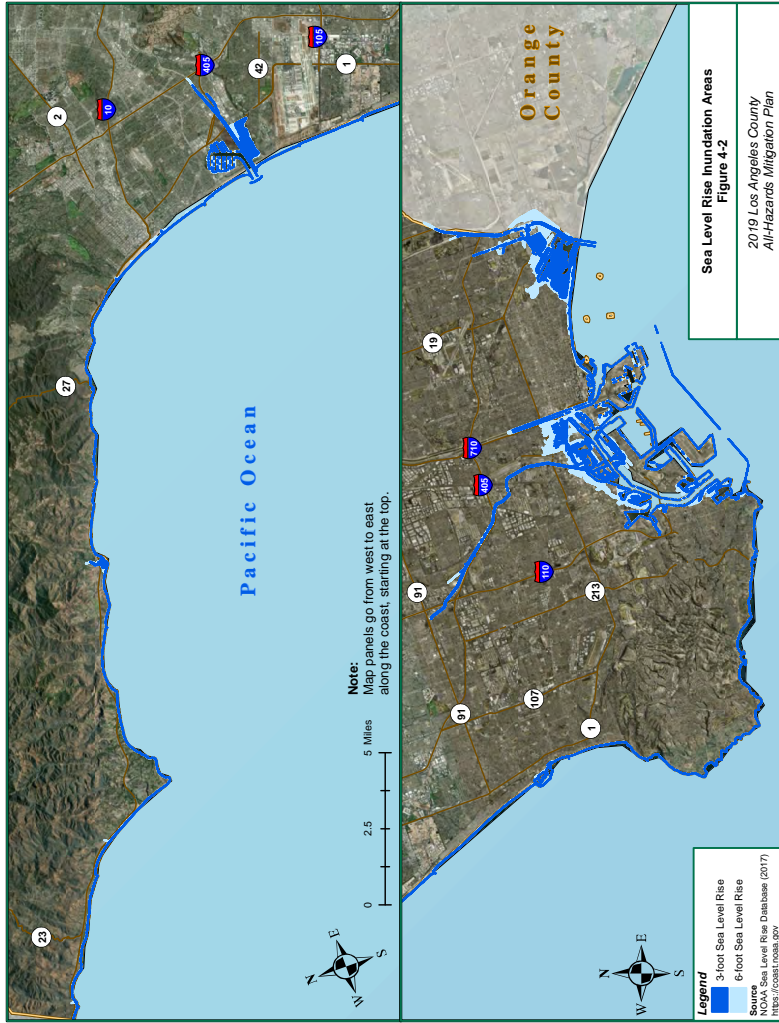


Table 4-6. Dam Failure Identification Profile

Profile	Description
History	Los Angeles County was the scene of the worst dam failure in United States history. The St. Francis Dam was built in San Francisco Canyon, approximately 40 miles north west of downtown Los Angeles, in 1924. On the night of March 12-13, 1928, the dam catastrophically failed, releasing approximately 12.4 billion gallons of water. At least 411 people were killed. Subsequent investigations determined that the dam failed as a result of defective foundations that had been built upon an unstable rock formation. As a result of the disaster, the State of California increased dam safety legislation and oversight, and created a state Board of Registration for civil engineers to regulate the industry.
Extent / Severity	The Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures (FEMA P-946, July 2013) defines downstream hazards for dam incidents. Downstream hazards are based "solely on the potential downstream impacts to life and property should the dam fail when operating with a full reservoir." FEMA has developed three categories in increasing severity for downstream hazards: Low, Significant, and High. DSOD adds a fourth category of Extremely High. In Los Angeles County there are 40 dams that are classified as High, with the potential impact expected to cause loss of at least one human life, and 30 dams classified as Extremely High, with the potential impact expected to cause considerable loss of human life or result in an inundation area with a population of 1,000 or more.
Recurrence Probability	As noted in Figure 4-3 , nine Extremely High hazard dams and three High hazard dams in the county have approved dam breach inundation maps for a total of 45,70 square miles (0.96 %) in Los Angeles County, and a total of 13,37 square miles (0.44 %) in the unincorporated areas of Los Angeles County.
	Dams fail for a variety of reasons, including Sub-standard construction materials/techniques, spillway design error, geological instability, poor maintenance, and earthquakes, and therefore recurrence probabilities are unknown. State jurisdiction dams are regulated by the DSOD and each dam undergoes inspection on an annual basis to ensure it is safe, performing as intended, and is not developing issues. However, in 2017, the United States Army Corps of Engineers (USACE) discovered that the Whittier Narrows Dam was structurally unsafe and that an intense storm could prematurely open the dam's massive spillway and flood the area below from Pico Rivera to Long Beach. The USACE has reclassified the dam as the agency's highest dam priority nationally because of the risk of "very significant loss of life and economic impacts." Construction on the dam is expected to start in 2021 and conclude by 2025.

Table 4-7. Dam Failure Impact on Land Area

Entity	# of Sq. Miles	Dam Breach Inundation % of Sq. Miles
Los Angeles County	45,70	0.96
Unincorporated Los Angeles County	13,37	0.44
Supervisory District 1	1,40	0.57
Supervisory District 2	0,00	0,00
Supervisory District 3	24,84	5,76
Supervisory District 4	0,67	0,15
Supervisory District 5	18,00	0,64

Table 4-8. Dam Failure Impact on Vulnerable Populations – People Experiencing Homelessness

Entity	# of Homeless	Dam Breach Inundation % of Homeless
City of Los Angeles	1,193	3,62
Unincorporated Los Angeles County	13	0,22

Table 4-9. Dam Failure Impact on County Critical Facilities

Department / Agency	# of Facilities	Dam Breach Inundation % of Facilities
Los Angeles County Animal Care & Control	1	14,29
Los Angeles County Fire Department	3	0,89
Los Angeles County Health Services	2	6,90
Los Angeles County Library	1	1,18
LACMA & NHM	0	0,00
Los Angeles County Office of Education	2	5,41
Los Angeles County - Other (offices)	0	0,00
Los Angeles County Parks & Recreation	2	1,71
Los Angeles County Public Health	0	0,00
Los Angeles County Public Works	1	0,43
Los Angeles County Sheriff's Department	3	9,68

Table 4-10. Overall Summary of Vulnerability to Dam Failure

	<p style="text-align: center;">Dam Failure</p> <p>There are 90 dams in Los Angeles County under State jurisdiction. Seventy dams are classified as High and Extremely High hazard and failure of these types of dams will cause loss of human life and/or result in an inundation area with a population of 1,000 or more.</p> <p>As of June 2017, all dams except those classified as Low hazard are required by the DSDOD to have an Emergency Action Plan (EAP). An EAP identifies incidents that can lead to potential emergency conditions at a dam, identifies the areas that could be affected by the loss of a reservoir and specifies pre-planned actions to be followed to minimize property damage, potential loss of infrastructure and water resources, and potential loss of life due to failure or misoperation of a dam. EAPs also require dam breach inundation maps to be prepared.</p> <p>While the State regulates dams to prevent failure, safeguard life, and protect property, some researchers doubt that the “overall safety of aging federal flood control systems that were not designed with climate change in mind.” They argue that as California experiences more intense storms, the aging dams in the area could fail and/or prematurely open and flood homes, schools, businesses, and roads.</p> <p>In 2016, Climate-Safe Infrastructure Bill (Assembly Bill [AB] 2800) became law and “established the Climate-Safe Infrastructure Working Group to develop recommendations to the California legislature on how to build and design our infrastructure to be safer for Californians in the face of growing climate extremes.” The Working Group’s 2018 report identified nearly 700 High hazard dams in California needing repairs and upgrades.</p>
<p>Summary</p>	

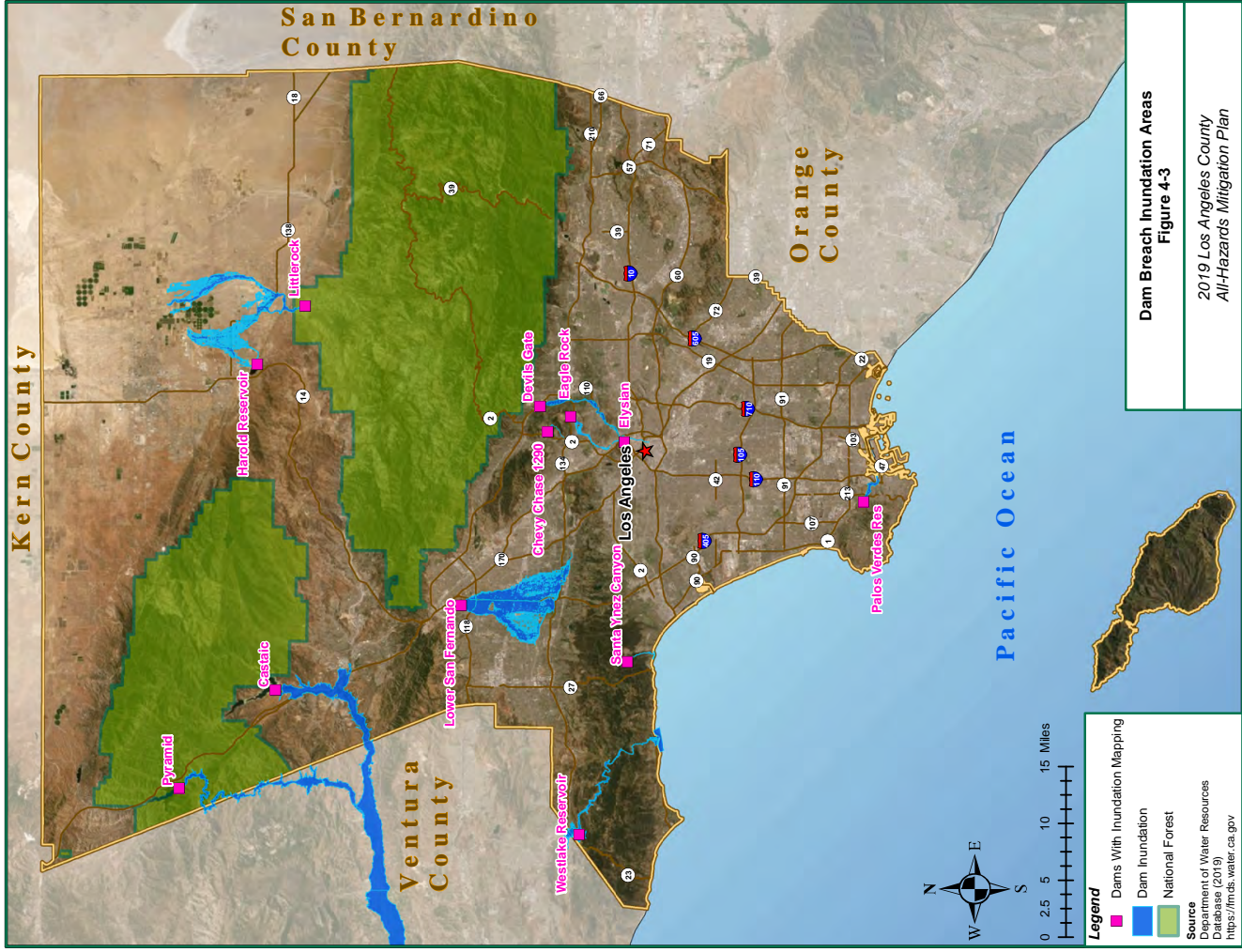


Table 4-11. Drought Identification Profile

Profile	Description
Nature	<p>Drought is a normal, recurrent feature of virtually all climatic zones, including areas of both high and low rainfall, although characteristics will vary significantly from one region to another. Drought differs from normal aridity, which is a permanent feature of the climate in areas of low rainfall. Drought is the result of a natural decline in the expected precipitation over an extended period of time, typically one or more seasons in length. Other climatic characteristics, such as high temperature, high wind, and low relative humidity, impact the severity of drought conditions. Four common definitions for drought are provided as follows:</p> <ul style="list-style-type: none"> • Meteorological drought is defined solely on the degree of dryness, expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales. • Hydrological drought is related to the effects of precipitation shortfalls on stream flows and reservoir, lake, and ground water levels. • Agricultural drought is defined principally in terms of soil moisture deficiencies relative to water demands of plant life, usually crops. • Socioeconomic drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of weather-related supply shortfall. It may also be referred to as a water management drought. <p>A drought's severity depends on numerous factors, including duration, intensity, and geographic extent, as well as regional water supply demands by humans and vegetation. Due to its multi-dimensional nature, drought is difficult to define in exact terms and poses difficulties in terms of comprehensive risk assessments.</p> <p>Drought differs from other natural hazards in three ways. First, the onset and end of a drought are difficult to determine due to the slow accumulation and lingering of effects of an event after its apparent end. Second, the lack of an exact and universally accepted definition adds to the confusion of its existence and severity. Third, in contrast with other natural hazards, the impact of drought is less obvious and may be spread over a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments.</p> <p>The occurrence of drought is regional in nature and scope, which holds true for Los Angeles County. As such, when drought occurs it typically affects the entire county.</p> <p>Drought is a cyclic part of the climate of California, occurring in both summer and winter, with an average recurrence interval between 3 and 10 years. Droughts in California over the past 100 years are listed as follows. The most recent drought from 2011 to 2015 was the driest 4-year period on record in California since recordkeeping began in 1895.</p> <ul style="list-style-type: none"> • 1917-1921, Statewide except for central Sierra Nevada and north coast • 1922-1926, Statewide except for central Sierra Nevada • 1928-1937, Statewide • 1943-1951, Statewide • 1959-1962, Statewide • 1976-1977, Statewide, except for southwestern deserts • 1987-1992, Statewide • 2007-2009, Statewide, particularly the central coast • 2011-2015, Statewide
Location	
History	

Table 4-11. Drought Identification Profile

Profile	Description
Extent / Severity	The National Drought Mitigation Center produces drought monitor maps for the United States. It classifies droughts into five categories: D0 is the least severe, with abnormally dry conditions; and D4 is the most severe, with exceptional drought conditions. California, including Los Angeles County, was in some form of drought for 376 consecutive weeks from December 20, 2011 until March 14, 2019. As of August 13, 2019, Los Angeles County remains free of drought.
Recurrence Probability	Researchers for California's Fourth Climate Change Assessment have noted that California has a "highly variable climate" with wet or dry periods that can span years and that are "heavily affected by extreme precipitation events." Furthermore, climate scientists also suggest the possibility of longer and more destructive droughts with climate change. As such, California is likely to experience long-term droughts at least every decade.

Table 4-12. Drought Impact

Drought	
Summary	Severe droughts can impact the region's agriculture, forests, hydropower, groundwater supply, recreation, aquatic ecosystems, as well as isolated communities that have limited water supply.

Table 4-13. Overall Summary of Vulnerability to Drought

Drought	
Summary	Climate scientists predict that Los Angeles County and the rest of southern California will get drier and northern California will get hotter. The resulting loss of snowpack in the Sierra Nevada will mean less water for all Californians – farmers, residents, utilities, and even hatchery fish. However, while drought cannot be controlled, according to the USGS, drought can be managed in two ways: through drought planning and in helping communities make the best day-to-day management decisions while the drought is taking place. During the drafting of this plan update, the Governor of California signed an executive order directing specific State agencies to develop a Water Resilience Portfolio to "ensure safe and dependable water supplies, flood protection and healthy waterways for the state's communities, economy and environment."

4.3 EARTHQUAKE

Table 4-14. Earthquake Identification Profile

Profile	Description
<p>Nature</p>	<p>An earthquake is a sudden motion or trembling caused by a release of strain accumulated in or along the edge of Earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. Earthquakes usually occur without warning and can cause massive damage and extensive casualties in a few seconds. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Ground motion is the vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter. Soft soils can amplify ground motions.</p> <p>In addition to ground motion, several secondary natural hazards can occur from earthquakes, such as the following:</p> <ul style="list-style-type: none"> • Surface Faulting: Surface faulting is the differential movement of two sides of a fault at the Earth's surface. Displacement along faults, both in terms of length and width, varies but can be significant (e.g., up to 20 feet), as can the length of the surface rupture (e.g., up to 200 miles). Surface faulting can cause severe damage to linear structures, including railways, high ways, pipelines, tunnels and dams. • Liquefaction: Liquefaction occurs when seismic waves pass through saturated granular soil, distorting its granular structure, and causing some of the empty spaces between granules to collapse. Liquefaction causes lateral spreads (i.e., horizontal movements of commonly 10 to 15 feet, but up to 100 feet), flow failures (i.e., massive flows of soil, typically hundreds of feet, but up to 12 miles), and loss of bearing strength (i.e., soil deformations causing structures to settle or tip). Liquefaction can cause severe damage to property. • Landslides/Debris Flows: Landslides/debris flows occur as a result of horizontal seismic inertia forces induced in the slopes by the ground shaking. The most common earthquake-induced landslides include shallow, disrupted landslides such as rock falls, rock slides, and soil slides. Debris flows are created when surface soil on steep slopes becomes totally saturated with water. Once the soil liquefies, it loses the ability to hold together and can flow downhill at very high speeds, taking vegetation and/or structures with it. Slide risks increase after an earthquake during a wet winter. <p>The two most common measures of earthquake intensity used in the United States are the Modified Mercalli Intensity Scale, which measures felt intensity, and peak ground acceleration (PGA), which measures instrumental intensity by quantifying how hard the earth shakes in a given location. Magnitude (M) is measured by the amplitude of the earthquake waves recorded on a seismograph using a logarithmic scale.</p>

Table 4-14. Earthquake Identification Profile

Profile	Description
<p>Location</p>	<p>As in most of southern and coastal California, the potential for earthquake damage exists throughout Los Angeles County because of the number of active faults in and near the county. These faults are shown on the California Geological Survey (CGS) Fault Activity Map of California. Descriptions of the active faults are provided below. The locations of the active and potentially active faults are shown on Figure 4-4. Some of the more significant faults are described below:</p> <ul style="list-style-type: none"> • Malibu Coast fault system: The Malibu Coast fault system includes the Malibu Coast, Santa Monica, and Hollywood faults. The system begins in the Hollywood area, extends along the southern base of the Santa Monica Mountains, and passes offshore a few miles west of Point Dume. The 1973 Point Mugu earthquake is believed to have originated on this fault system. • Oak Ridge fault system: The Oak Ridge fault system is a steep (65 degrees) southerly dipping reverse fault that extends from the Santa Susana Mountains westward along the southerly side of the Santa Clara River Valley and into the Oxnard Plain. The system is more than 50 miles long on the mainland and may extend an equal or greater distance offshore. Several recorded earthquake epicenters on land and offshore may have been associated with the Oak Ridge fault system. Portions of the system are zoned by the state as active. • Pine Mountain thrust fault and Big Pine fault: These two large faults occur in the mountainous portion of Ventura County north of the Santa Ynez fault; the faults are located 9 and 16 miles north of the city of Ojai, respectively. The Pine Mountain thrust fault is reported to have ruptured the ground surface for 30 miles along its length during the northern Ventura County earthquakes of November 1852. • San Andreas fault: San Andreas is the longest and most significant fault in California. Because of clearly established historical earthquake activity, this fault has been designated as active by the State of California. The last major earthquake on this fault near Ventura County was the Fort Tejon earthquake of 1857, which was estimated at magnitude (M) 8.0 and would have caused considerable damage if there had been structures in the southern part of the county. There is a 5% chance that an M 6.7 quake or larger will occur on this fault in the next 30 years. • San Cayetano-Red Mountain-Santa Susana fault system: This fault system consists of a major series of north-dipping reverse faults that extend over 150 miles from Santa Barbara County into Los Angeles County. In this system, the San Cayetano fault is the greatest hazard to Ventura County; it is a major, north-dipping reverse fault that extends for 25 miles along the northern portion of the Ventura Basin. The San Fernando earthquake of 1971, described in the previous section, was caused by activity along this fault. • Simi-Santa Rosa fault system: This fault system extends from the Santa Susana Mountains westward along the northern margin of the Simi and Tierra Rejada valleys and along the southern slope and crest of the Las Posas Hills to their westerly termination. • Ventura-Pitas Point fault: The western half of this fault is known as the Pitas Point fault, and the eastern half is known as the Ventura fault. The Pitas Point fault extends offshore into the Pacific Ocean and is roughly 14 miles long. The Ventura fault extends into the communities of Ventura and Sea Cliff and runs roughly parallel to portions of U.S. 101 and State Route 126. The fault is roughly 12 miles long and is a left-reverse fault.

Table 4-14. Earthquake Identification Profile

Profile	Description
	<p>As shown in Figure 4-5, according to the USGS, 163 earthquakes M 5.0+ have been recorded in southern California since 1769. Four of these earthquakes have been larger than M 7.0 including:</p> <ul style="list-style-type: none"> San Juan Capistrano Earthquake (M 7.5), December 8, 1812 Kern County Earthquake (M 7.5), July 21, 1952 West Ventura Earthquake (M 7.1), December 21, 1812 Ridgecrest, (M 7.1), July 6, 2019 Los Angeles County, significant earthquakes over the past 50 years include: La Habra (M 5.1), March 28, 2014, resulting in a few injuries and \$10 million dollars in damages Chino Hills (M 5.5), July 29, 2008, resulting in 8 injuries and limited damages Northridge (M 6.7), January 17, 1994, resulting in 57 deaths, 8,700 injuries and up to \$40 billion dollars in damages. Sierra Madre (M 5.6), June 28, 199, resulting in 1 death, 100+ injuries and up to \$40 million dollars in damages. Upland (M 5.7), February 28, 1990, resulting in 30 injuries and \$12.7 million dollars in damages Whittier (M 5.9), October 1, 1987, resulting in 8 deaths, 200 injuries and \$358 million in damages San Fernando (M 6.6), February 9, 1971, resulting in 58 – 65 deaths, 200 – 2,000 injuries and up to \$553 million in damages
History	

The strength of an earthquake's ground movement can be measured by PGA. PGA measures the rate in change of motion relative to the established rate of acceleration due to gravity ($g = 980$ centimeters per second, per second). PGA is used to project the risk of damage from future earthquakes by showing earthquake ground motions that have a specified probability (e.g., 10%, 5%, or 2%) of being exceeded in 50 years. The ground motion values are used for reference in construction design for earthquake resistance and can also be used to assess relative hazard between sites when making economic and safety decisions.

In 2008, CCS developed an updated map of earthquake shaking potential for California. The map shows the relative intensity of ground shaking and damage in California from anticipated future earthquakes. Regions near major, active faults are shown in red and pink and experience stronger earthquake shaking more frequently. Regions that are distant from known, active faults are shown in orange and yellow and experience lower levels of shaking less frequently. **Figure 4-6** indicates the level of low-frequency shaking potential in Los Angeles County (in which local soil conditions have greater effect on low frequency). In Los Angeles County there are 3,041.91 (63.90%) square miles with violent low frequency shaking potential; and 711.01 square miles (14.93%) with extreme low frequency shaking potential. In unincorporated areas of Los Angeles County, there are 1,783.57 (58.65%) square miles with violent low frequency shaking potential; and 527.60 square miles (17.35%) with extreme low frequency shaking potential.

Table 4-14. Earthquake Identification Profile

Profile	Description
	<p>Ongoing field and laboratory studies suggest the likely maximum magnitudes and recurrence intervals for the major local faults are as follows:</p> <ul style="list-style-type: none"> Chatsworth fault: M 6.0-6.8, unknown recurrence interval Hollywood fault: M 5.8-6.5, recurrence interval approximately every 1600 years Malibu Coast fault: M 6.7, recurrence interval 2,908 years Newport-Inglewood fault: M 6.0-7.4, unknown recurrence interval Oak Ridge fault: M 6.9, recurrence interval 299 years Palos Verdes fault: M 6.0-7.0 or greater, unknown recurrence interval Red Hill fault (aka Erivanda Avenue fault): M 6.0-7.0, unknown recurrence interval Raymond fault: M 6.0-7.0, recurrence interval approximately 4500 years San Andreas fault: M 6.8-8.0, recurrence interval of 140 years on Mojave segment to 300 years San Cayetano fault: M 6.5-7.3, unknown recurrence interval San Fernando fault: M 6.0-6.8, recurrence interval approximately every 200 years San Jose fault: M 6.0-6.5, unknown recurrence interval Santa Susana fault system: M 6.6, recurrence interval 138 years Santa Monica fault: M 6.0-7.0, unknown recurrence interval Sierra Madre fault: M 6.0-7.0, recurrence interval several thousand years Simi-Santa Rosa fault: M 6.7, recurrence interval 933 years Vertugro fault: M 6.0-6.8, unknown recurrence interval Whittier fault: M 6.0-7.2, unknown recurrence interval
Recurrence Probability	

Table 4-15. Seismic Hazard Impact on Land Area

Entity	Violent EQ Shaking		Extreme EQ Shaking	
	# of Sq. Miles	% of Sq. Miles	# of Sq. Miles	% of Sq. Miles
Los Angeles County	3,041.91	63.90	711.01	14.93
Unincorporated Los Angeles County	1,783.57	58.65	527.60	17.35
Supervisory District 1	244.34	99.25	0.00	0.00
Supervisory District 2	161.74	99.94	0.00	0.00
Supervisory District 3	379.41	87.99	41.73	9.68
Supervisory District 4	305.40	69.42	0.00	0.00
Supervisory District 5	1,950.78	69.50	669.26	23.84

EQ = earthquake

Table 4-16. Seismic Hazard Impact on Vulnerable Populations – People Experiencing Homelessness

Entity	Violent EQ Shaking		Extreme EQ Shaking	
	# of Homeless	% of Homeless	# of Homeless	% of Homeless
City of Los Angeles	31,087	94.25	1,827	5.55
Unincorporated Los Angeles County	5,328	90.60	361	6.14

EQ = earthquake

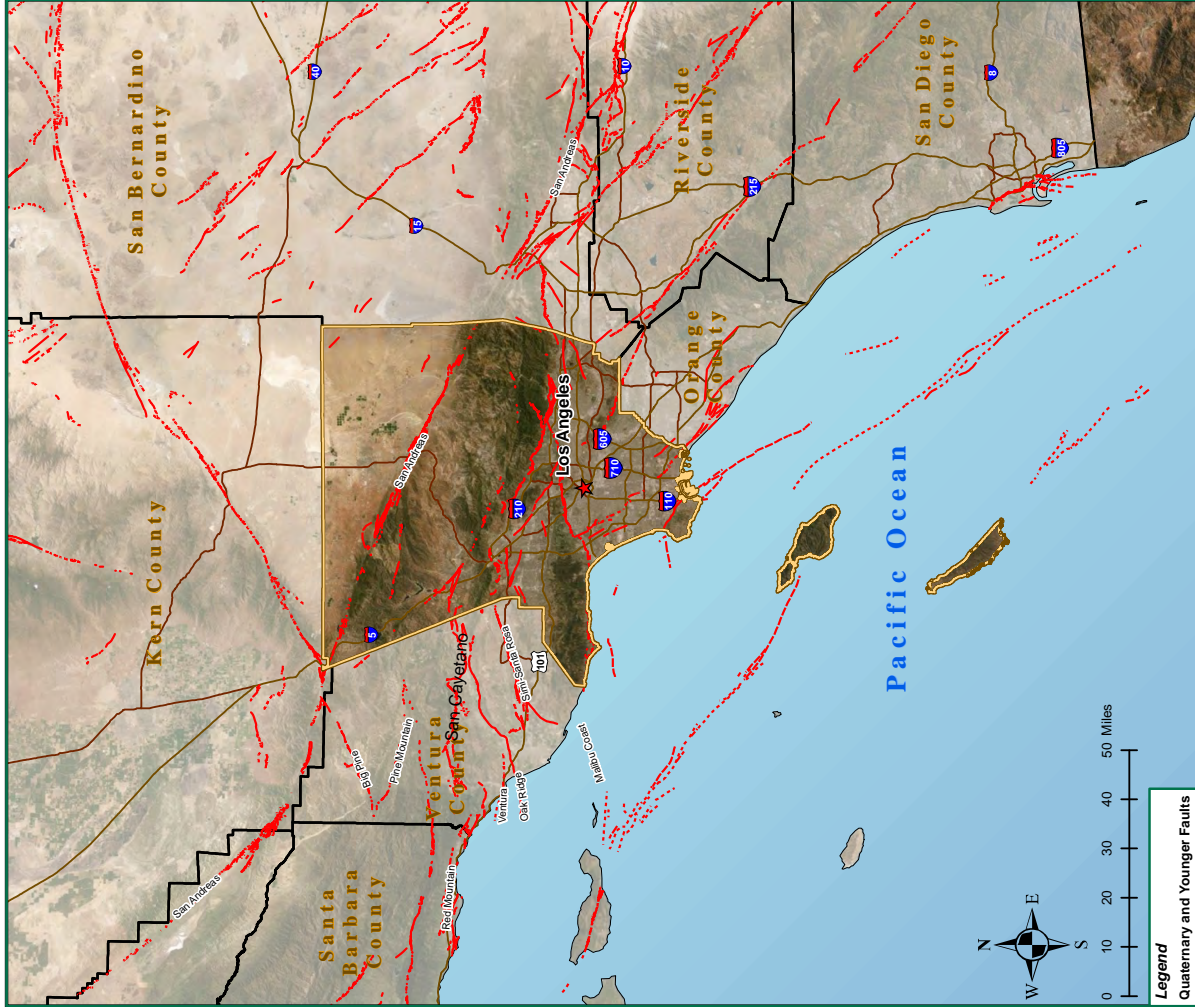
Table 4-17. Seismic Hazard Impact on County Critical Facilities

Department / Agency	Violent EQ Shaking		Extreme EQ Shaking	
	# of Facilities	% of Facilities	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control	6	85.71	1	14.29
Los Angeles County Fire Department	314	93.18	19	5.64
Los Angeles County Health Services	24	82.76	5	17.24
Los Angeles County Library	79	92.94	5	5.88
LACMA & NHM	3	75.00	1	25.00
Los Angeles County Office of Education	32	86.49	5	13.51
Los Angeles County - Other (offices)	24	100.00	0	0.00
Los Angeles County Parks & Recreation	103	88.03	14	11.97
Los Angeles County Public Health	13	92.86	1	7.14
Los Angeles County Public Works	201	87.39	21	9.13
Los Angeles County Sheriff's Department	28	90.32	2	6.45

EQ = earthquake

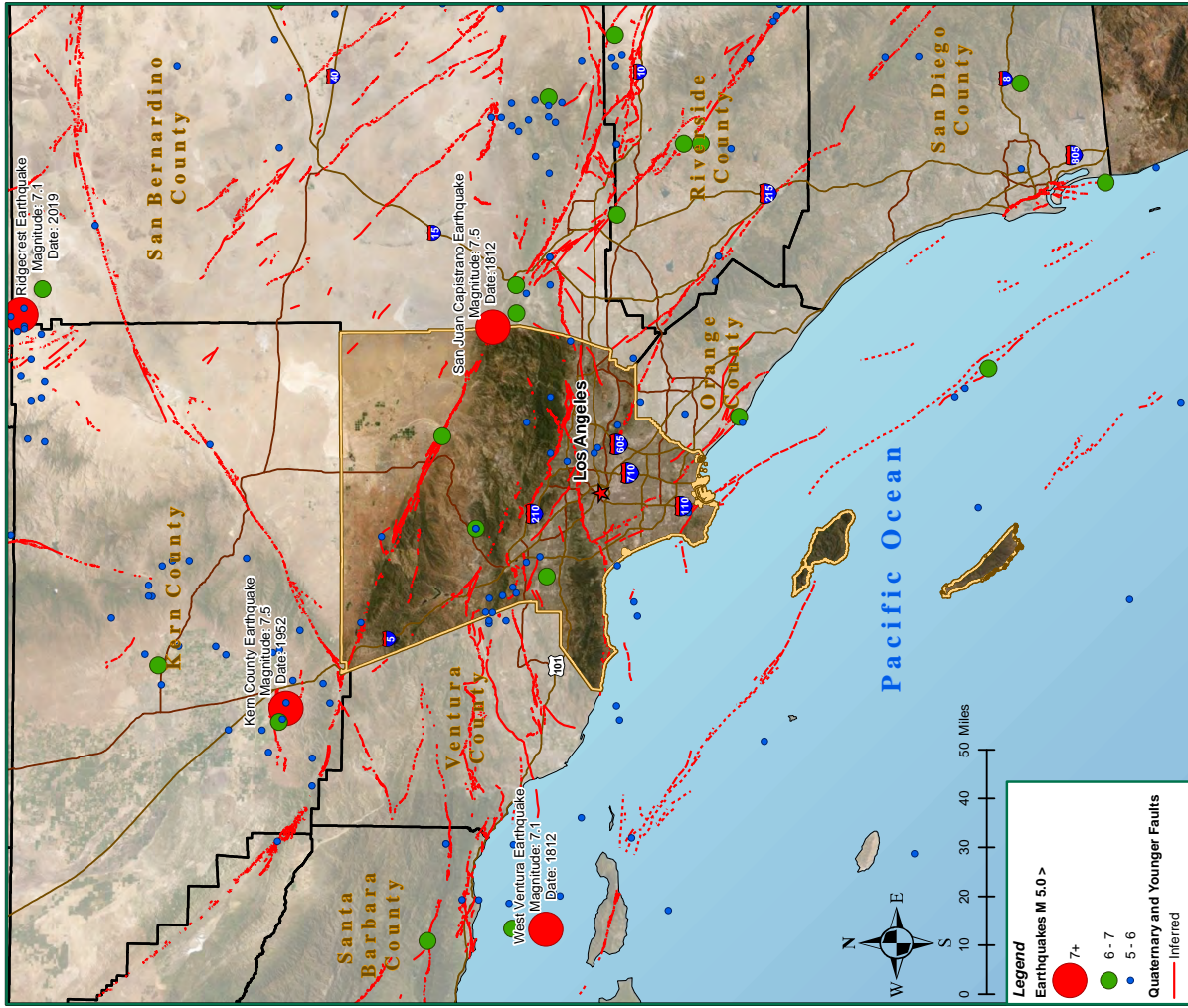
Table 4-18. Overall Summary of Vulnerability to Earthquakes

Earthquake	
Summary	<p>Over 75% of unincorporated Los Angeles County is at risk to violent and extreme perceived shaking from future earthquakes. Violent perceived shaking can produce the potential for heavy damage. According to the USGS, this could mean that well-designed framed structures could be thrown out of plumb and substantial buildings could experience partial building collapse. In extreme shaking, the USGS notes that some well-built wooden structures could be destroyed, and most masonry and frame structures with foundations could be destroyed.</p> <p>Many people in California are looking to boost seismic regulations through the implementation of Assembly Bill (AB) 1857 and AB 2681. AB 1857 will instruct the California Building Standards Commission to increase minimum mandatory standards for most types of buildings in the state, such as apartments, office buildings, and commercial spaces, but would exempt single-family houses and duplexes, while AB 2681 will require cities and counties to create an inventory of potentially vulnerable buildings.</p>



Major Faults in Southern California
Figure 4-4

2019 Los Angeles County
All-Hazards Mitigation Plan



Historical Earthquakes (1769-2019)
Figure 4-5

2019 Los Angeles County
All-Hazards Mitigation Plan

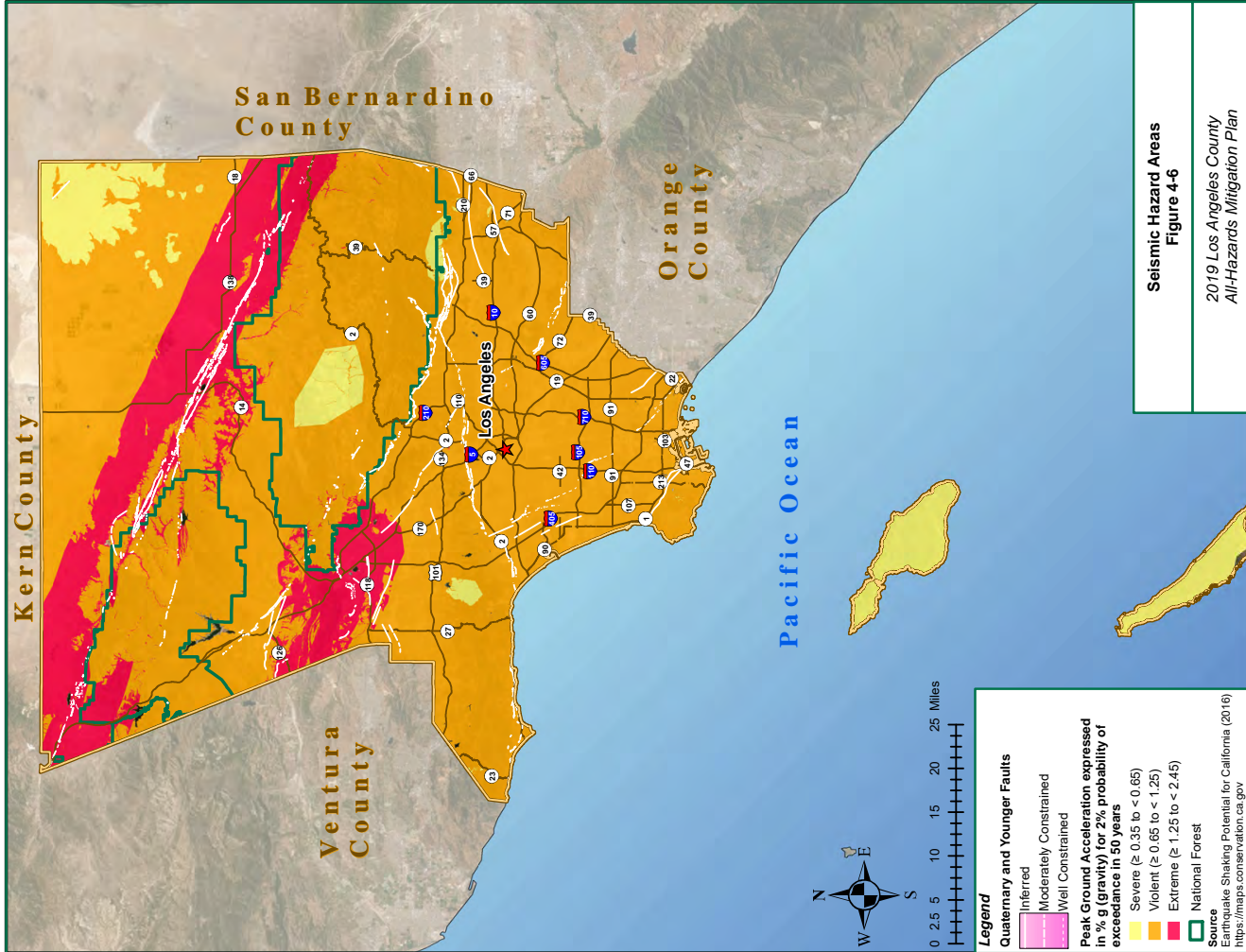
Legend
Quaternary and Younger Faults
— Inferred
- - - Moderately Constrained
- - - Well Constrained
Source
Quaternary Fault and Fold Database of the United States (2018)
<https://earthquake.usgs.gov>

Legend
Earthquakes M 5.0 >
● 7+
● 6 - 7
● 5 - 6
Quaternary and Younger Faults
— Inferred
- - - Moderately Constrained
- - - Well Constrained
Source
Historic Earthquakes, 1769 to 2015 - California (Magnitude 5.0-plus) (2019)
<https://hub.arcgis.com/>
Earthquake Catalogs 1932-2019 (2019)
<http://service.soedc.caltech.edu>

4.4 FLOOD

Table 4-19. Flood Identification Profile

Profile	Description
<p>A flood occurs when the existing channel of a stream, river, canyon, or other watercourse cannot contain excess runoff from rainfall or snowmelt, resulting in overflow onto adjacent lands. In coastal areas, flooding may occur when high winds or tides result in a surge of seawater into areas that are above the normal high tide line.</p> <p>Secondary hazards from floods can include:</p> <ul style="list-style-type: none"> Erosion or scouring of stream banks, roadway embankments, foundations, footings for bridge piers, and other features. Impact damage to structures, roads, bridges, culverts, and other features from high-velocity flow and from debris carried by floodwaters. Such debris may also accumulate on bridge piers and in culverts, increasing loads on these features or causing overtopping or backwater effects. Destruction of crops, erosion of topsoil, and deposition of debris and sediment on croplands. Release of sewage and hazardous or toxic materials when wastewater treatment plants are inundated, storage tanks are damaged, and pipelines are severed. <p>In areas such as Los Angeles County that do not have extended periods of below-freezing temperatures or significant snowfall, floods usually occur during the season of highest precipitation or during heavy rainfalls after prolonged dry periods. Los Angeles County is dry during the late spring, summer, and early fall, and receives most of its rain during the winter months. The rainfall season extends from November through April, with approximately 95% of the annual rainfall occurring during this period. Los Angeles County averages only 15 inches of precipitation per year; less in along the coast and the desert, and more in the foothills and mountains.</p>	<p>Los Angeles County has an extensive flood control system (Figure 4-7) that has eliminated much of their flood hazards. However, major flood sources in Los Angeles County still include Ballona Creek, Los Angeles River, Malibu Creek, Pacific Ocean, Rio Hondo River, San Gabriel River and its tributaries, Santa Clara River, Topanga Canyon, and the Pacific Ocean.</p> <p>In the unincorporated areas of Los Angeles County, flooding sources include:</p> <ul style="list-style-type: none"> Little Rock and Big Rock Washes: Flooding occurs when the flows reach the valley floor where the channels flatten out. This allows the flows to spread over great distances, inundating the surrounding areas. Antelope Valley: Flooding occurs when flows from the mountains reach the broad alluvial plain in the Antelope Valley, are north of the mountains across the broad alluvial plain. During minor storms, much of the flow percolates into the ground. In major storms, flows reach the lake at the northern county limits, where flood flows pond until evaporated. Foothills of Santa Clarita: Flooding and mudflows occur in the foothill areas during intense rainfall, usually following fires in the upstream watershed. Coastline: Flooding is caused by waves generated by winter storms. The occurrence of such a storm event in combination with high astronomical tides and strong winds can cause a significant wave runup and allow storm waves to reach higher than normal elevations along the coastline.
<p>Nature</p>	<p>Location</p>



Seismic Hazard Areas
Figure 4-6
2019 Los Angeles County
All-Hazards Mitigation Plan

Table 4-19. Flood Identification Profile

Profile	Description
	<p>The federal government has declared 13 flooding emergencies affecting Los Angeles County, including:</p> <ul style="list-style-type: none"> California Flood and Erosion (Disaster Declaration Number [DR]-15), February 5, 1954 California Flooding (DR-47), December 23, 1955 California Heavy Rainstorms, Flood (DR-82), April 4, 1958 California Floods (DR-122), March 6, 1962 California Severe Storms, Flooding (DR-138), October 24, 1962 California Severe Storms, Heavy Rains, Flooding (DR-145), February 25, 1963 California Flooding (DR-270), August 15, 1969 California Winter Storms Flooding (DR-547), February 15, 1978 Southern California Winter Storms (DR-615), February 7 and 21, 1980 Coastal Storms (DR-812), December 21, 1988 California Winter Storms (DR-935), February 12 and 19, 1992 California Winter Storms (DR-979), January 7, 1993-February 19, 1993 California Severe Winter Storms, Flooding, and Mudslides (DR-4305), January 18, 2017-January 23, 2017
History	

Extent / Severity	<p>The magnitude of flooding that is used as the standard for floodplain management in the United States is a flood with a probability of occurrence of 1% in any given year. This flood is also known as the 100-year flood (i.e., base flood). The 100-year flood, as well as the 500-year flood (0.2%), are considered Special Flood Hazard Areas (SFHA) and identified on FEMA's Digit Flood Insurance Rate Maps (DFIRM). The Los Angeles County DFIRM (Figure 4-8) identifies 4.19 square miles (0.09%) with a 1% annual chance of flooding, and 243.32 square miles (5.11%) with a 0.2% annual chance of flooding. In the unincorporated areas of Los Angeles County, there are 1.23 square miles (0.04%) with a 1% annual chance of flooding, and an additional 64.77 square miles (2.13 %) with a 0.2% annual chance of flooding.</p>
Recurrence Probability	<p>Floods can occur at any time but are most common with winter storms packed with subtropical moisture.</p>

Table 4-20. Flood Impact on Land Area

Entity	0.2% Annual Chance of Flooding # of Sq. Miles	% of Sq. Miles	1% Annual Chance of Flooding # of Sq. Miles	% of Sq. Miles
Los Angeles County	243.32	5.11	4.19	0.09
Unincorporated Los Angeles County	64.77	2.13	1.23	0.04
Supervisory District 1	27.14	11.02	0.90	0.37
Supervisory District 2	19.32	11.94	0.20	0.12
Supervisory District 3	4.38	1.01	1.31	0.30
Supervisory District 4	80.06	18.20	0.32	0.07
Supervisory District 5	112.39	4.00	1.45	0.05

Table 4-21. Flood Impact on Vulnerable Populations – People Experiencing Homelessness

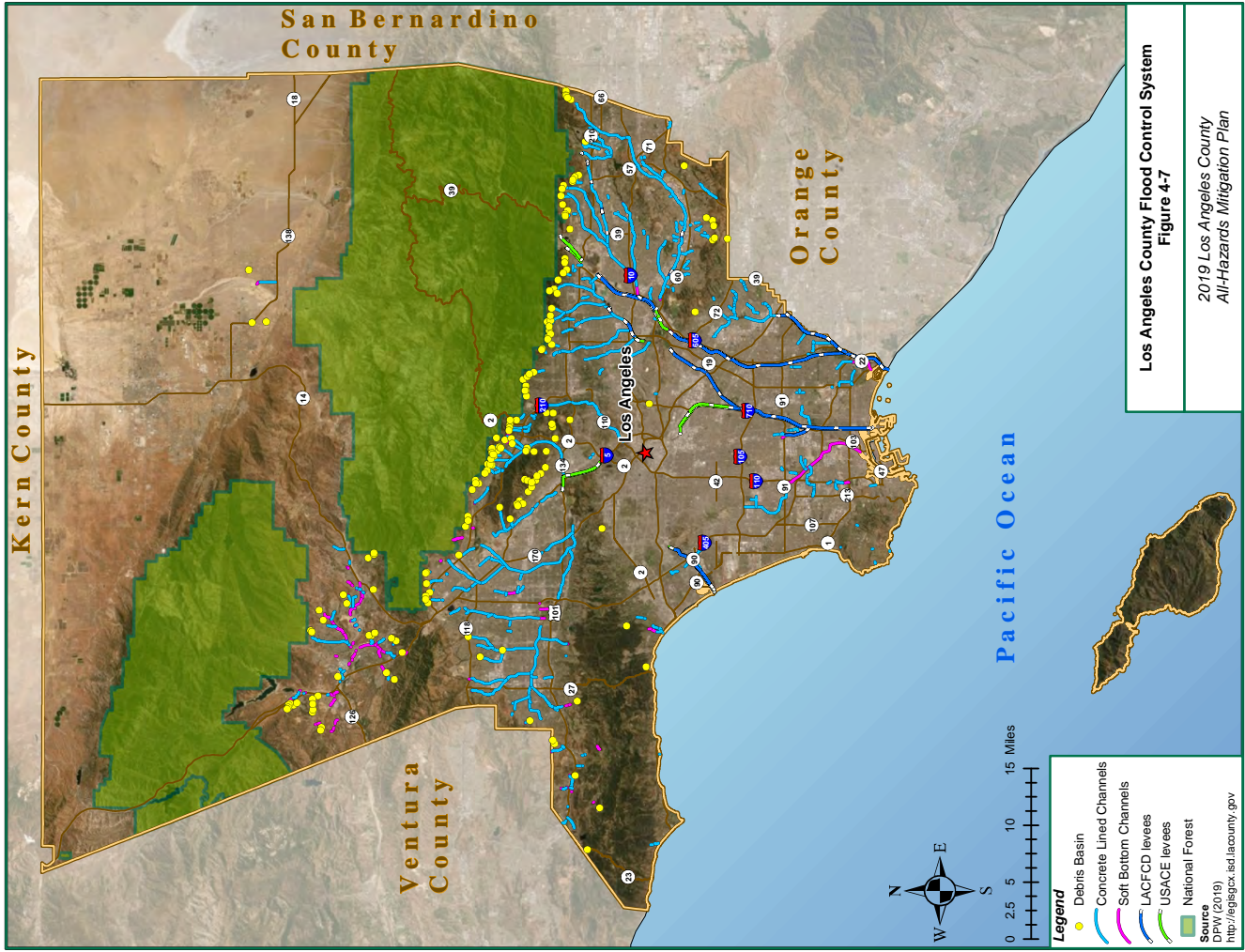
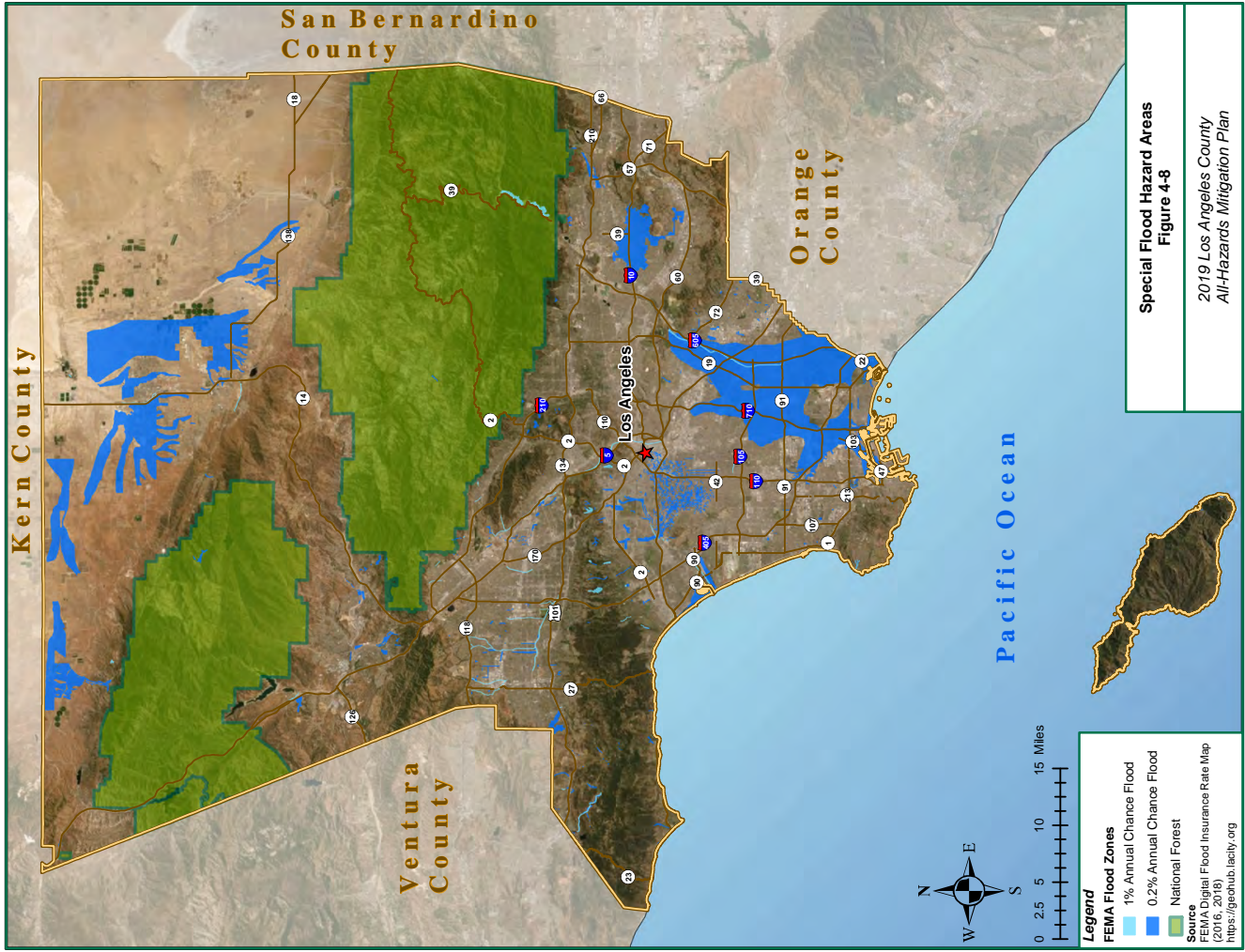
Entity	0.2% Annual Chance of Flooding # of Homeless	% of Homeless	1% Annual Chance of Flooding # of Homeless	% of Homeless
City of Los Angeles	1,601	4.86	87	0.26
Unincorporated Los Angeles County	170	2.88	0	0.00

Table 4-22. Flood Impact on County Critical Facilities

Department / Agency	0.2% Annual Chance of Flooding		1% Annual Chance of Flooding	
	# of Facilities	% of Facilities	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control Department	2	28.57	0	0.00
Los Angeles County Fire Department	46	13.65	0	0.00
Los Angeles County Health Services	5	17.24	0	0.00
Los Angeles County Library	15	17.65	0	0.00
LACMA & NHM	0	0.00	0	0.00
Los Angeles County Office of Education	5	13.51	0	0.00
Los Angeles County - Other (offices)	2	8.33	0	0.00
Los Angeles County Parks & Recreation	8	6.84	0	0.00
Los Angeles County Public Health	0	0	0	0.00
Los Angeles County Public Works	41	17.38	1	0.43
Los Angeles County Sheriff's Department	5	16.13	0	0.000

Table 4-23. Overall Summary of Vulnerability to Floods

	Flood
Summary	<p>Los Angeles County has a long history of moderate to severe flooding during major storms. In the Los Angeles basin area, an extensive flood control system has eliminated much of this problem. However, in the less densely populated areas where relatively few flood controls have been constructed, flooding remains a problem. In areas with alluvial fans, flood flows discharge from the mountainous canyons in an uncontrolled manner onto the desert floor, thereby resulting in widespread damage to agricultural land, buildings, and infrastructure. In the foothill areas that experience intense rainfall, mudflows pose a risk to those downstream. Finally, along the coast, waves generated by winter storms in combination with high astronomical tides and strong winds can cause a significant wave runup, resulting in erosion and coastal flooding to low-lying portions of the shoreline.</p> <p>According to the Los Angeles County Public Works, there are 55 Repetitive Loss (RL) properties in 22 RL areas of unincorporated Los Angeles County as of the last submitted 2019 Community Rating System (CRS) Recertification. A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) in any rolling 10-year period, since 1978. Updated location information about RL properties in the unincorporated areas of Los Angeles County were not available during the drafting of this plan. Data from 2011 showed that 26 RL properties were located in the SFHA. At the time, Los Angeles County Public Works stated, "the majority of the repetitive losses are associated with localized urban drainage flood problems, even for properties within a FEMA-designated flood zone." Los Angeles County Public Works oversees RL mitigation projects.</p>



4.5 LANDSLIDE

Table 4-24. Landslide Identification Profile

Profile	Description
	<p>Landslide is a general term for the dislodging and fall of a mass of soil or rocks along a sloped surface, or for the dislodged mass itself. The term is used for varying phenomena, including mudflows, mudslides, debris flows, rock falls, rockslides, debris avalanches, debris slides, and slump-earth flows. Landslides may result from a wide range of combinations of natural rock, soil, or artificial fill. The susceptibility of hillside and mountainous areas to landslides depends on variations in geology, topography, vegetation, and weather. Landslides may also occur because of indiscriminate development of sloping ground or the creation of cut-and-fill slopes in areas of unstable or inadequately stable geologic conditions.</p> <p>Additionally, landslides often occur together with other natural hazards, thereby exacerbating conditions, as described below:</p> <ul style="list-style-type: none"> • Shaking due to earthquakes can trigger events ranging from rock falls and topples to massive slides. • Intense or prolonged precipitation that causes flooding can also saturate slopes and cause failures leading to landslides. • Wildfires can remove vegetation from hillsides, significantly increasing runoff and landslide potential. • Landslides into a reservoir can indirectly compromise dam safety; a landslide can even affect the dam itself. • Another type of landslide occurs in areas cut by perennial streams. As floodwaters erode channel banks, rivers have undercut clay-rich sedimentary rocks along their south bank, thereby destabilizing the ground and causing the ground above it to slide.
Location	<p>In 2011, CCS created a deep-seated landslide grip map to show the relative likelihood of deep landslides in California. The map combines landslide inventory, geology, rock strength, slope, average annual rainfall and earthquake shaking potential layers to create classes of landslide susceptibility. As shown in Figure 4-9, the map shows areas of low landslide susceptibility, mainly, the Los Angeles Basin, to areas of high susceptibility, including the Santa Monica Mountains, the San Gabriel Mountains, the Sierra Pelona Mountains, the Baldwin Hills, the Puente Hills, and the Palos Verdes Hills.</p>

Table 4-24. Landslide Identification Profile

Profile	Description
History	<p>Like much of California, Los Angeles County has experienced landslides. Landslides in Los Angeles are generally triggered by intense and/or prolonged rainfall but can also occur after an earthquake. Notable recent landslides in Los Angeles County include:</p> <ul style="list-style-type: none"> • January 1994, the Northridge earthquake triggered more than 11,000 landslides, with the majority concentrated in the Santa Susana Mountains and the mountains north of the Santa Clara River valley. Most of the triggered landslides were shallow highly disrupted falls and slides. However, the larger disrupted slides were reactivations of previously existing landslides. • March 1995, heavy rains weakened the geologically unstable Pacific Palisades bluffs. A 300-foot section gave way and buried part of Pacific Coast Highway under up to 30 feet of rain-soaked earth, rock, and debris. • March 2005, a slide near Sunset Mesa caused 20,000 cubic yards of debris to cover the Pacific Coast Highway. • January 2018, a hillside in Malibu gave way leaving a house uninhabitable. • December 2018, heavy rain on the Woolsey Fire burned hillsides created debris flows and mudslides in and around Malibu causing several road closures. • January 2019, sections of the Pacific Coast Highway near the Ventura County line were closed due to mudslides.
Extent / Severity	<p>Figure 4-9 shows deep seated landslide susceptibility areas in Los Angeles County. According to the Susceptibility to Deep-Seated Landslides grip map, there are 750.02 square miles (15.75%) of land in Los Angeles County located in the Classes IX and X. In the unincorporated areas of Los Angeles County, there are 577.63 square miles (18.99%) in this hazard area.</p>
Recurrence Probability	<p>Shallow landslides can occur at any time during the winter but are more likely happen when the ground is nearly saturated. According to the USGS, in Southern California "at least 10 inches of rainfall during the winter is needed to nearly saturate the ground. After this point, a rain burst of 0.2 to 0.25 in in one hour has been observed to trigger abundant shallow landslides." However, deep-seated landslides generally need deep infiltration of rainfall (which can take weeks or months to occur) to be triggered.</p>

Table 4-25. Landslide Impact on Land Area

Entity	Deep Seated Landslide Class IX and X # of Sq. Miles	% of Sq. Miles
Los Angeles County	75002	15.75
Unincorporated Los Angeles County	57763	18.99
Supervisory District 1	1729	7.02
Supervisory District 2	273	1.68
Supervisory District 3	11461	26.58
Supervisory District 4	10512	23.89
Supervisory District 5	50931	18.14

Table 4-26. Landslide Impact on Vulnerable Populations – People Experiencing Homelessness

Entity	Deep Seated Landslide Class IX and X # of Homeless	% of Homeless
City of Los Angeles	234	0.71
Unincorporated Los Angeles County	325	5.55

Table 4-27. Landslide Impact on County Critical Facilities

Department / Agency	Deep Seated Landslide Class IX and X # of Facilities	% of Facilities
Los Angeles County Animal Care & Control	0	0.00
Los Angeles County Fire Department	7	2.08
Los Angeles County Health Services	0	0.00
Los Angeles County Library	0	0.00
LACMA & NHM	0	0.00
Los Angeles County Office of Education	1	2.70
Los Angeles County - Other (offices)	0	0.00
Los Angeles County Parks & Recreation	2	1.71
Los Angeles County Public Health	0	0.00
Los Angeles County Public Works	37	16.09
Los Angeles County Sheriff's Department	1	3.23

Table 4-28. Overall Summary of Vulnerability to Landslides

Summary	Landslide
	<p>Areas prone to landslide include existing old landslides, base of slopes, base of minor drainage hollows, base or top of an old fill slope, base or top of a steep cut slope, and developed hillsides where leach field, septic systems are used. In Los Angeles County, the majority of landslide-prone areas include the Santa Monica Mountains, the San Gabriel Mountains, the Sierra Pelona Mountains, the Baldwin Hills, the Puente Hills, and the Palos Verdes Hills. Landslides may cause injury or death to those trapped; break utility lines; block/damage roadways; damage foundations, chimneys, or surrounding land; and lead to flash flooding and additional landsliding.</p> <p>In Los Angeles County, landslide risks are mitigated through the Hillside Management Area Ordinance & Hillside Design Guidelines (Table 5-3).</p>

4.6 TSUNAMI

Table 4-29. Tsunami Identification Profile

Profile	Description
Nature	<p>A tsunami is a series of traveling ocean waves of extremely long length, generated by disturbances associated primarily with earthquakes occurring below or near the ocean floor. Subduction zone earthquakes at plate boundaries often cause tsunamis. However, tsunamis can also be generated by underwater landslides or volcanic eruptions, the collapse of volcanic edifices, and—in very rare instances—large meteorite impacts in the ocean.</p> <p>In the deep ocean, a tsunami may have a length from wave crest to wave crest of 100 miles or more, but a wave height of only a few feet or less. Thus, the wave period can be up to several hours, and wavelengths can exceed several hundred miles. Therefore, tsunamis are unlike typical wind-generated swells on the ocean, which might have a period of about 10 seconds and a wavelength of up to 300 feet. Tsunamis cannot be felt aboard ships and they cannot be seen from the air or the open ocean. In deep water, the waves may reach speeds exceeding 700 miles per hour.</p> <p>Tsunamis arrive as a series of successive crests (high water levels) and troughs (low water levels). These successive crests and troughs can occur anywhere from 5 to 90 minutes apart; however, they usually occur 10 to 45 minutes apart.</p> <p>Tsunamis not only affect beaches that are open to the ocean, but also bay mouths, tidal flats, and the shores of large coastal rivers. Tsunami waves can also diffract around land masses. Because tsunamis are asymmetrical, the waves may be much stronger in one direction than another, depending on the nature of the source and the surrounding geography. However, tsunamis do propagate outward from their source, so coasts in the shadow of affected land masses are safer.</p>
Location	<p>Figure 4-10 shows tsunami evacuation area based on Maximum Phase as described in the California Tsunami Evacuation Playbook. This map illustrates coastal land areas that can become submerged due to tsunami run-up. The area of land subject to inundation is a factor of:</p> <ul style="list-style-type: none"> • Distance of shoreline from the tsunami-generating event • Magnitude of the earthquake causing the event; duration and period of waves • Run-up elevations • Tidal level at time of occurrence • Location along shore and direction of shore in respect to propagated waves • Topography of the seabed <p>In Los Angeles County, areas at risk to the maximum tsunami run up include the ports of Long Beach and Los Angeles, Catalina Island, and areas in the cities of Los Angeles, Long Beach, Manhattan Beach, Redondo Beach, Hermosa Beach, El Segundo, Palos Verdes, Santa Monica, Del Rey, Santa Catalina Island, Santa Monica Mountains, San Clemente Island, and Ballona Wetlands Area A) are subject to inundation.</p>

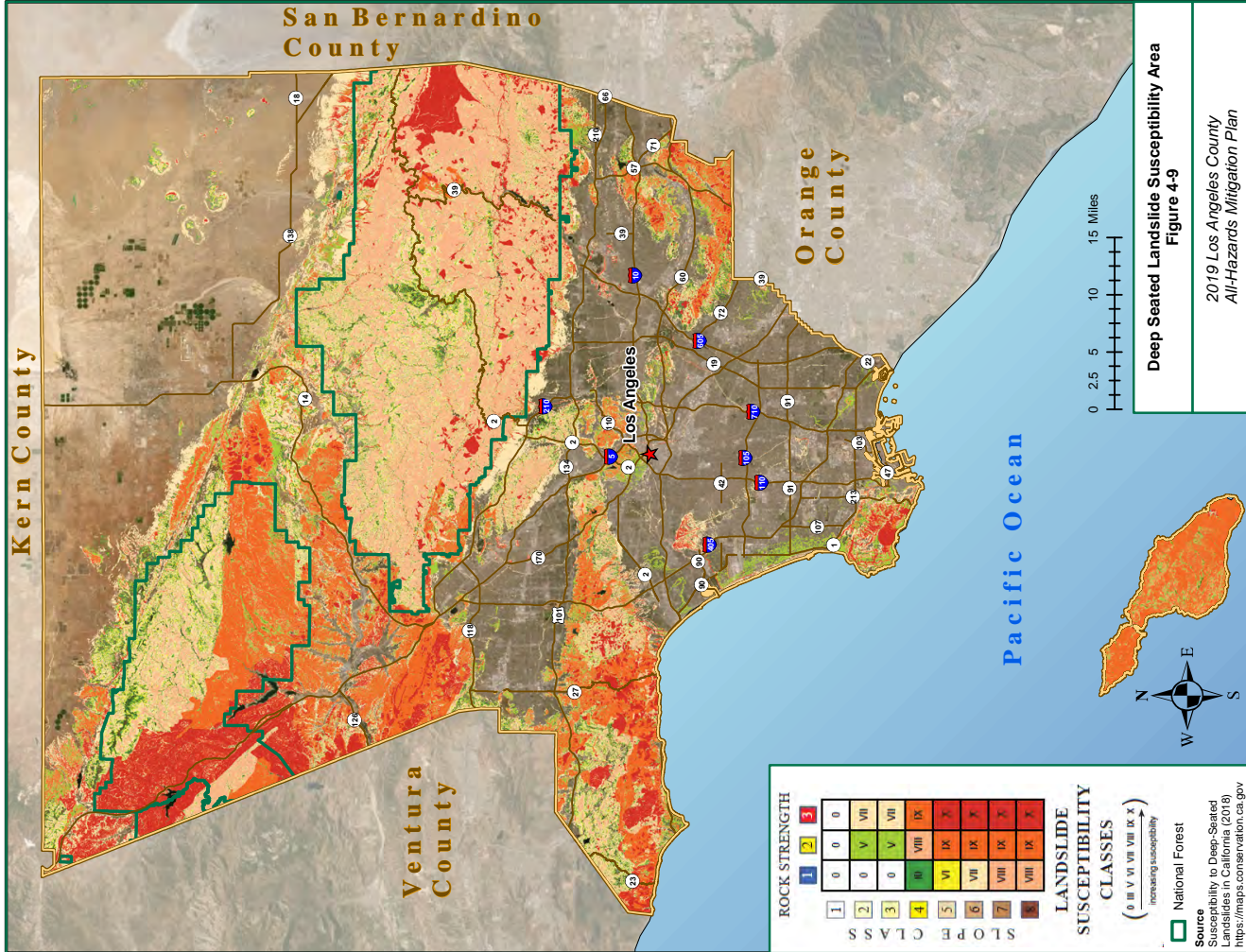


Table 4-29. Tsunami Identification Profile

Profile	Description
	<p>Between 1923 and 2011, 11 major tsunami events occurred in Los Angeles County, including:</p> <ul style="list-style-type: none"> • April 13, 1923, a M 7.2 earthquake in Kamcharka caused a tsunami in Los Angeles. • August 30, 1930, a probable meteoric tsunami (i.e., a tsunami of meteorological origin) with a 10-foot run-up amplitude hit Santa Monica. • April 1, 1946, a M 8.8 earthquake in the Aleutian Islands caused tsunamis with run-up amplitudes ranging from 1 to 6 feet in Catalina Island, Los Angeles, and Long Beach, breaking ships from their moorings. • November 4, 1952, a M 9.0 earthquake in Kamcharka caused tsunamis with run-up amplitudes ranging from 1 to 2 feet in Santa Monica, Los Angeles, and Long Beach. • March 9, 1957, a M 8.6 earthquake in the Aleutian Islands caused tsunamis with run-up amplitudes ranging from 1 to 2 feet in Santa Monica, Los Angeles, and Long Beach. • May 22, 1960, a M 9.5 earthquake in Chile caused tsunamis with run-up amplitudes ranging from 2 to 5 feet in Catalina Island, Los Angeles, Long Beach, and Santa Monica. One person died, 800 small craft were unmoored, 200 boats were damaged, and 40 boats were sunk. The tsunamis resulting in \$1 million dollars in damages. • March 28, 1964, a M 9.2 earthquake in Alaska caused tsunamis with run-up amplitudes ranging from 2 to 3 feet in Catalina Island, Los Angeles, Long Beach, and Santa Monica. One longshoreman was killed, 100 boats were unmoored, and 7 boats were sunk. The tsunamis caused approximately \$350 thousand dollars in damages. • November 29, 1975, a M 7.1 earthquake in Hawaii caused a tsunami with a run-up amplitude of 4 feet in Catalina Island, damaging docks and boats. • September 29, 2009, a M 8.0 earthquake in Samoa caused a tsunami with a 1-foot run-up amplitude in Los Angeles. • February 27, 2010, a M 8.8 earthquake in Chile caused tsunamis with run-up amplitudes ranging from 1 to 3 feet in Catalina Island, Los Angeles, Long Beach, and Santa Monica, causing minor damage to docks and boats. • March 11, 2011, a M 9.0 earthquake in Japan caused tsunamis with run-up amplitudes ranging from 2 to 3 feet in Catalina Island, Los Angeles, Long Beach, Redondo Beach, and Santa Monica, damaging docks and boats.
Extent / Severity	<p>Figure 4-10 shows the maximum considered tsunami runup from a number of extreme tsunami sources. There are 43.35 square miles (0.91%) in Los Angeles County located in this hazard area. In the unincorporated areas of Los Angeles County there are 2.07 square miles (0.07%) at risk to a maximum tsunami runup.</p>
Recurrence Probability	<p>Based on the history of tsunami run-ups in the region and the history of earthquakes in the Pacific Rim, another tsunami event is likely to occur, although the extent and probability is unknown.</p>

Table 4-30. Tsunami Impact on Land Area

Entity	# of Sq. Miles	Maximum Tsunami Inundation Area % of Sq. Miles
Los Angeles County	43.35	0.91
Unincorporated Los Angeles County	2.07	0.07
Supervisory District 1	0.00	0.00
Supervisory District 2	0.12	0.08
Supervisory District 3	2.65	0.61
Supervisory District 4	18.00	4.09
Supervisory District 5	0.00	0.00

Table 4-31. Tsunami Impact on Vulnerable Populations – People Experiencing Homelessness

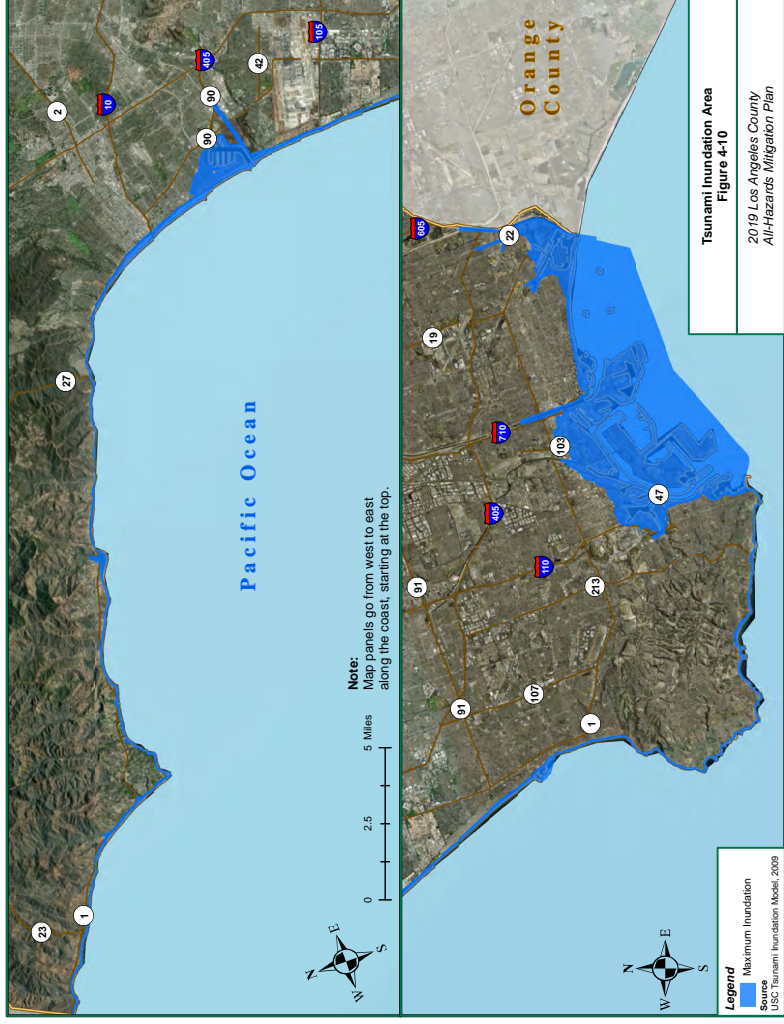
Entity	# of Homeless	Maximum Tsunami Inundation Area % of Homeless
City of Los Angeles	622	1.89
Unincorporated Los Angeles County	20	0.34

Table 4-32. Tsunami Impact on County Critical Facilities

Department / Agency	# of Facilities	Maximum Tsunami Inundation Area % of Square Facilities
Los Angeles County Animal Care & Control	0	0.00
Los Angeles County Fire Department	14	4.15
Los Angeles County Health Services	0	0.00
Los Angeles County Library	1	1.18
LACMA & NHM	0	0.00
Los Angeles County Office of Education	0	0.00
Los Angeles County - Other (offices)	1	4.17
Los Angeles County Parks & Recreation	0	0.00
Los Angeles County Public Health	0	0.00
Los Angeles County Public Works	15	6.52
Los Angeles County Sheriff's Department	1	3.23

Table 4-33. Overall Summary of Vulnerability to Tsunamis

Tsunami	
Summary	<p>In Southern California, an earthquake could trigger an underwater avalanche or submarine landslide in the Santa Monica Bay and produce a tsunami that could inundate low-lying areas of Los Angeles County. In fact, according to researchers a locally generated tsunami could bring water as high as 5 feet in Marina del Rey, 7 feet in Manhattan Beach, 8 feet at the ports, and 11 feet in Redondo Beach. Such a tsunami could flood homes and destroy many small boats in nearby harbors, thereby creating dangerous debris.</p> <p>Researchers warn that California needs to be better prepared for tsunamis and while new deep-sea sensors have helped in tsunami detection, they are better suited for far-away tsunamis rather than local tsunamis.</p> <p>California OES and CGS lead Tsunami Preparedness Week in California annually. During this week, governmental agencies, such as Los Angeles County OEM, and community organizations, participate in exercises, test warning systems and response plans, and host community events to promote tsunami awareness.</p>



4.7 WILDFIRE

Table 4-34. Wildfire Identification Profile

Profile	Description
	<p>Wildfires spread by consuming flammable vegetation. This fire type often begins unnoticed, spreads quickly, and is usually signaled by dense smoke that may be visible from miles around. Wildfires can be caused by human activities (e.g., unattended burns, campfires, or off-road vehicles without spark arresting mufflers) or by natural events such as lightning.</p> <p>Wildfires often occur in forests or other highly vegetated areas. In addition, wildfires can be classified as forest, urban, interface or intermix fires, and prescribed burns.</p> <p>The following three factors contribute significantly to wildfire behavior and can be used to identify wildfire hazard areas:</p> <ul style="list-style-type: none"> • Topography describes slope increases, which influences wildfire spread rate increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildfire behavior. However, ridge tops may mark the end of wildfire spread since fire spreads more slowly or may even be unable to spread downhill. • Fuel is the type and condition of vegetation that plays a significant role in wildfire spread occurrence. Certain plant types are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available as fire fuel (referred to as the "fuel load"). The living-to-dead plant matter ratio is also important. Certain climate changes may increase wildfire risk significantly during prolonged drought periods, as both living and dead plant matter moisture content decreases. Both the horizontal and vertical fuel load continuity is also an important factor. • Weather is the most variable factor affecting wildfire behavior. Temperature, humidity, wind, and lightning can affect ignition opportunities and fire spread rate. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildfire activity. Climate change increases fire to vegetation ignition susceptibility due to longer dry seasons. By contrast, cooling and higher humidity often signal reduced wildfire occurrence and easier containment. <p>Wildfire frequency and severity sometimes result from other hazard impacts, such as lightning, drought, and infestations (e.g., damage caused by spruce-bark beetle infestations). If not promptly controlled, wildfires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. In addition to affecting people, wildfires may severely affect livestock and pets. Such events may require emergency water/food, evacuation, and shelter.</p> <p>Indirect wildfire effects can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and exacerbate river and stream siltation; thereby increasing flood potential, harming aquatic life, and degrading water quality. Vegetation-stripped lands are more susceptible to increased debris flow hazards.</p>
Nature	<p>Public Resources Code 4201.4204 and Government Code 51175.89 directed the California Department of Forestry and Fire Protection (Cal FIRE) to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These FHSZ are represented as very high, high, or moderate. Specifically, the maps were created using data and models describing development patterns, potential fuels over a 30- to 50-year time horizon, expected fire behavior, and expected burn probabilities. The maps are divided into local responsibility areas (LRAs) and state responsibility areas (SRAs). LRAs generally include cities, cultivated agriculture lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and by Cal FIRE under contract to the local government. SRA is a</p>
Location	

Table 4-34. Wildfire Identification Profile

Profile	Description
	<p>legal term defining the area where the state has financial responsibility for wildfire protection. The Los Angeles County Fire Department is one of six contract counties, which has executed a contract with the State of California to provide wildland fire protection on SRA.</p> <p>Figure 4-11 displays the areas of Los Angeles County most susceptible to wildfires and indicates areas of local or state responsibility. Very high FHSZs are generally located in mountainous or hillside areas, including the Santa Monica Mountains, San Gabriel Mountains, Palos Verdes Hills, and Puente Hills.</p> <p>As shown in Figure 4-12, wildfires are a common occurrence in Los Angeles County. Some of the county's most destructive fires have occurred since 2000, including:</p> <ul style="list-style-type: none"> • The Grand Prix Fire started on October 21, 2003 and burned a total of 50,618 acres between Claremont and Lytle Creek. The fire destroyed 136 homes and was ruled "accidental but human-initiated." • The Simi Fire started on October 25, 2003 and burned a total of 107,570 acres between Simi Hills and southeastern Simi Valley, in eastern Ventura County and western Los Angeles County, California. It destroyed 37 homes and 278 out buildings. The cause of the fire remains unknown. • The Day Fire started on October 30, 2006 and burned a total of 161,816 acres. The fire primarily burned the Los Padres National Forest. The cause of the fire was human-ignited debris. • The Ranch Fire started on October 20, 2007 and burned a total of 58,410 acres near Townsend Peak in the Angeles National Forest. The cause of the fire was equipment. • The Station Fire started on September 22, 2009 and burned a total of 160,883 acres in the Angeles National Forest. The Station Fire is the largest recorded fire in Los Angeles County. It destroyed 89 residences and another 120 buildings of significance. Two firefighters were killed. The cause of the fire was arson. • The Woolsey Fire started November 8, 2018 and burned a total of 96,949 acres in Los Angeles and Ventura counties including Thousand Oaks, Agoura Hills, Calabasas, the Santa Monica Mountains, Malibu, and West Hills. A total of 1,643 structures were destroyed and 3 people were killed.
Extent / Severity	<p>As shown on the Cal FIRE FHSZ maps, in Los Angeles County, there are 386.06 square miles (8.11%) located in the very high LRA FHSZ, 625.01 square miles (13.13%) in the very high SRA FHSZ, and 132.77 square miles (2.79%) in the high SRA FHSZ. In the Unincorporated Los Angeles County, this includes: 23.53 square miles (0.77%) of very high LRA FHSZ; 610.94 square miles (20.09%) of very high SRA FHSZ; and 132.06 square miles (4.34%) of high SRA FHSZ.</p>
Recurrence Probability	<p>The climate in Los Angeles County is characterized as Mediterranean dry-summer featuring cool, wet winters and warm, dry summers. High moisture levels during the winter rainy season significantly increase the growth of plants. However, the vegetation is dried during the long, hot summers, decreasing plant moisture content and increasing the ratio of dead fuel to living fuel. As a result, fire susceptibility increases dramatically, particularly in late summer and early autumn. In addition, the presence of chaparral, a drought-resistant variety of vegetation that is dependent on occasional wildfires, is expected in Mediterranean dry-summer climates. The history of plant succession in Los Angeles County is important in predicting fire susceptibility. For several years after a fire has occurred, easily flammable herbaceous species thrive and increase the likelihood of new fires. When woody species become re-established, they contribute to a lower overall level of fire susceptibility for approximately 10 years. However, after this period, the slow aging plant</p>

Table 4-34. Wildfire Identification Profile

Profile	Description
	community becomes ever more likely to burn because of increased levels of dead plant material and lowered plant moisture levels. Additionally, a local meteorological phenomenon, known as the Santa Ana winds, contributes to the high incidence of wildfires in Los Angeles County. These winds originate during the autumn months in the hot, dry interior deserts to the north and east of Los Angeles County. They often sweep west into the county, bringing extremely dry air and high wind speeds that further desiccate plant communities during the period of the year when the constituent species have very low moisture content. The effect of these winds on existing fires is particularly dangerous; the winds can greatly increase the rate at which fires spread. Based on the conditions described above and the history of occurrence in the past, future events are very likely to occur. In the past, fires burning more than 1,000 acres have occurred about every 1 to 3 years. The extent of future events will depend on specific conditions at the time of the fire.

Table 4-35. Wildfire Impact on Land Area

Entity	Very High LRA FHSZ # of Sq. Miles	% of Sq. Miles	High SRA FHSZ # of Sq. Miles	% of Sq. Miles	Very High SRA FHSZ # of Sq. Miles	% of Sq. Miles
Los Angeles County	386.06	8.11	132.77	2.79	625.01	13.13
Unincorporated Los Angeles County	23.54	0.77	132.06	4.34	610.94	20.09
Supervisory District 1	31.42	12.76	0.00	0.00	1.13	0.46
Supervisory District 2	3.25	2.01	0.00	0.00	0.00	0.00
Supervisory District 3	140.58	32.60	0.01	0.00	92.18	21.38
Supervisory District 4	45.78	10.41	1.11	0.25	86.61	19.69
Supervisory District 5	164.90	5.87	131.65	4.69	444.99	15.85

Table 4-36. Wildfire Impact on Vulnerable Populations – People Experiencing Homelessness

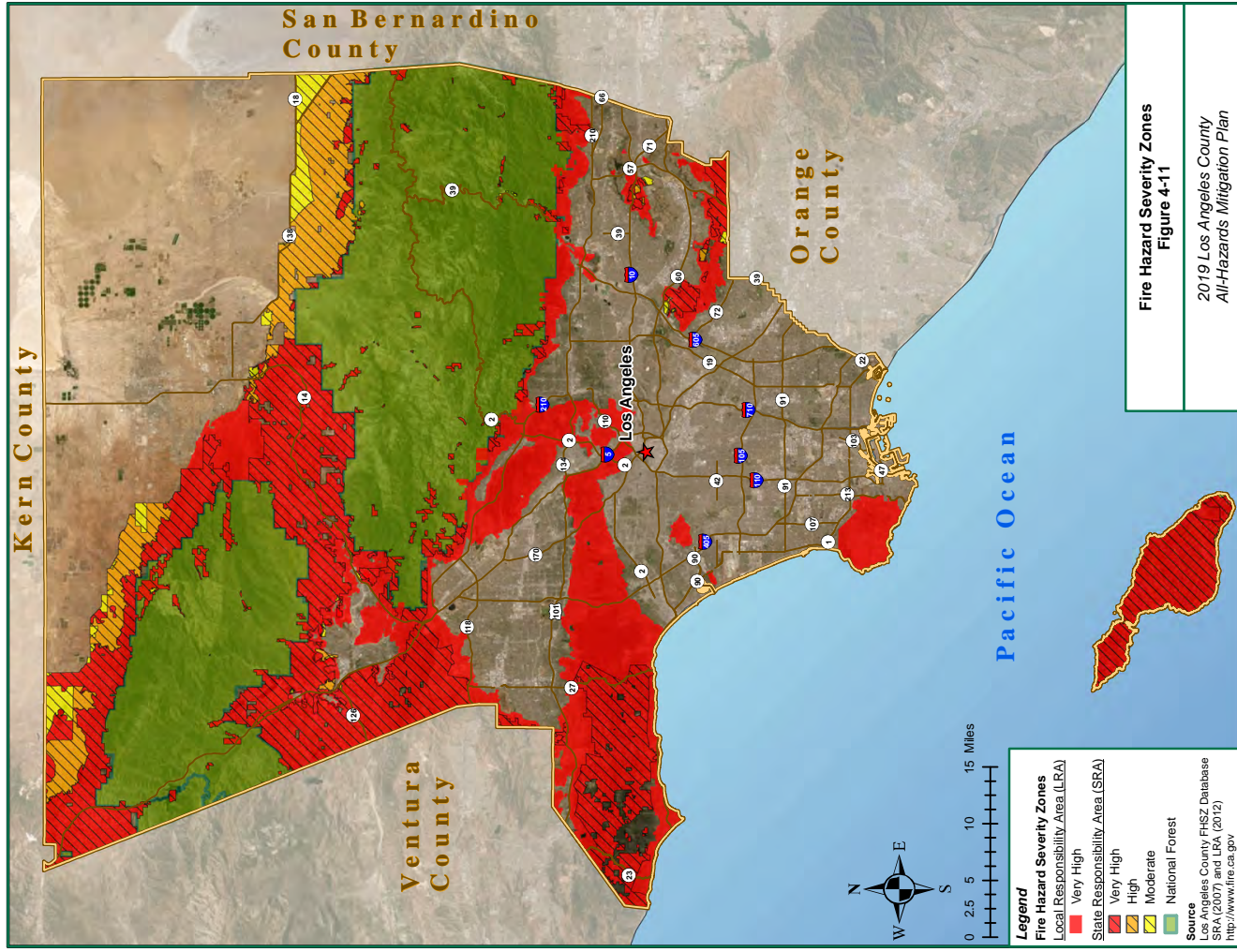
Entity	Very High LRA FHSZ # of Homeless	% of Homeless	High SRA FHSZ # of Homeless	% of Homeless	Very High SRA FHSZ # of Homeless	% of Homeless
City of Los Angeles	1,291	3.92	0	0.00	0	0.00
Unincorporated Los Angeles County	88	1.49	58	0.99	465	7.91

Table 4-37. Wildfire Impact on County Critical Facilities

Department / Agency	Very High LRA FHSZ # of Facilities	% of Facilities	High SRA FHSZ # of Facilities	% of Facilities	Very High SRA FHSZ # of Facilities	% of Facilities
Los Angeles County Animal Care & Control	1	14.29	0	0.00	1	14.29
Los Angeles County Fire Department	39	11.57	1	0.30	14	4.15
Los Angeles County Health Services	1	3.45	0	0.00	0	0.00
Los Angeles County Library	7	8.24	1	1.18	2	2.35
LACMA & NHM	1	25.00	0	0.00	0	0.00
Los Angeles County Office of Education	3	8.11	0	0.00	3	8.11
Los Angeles County - Other (offices)	0	0.00	0	0.00	0	0.00
Los Angeles County Parks & Recreation	13	11.11	1	0.85	12	10.26
Los Angeles County Public Health	52	22.61	4	1.74	41	17.83
Los Angeles County Public Works	0	0.00	0	0.00	0	0.00
Los Angeles County Sheriff's Department	3	9.68	1	3.23	3	9.68

Table 4-38. Overall Summary of Vulnerability to Wildfires

Wildfire	
Summary	<p>Wildfires are not only capable of burning down vegetation, homes, critical facilities, and infrastructure, but they can also cause loss of life to humans and animals, soil erosion, debris flows, air pollution, serious health problems, and restriction of access to recreational areas.</p> <p>The areas in Los Angeles County that are most susceptible to wildfires are generally located in mountainous or hillside areas, including the Santa Monica Mountains, San Gabriel Mountains, Palos Verdes Hills, and Puente Hills. However, the areas that pose greatest risk to people are generally along the wildland-urban interface (WUI) or intermix. These areas are the transition zones between wildlands and human development and often where areas of housing and vegetation commingle.</p> <p>According to researchers at the United States Forest Service, fires in the WUI areas have not deterred redevelopment. In fact, according to the same researchers, there is a push to return the area to "normal" as soon as possible. California has the strictest fire regulations in the country, which supersede any type of local regulations. However, the rules do not apply to existing homes built before 1991, with the average home in California built decades prior. And unlike earthquakes and floods, there is not a retrofit type of program to encourage homeowners to bring their homes up to current fire requirements.</p>



Fire Hazard Severity Zones
Figure 4-11

2019 Los Angeles County
All-Hazards Mitigation Plan

5 MITIGATION STRATEGY

Section 5 – Mitigation Strategy addresses Element C of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans

Element C: Mitigation Strategy

- C1. Does the Plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement § 201.6(c)(3))
- C2. Does the Plan address each jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate? (Requirement § 201.6(c)(3)(i))
- C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement § 201.6(c)(3)(i))
- C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement § 201.6(c)(3)(ii))
- C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement § 201.6(c)(3)(iv)); (Requirement § 201.6(c)(3)(iii))
- C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement § 201.6(c)(4)(ii))

5.1 AUTHORITIES, POLICIES, PROGRAMS, AND RESOURCES

Los Angeles County's existing authorities, policies, programs and resources available for hazard mitigation are listed in Table 5-1 through Table 5-3. These tables have been updated since the 2014 AHMP to reflect any changes in human, technical, financial, legal, and regulatory resources.

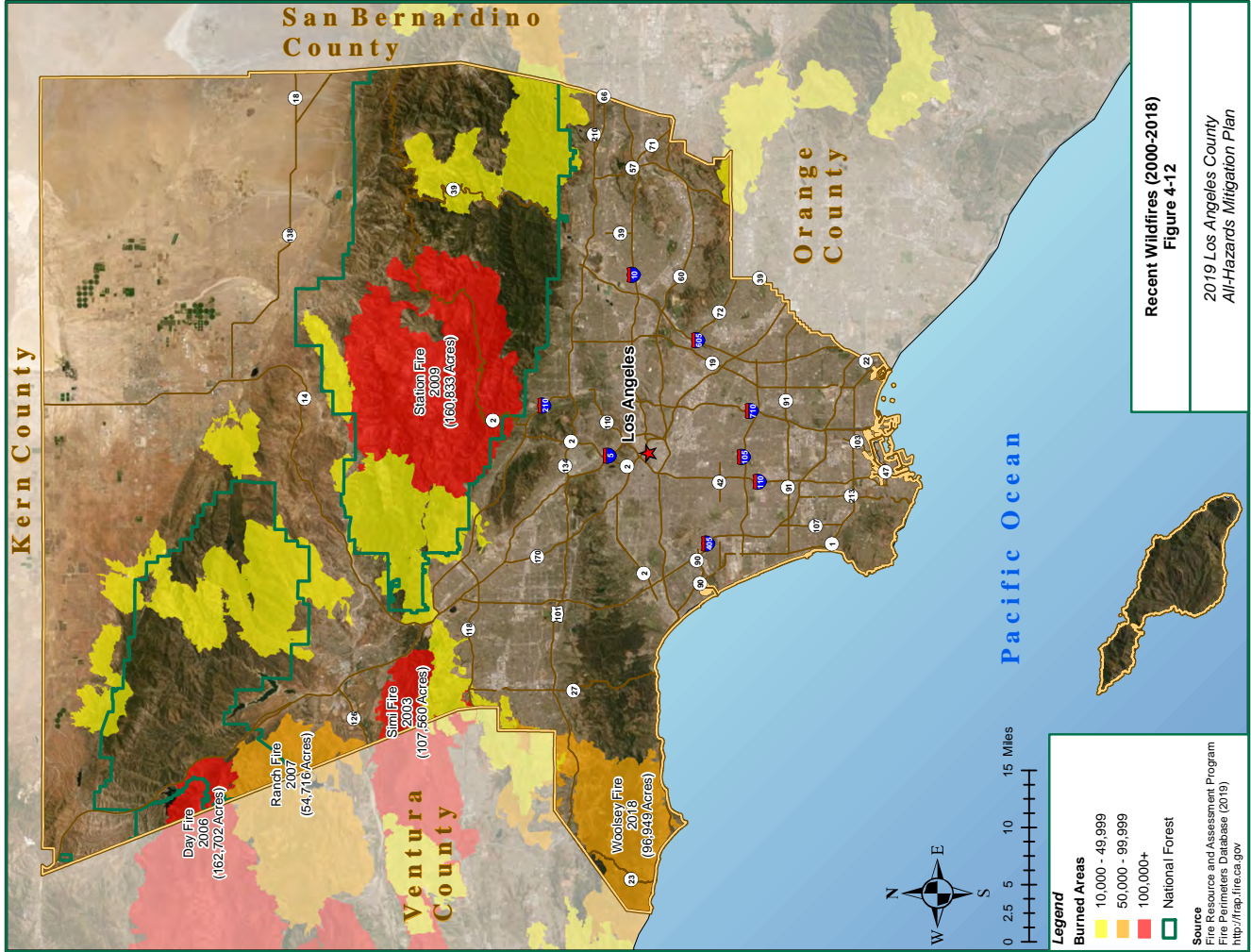


Table 5-1 Human and Technical Resources for Hazard Mitigation

Staff/Personnel	Department / Agency	Principal Activities Related to Hazard Mitigation
Planners (engineers) and technical staff with knowledge of land development, land management practices, and human-caused and natural hazards.	Los Angeles County Department of Regional Planning	Develops and maintains the Los Angeles County 2035 General Plan, including the safety element. Develops area plans based on the Los Angeles County 2035 General Plan, to provide more specific guidance for the development of more specific areas. Reviews private development projects and proposed capital improvements projects and other physical projects involving property for consistency and conformity with the Los Angeles County 2035 General Plan. Anticipates and acts on the need for new plans, policies, and code changes. Applies the approved plans, policies, code provisions, and other regulations to proposed land uses.
Engineers (s), Building Inspectors/Code Enforcement Officers or other professional(s), and technical staff trained in construction requirements	Los Angeles County Public Works	Oversees the effective, efficient, fair, and safe enforcement of the 2017 County of Los Angeles Building Code.
Engineers, construction project managers, and supporting technical staff	Los Angeles County Public Works	Provides direct or contract civil, structural, and mechanical engineering services, including contract, project, and construction management.
Engineer(s), project manager(s), technical staff, equipment operators, and maintenance and construction staff	Los Angeles County Public Works	Maintains and operates a wide range of local equipment and facilities and assists members of the public. This includes providing sufficient clean fresh water, reliable sewer services, street maintenance, storm drainage systems, street cleaning, street lights and traffic signals.
Floodplain Administrator	Los Angeles County Public Works	Enforces the floodplain management ordinance, ensures that new development proposals do not increase flood risk, and that development is sited and below the 100-year flood level. In addition, the floodplain administrator is responsible for planning and managing flood risk reduction projects throughout the county.
Emergency Manager	Los Angeles County Chief Executive Office - Office of Emergency Management	Maintains and updates the Los Angeles County Operational Area Emergency Response Plan for the unincorporated areas of the county. In addition, coordinates local response and relief activities in the Emergency Operation Center, and works closely with local, state, and federal partners to support planning and training and to provide information and coordinate assistance.

Table 5-1 Human and Technical Resources for Hazard Mitigation

Staff/Personnel	Department / Agency	Principal Activities Related to Hazard Mitigation
Procurement Services Manager	Internal Services Department	Provides a full range of municipal financial services, administers several licensing measures, and functions as the county's procurement services manager.
Comptroller	Los Angeles County Auditor-Controller	Provides financial services including grant financial services.
District Attorney	Los Angeles County District Attorney	Provides legal services for the county.
Fire Chief	Los Angeles County Fire Department	Provides fire protection services including response, fire prevention, and mitigation activities for the county.
Sheriff	Los Angeles County Sheriff Department	Provides law enforcement services in the county.

Table 5-2. Financial Resources for Hazard Mitigation

Type	Administrator	Purpose	Amount
Hazard Mitigation Grant Program	FEMA	Supports pre- and post-disaster mitigation plans and projects. Available to California communities after a presidentially declared disaster has occurred in California, administered by Cal OES.	Grant award based on specific projects as they are identified.
Pre-Disaster Mitigation grant program	FEMA	Supports pre-disaster mitigation plans and projects. Available on an annual basis as a nationally competitive grant, administered by Cal OES.	Grant award based on specific projects as they are identified.
Flood Mitigation Assistance grant program	FEMA	Mitigates repetitively flooded structures and infrastructure. Available on an annual basis, distributed to California communities, administered by Cal OES.	Grant award based on specific projects as they are identified.
Homeland Security Preparedness Technical Assistance Program	FEMA/DHS	Build and sustain preparedness technical assistance activities in support of the four homeland security mission areas (i.e., prevention, protection, response, recovery) and homeland security program management.	Grant award based on specific projects as they are identified.
Assistance to Firefighters Grant Program	FEMA/U.S. Fire Administration	Provides equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public from fire and related hazards. Available to fire departments and nonaffiliated emergency medical services providers.	Grant awards based on specific projects as they are identified.
Land and Water Conservation Funds	U.S. Department of the Interior	Supports the protection of federal public lands and waters and voluntary conservation on private land.	Project-specific.
Community Action for a Renewed Environment	U.S. Environmental Protection Agency (EPA)	Through financial and technical assistance offers an innovative way for a community to organize and take action to reduce toxic pollution (e.g., stormwater) in its local environment. Through this program, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them.	Grant award based on specific projects as they are identified.
Clean Water State Revolving Fund	U.S. EPA	A loan program that provides low-cost financing to eligible entities on state and tribal lands for water quality projects, including all types of non-point source, watershed protection or restoration, estuary management projects, and more traditional municipal wastewater treatment projects.	Variable.

Table 5-2. Financial Resources for Hazard Mitigation

Type	Administrator	Purpose	Amount
General Fund	Chief Executive Office	Program operations and specific projects.	Variable.
General Obligation Bonds	Los Angeles County Auditor-Controller	General obligation bonds are appropriately used for the construction and/or acquisition of improvements to real property broadly available to residents and visitors. Such facilities include but are not limited to: libraries, hospitals, parks, public safety facilities, and cultural and educational facilities.	Variable.
Special Tax and Revenue Bonds	Comptroller	Revenue bonds are used to finance capital projects that: 1) have an identified budgetary stream for repayment (e.g., specified fees, tax receipts); 2) generate project revenue but rely on a broader pledge of general fund revenues to reduce borrowing costs; or 3) finance the acquisition and installation of equipment for the local jurisdiction's general governmental purposes.	Variable.
Vegetation Management Program	Cal FIRE	Cost-sharing program between Cal FIRE and private land owners, which focuses on the use of prescribed fire, mechanical, biological, and chemical means addressing wildland fire fuel hazards and other resource management issues on SRA and LRA lands.	Project-specific.
Wildfire Emergency and Mitigation Funds	Cal FIRE	Administers funding from the FEMA, Bureau of Land Management, and U.S. Forest Service for certain types of wildfire emergency and mitigation funding.	Project-specific.
California Residential Mitigation Program	California Earthquake Authority	Created by the California Earthquake Authority and the Governor's Office of Emergency Services, Earthquake Brace + Bolt Funds to Strengthen Your Foundation is the first incentive program offered by the California Residential Mitigation Program.	Project-specific.
Public Health Emergency Preparedness Cooperative Agreement.	Center for Disease Control	Funds are intended to upgrade state and local public health jurisdictions' preparedness and response to bioterrorism, outbreaks of infectious diseases, and other public health threats and emergencies.	Grant award based on specific projects as they are identified.

Table 5-2. Financial Resources for Hazard Mitigation

Type	Administrator	Purpose	Amount
Community Block Grant Program Entitlement Communities Grants	U.S. Department of Housing and Urban Development	Acquisition of real property, relocation and demolition, rehabilitation of residential and non-residential structures, construction of public facilities, and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes.	Grant award based on specific projects as they are identified.

Table 5-3. Legal and Regulatory Resources for Hazard Mitigation

Name	Description	Hazards Addressed	Emergency Management	Potential to Affect Development
Los Angeles County 2035 General Plan (2015)	Describes hazard areas and lists goals and policies to reduce the potential risk of death, injuries, and economic damage resulting from natural and human-caused hazards.	Seismic and geotechnical, flood and inundation hazards, and fire hazards.	Mitigation, Preparedness, Response	Yes
Comprehensive Floodplain Management Plan (2016)	Reviews existing floodplain management programs in the county and recommends enhancements to them through 35 mitigation actions.	Flood	Mitigation	Yes
Los Angeles County Fire Department 2018 Strategic Fire Plan	Identifies and prioritizes pre-fire and post-fire management strategies and tactics meant to reduce the loss of values at risk in Los Angeles County.	Wildfire	Preparedness, Mitigation	Yes
Greater Los Angeles County Region Integrated Regional Water Management Plan (2014)	Identifies a comprehensive set of solutions to achieve the several objectives over the 25-year planning horizon including reducing flood risk in flood prone areas by either increasing protection or decreasing needs using integrated flood management approaches and adapting to and mitigate against climate change vulnerabilities.	Flood, Climate Change	Mitigation	Yes
Unincorporated County Community Climate Action Plan 2020 (2015)	Provides a roadmap for successfully implementing greenhouse gas reduction measures in the County. It is a component of the General Plan Air Quality Element, the Community Climate Action Plan actions are closely tied to many of the goals, policies, and programs of the General Plan, as well as to several other existing programs in the County.	Climate Change	Mitigation	Yes
County of Los Angeles Local Coastal Programs	Requires coastal cities and counties to establish coastal resource conservation and development programs.	Climate change, flood	Prevention, Mitigation	Yes
Los Angeles County Floodplain Management Ordinance	Promotes the public health, safety, and general welfare. Additionally, aims to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned land in flood prone, mudslide (i.e., mudflow) or flood related erosion areas.	Flood	Mitigation	Yes

5.2 NFIP PARTICIPATION

The NFIP aims to reduce the impact of flooding to residential and non-residential buildings. It does so by providing insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. Los Angeles County entered the NFIP in 1980, and the first Los Angeles County DFIRM was issued on December 2, 1980. The Los Angeles County Public Works enforces the county's floodplain management ordinance and participate in FEMA's Community Assisted Visits, which occur on a 3-to-5-year cycle. According to Los Angeles County Public Works, as of September 30, 2018, there are 1,553 floodplain policies in force in the unincorporated areas of Los Angeles County.

Los Angeles County also participates in the CRS program. The CRS program is a voluntary program for communities that engage in community floodplain management activities, which exceed the minimum NFIP standards. CRS communities benefit from reduced insurance rates and improved floodplain management programs. Los Angeles County is currently a Class 7 CRS community; therefore, homeowners who live in the SFHA can receive a 5 to 15 percent discount on their flood insurance policy.

5.3 MITIGATION GOALS

Mitigation goals are defined as general guidelines that explain what a community wants to achieve in terms of hazard and loss prevention. Goal statements are typically long-range, policy-oriented statements representing community-wide vision. For the 2019 AHMP, the overarching goal is for Los Angeles County to be a disaster resilient community. A disaster resilient community is able to prepare for, respond to, and recover from adverse hazards and disasters. According to laresilience.org, "in the resilience framework, less emphasis is placed on traditional, individually-focused preparedness efforts... building community resilience is really about making communities stronger."

5.4 POTENTIAL MITIGATION ACTIONS AND PROJECTS

Mitigation actions and projects help achieve the goals of the AHMP. For the 2019 AHMP, potential mitigation actions to be considered are listed below in Table 5-4 and include the following hazard mitigation categories: education and awareness; natural systems protection; structure and infrastructure projects; preparedness and response; and local plans and regulations. This list addresses every hazard profiled in this plan and is based on the plan's risk assessment as well as lessons learned from recent disasters. It was developed using FEMA success stories and best management practices; FEMA job aids; local and regional plans and reports; and input from subject matter experts and pertinent Los Angeles County departments and agencies.

Table 5-4. Potential Mitigation Actions and Projects

Red Flag Warning Public Outreach	
Project Description	Create an online and offline public outreach campaign for Red Flag Warnings. Include information about what is a Red Flag Warning; what land may be closed; and what individuals should do to be prepared as well as what activities should be avoided. Tailor outreach material to various target groups, including people experiencing homelessness, the elderly, the young, and non-English speaking residents.

Table 5-3. Legal and Regulatory Resources for Hazard Mitigation

Name	Description	Hazards Addressed	Emergency Management	Potential to Affect Development
Hillside Management Area Ordinance & Hillside Design Guidelines	Required for development in Hillside Management Areas, which are defined as areas with 25% or greater natural slopes. The guidelines include specific and measurable design techniques that can be applied to residential, commercial, industrial, and other types of projects.	Landslide	Mitigation	Yes
Los Angeles County Fuel Modification Code	Requires the review aspects such as structure location and type of construction, topography, slope, amount and arrangement of vegetation, and overall site settings for a new structure or an addition that is equal to or greater than 50% of the existing square footage. The objective of this approval plan process is to create defensible space necessary for effective fire protection of homes in the FHSZs.	Wildfire	Preparedness, Mitigation	Yes
California Fire Plan	Requires the County of Los Angeles Fire Plan Unit to implement the California Fire Plan, a statewide framework for minimizing costs and losses from wildland fires. The Fire Plan Unit uses a GIS Platform to identify high hazard/high value areas and communities at risk in the wildland-urban interface.	Wildfire	Preparedness, Mitigation	Yes
Los Angeles County Brush Clearance Program	Legally declares both improved and unimproved properties a public nuisance and where necessary, requires the clearance of hazardous vegetation. These measures create "Defensible Space" for effective fire protection of property, life, and the environment. The Brush Clearance Program is a joint effort between the County of Los Angeles Fire Department and the County of Los Angeles Department of Agricultural Commissioner Weights and Measures, Weed Hazard, and Pest Abatement Bureau (Weed Abatement Division).	Wildfire	Mitigation	No

Table 5-4. Potential Mitigation Actions and Projects

Type of Project	Education and Awareness Programs
Hazard(s) Mitigated	Wildfire
Project Source	Red Flag Working Group, LA County Homeless Initiatives
Pros	Education can help reduce the risk of human-caused fires Public outreach is generally low-cost Public outreach to homeless individuals can help build rapport with county agencies
Cons	Maybe difficult to reach some target groups
Vegetation Management Program	
Project Description	Continue to implement the County's Vegetation Management Program. The Los Angeles County Fire Department Vegetation Management Unit works closely with the Fire Plan Unit and the Air and Wildland Division's Prescribed Fire Office to implement projects. The Vegetation Management Unit provides the State and County with required paperwork for prescribed burning, mechanical, biological and chemical treatment methods used in project areas.
Type of Project	Natural Systems Protection
Hazard(s) Mitigated	Wildfire
Project Source	Los Angeles County Fire Department
Pros	Program has been implemented in Los Angeles County for the last 40 years and are generally cost effective Can be used selectively to treat the most vulnerable areas
Cons	Often requires ongoing maintenance Can cause soil disturbance and increase sedimentation and erosion Prescribed fire and chemical application methods require close supervision
Fireproof Coating of Critical Assets	
Project Description	Fireproof coat critical facilities in Very High FHSZs which will allow structures to extend their strength in the event of a fire.
Type of Project	Structure and Infrastructure Projects
Hazard(s) Mitigated	Wildfire
Project Source	Los Angeles County Public Works
Pros	Generally cost-effective and non-toxic
Cons	None
Auxiliary Power for Critical Facilities	
Project Description	Determine which critical facilities need and do not have auxiliary power in order to remain functional during de-energization or "Public Safety Power Shut-Offs," and/or general loss of power and install auxiliary power systems. Auxiliary power systems may include back-up generators, local Solar Photovoltaic plus storage, and microgrids.
Type of Project	Structure and Infrastructure Projects
Hazard(s) Mitigated	Wildfire specifically, but also applies to all hazards

Table 5-4. Potential Mitigation Actions and Projects

Project Source	Los Angeles County Public Works
Pros	Provides emergency power to keep critical facilities operational and functional
Cons	Diesel generators can be expensive to operate and contribute to air pollution
Earthquake-Resistant Ductile Iron Pipes Replacement	
Project Description	Continue to replace aging critical pipes in extreme or violent shaking hazard areas and Class IX and X landslide hazard areas to improve seismic reliability/safeguard critical water distribution lines against the potential destructive impacts of large-scale earthquakes and accompanying landslides. Los Angeles County Public Works completed its "first earthquake-resistant ductile iron pipe replacement pilot program in 2013.
Type of Project	Structural and Infrastructure Projects
Hazard(s) Mitigated	Landslides, Earthquakes
Project Source	Los Angeles County Public Works
Pros	Improves water reliability Restores those without service more rapidly
Cons	None
Watershed Ecosystem Restoration	
Project Description	Modernize existing flood control retention facilities to improve flood protection, water quality and ecological health. Potential projects include: Arroyo Seco and Compton Creek.
Type of Project	Natural Systems Protection
Hazard(s) Mitigated	Climate Change, Flood, Tsunami
Project Source	County of Los Angeles Repetitive Property Loss Area Analysis Progress Report (2017 - 2018), OurWaterLA
Pros	Reduces the risk of flooding to the surrounding neighborhoods Provides new recreational space and safety amenities
Cons	Additional studies needed to determine best approaches
Green Streets	
Project Description	Implement the Green Street Master Plan with the goal of identifying 110 feasible sites. A green street is a stormwater management approach that incorporates vegetation, soil and engineered systems (e.g., permeable pavements) to slow, filter, and cleanse stormwater runoff from impervious surfaces. In addition to the traditional green street approach, incorporate "complete streets" design strategies to provide more room for emergency response vehicles and create defensible space in plaza areas and around buildings.
Type of Project	Natural Systems Protection, Preparedness and Response
Hazard(s) Mitigated	Stormwater/Flood, Climate Change
Project Source	Los Angeles County Public Works, U.S. EPA
Pros	Protects water quality in rivers and streams by removing pollutants

Table 5-4. Potential Mitigation Actions and Projects

	Replenishes groundwater supplies Absorbs carbon Improves air quality and neighborhood aesthetics Improves pedestrian and bicycle safety
Cons	Requires selected site suitability to do utility conflicts, and geotechnical and environmental characteristics
Coordinated Data Collection and Database Systems	
Project Description	Create coordinated data collection and database system in which intake and assessment information can be entered in real time and can support multiple users at the same time. Components can include critical facilities and vulnerable populations.
Type of Project	Preparedness and Response
Hazard(s) Mitigated	All hazards
Project Source	Los Angeles County OEM
Pros	Coordinated systems
Cons	Different data collection needs may require parallel databases
Brush Clearance Program	
Project Description	Expand the County's Brush Clearance Program to include a grant fundable mitigation component for qualified low-income and/or elderly homeowners that have properties that are found to be non-compliant. Instead of warning property owners and imposing infractions for inadequate fire hazard reduction, Los Angeles County will work with the homeowner to develop and implement a fire reduction plan.
Type of Project	Natural Systems Protection, Preparedness and Response
Hazard(s) Mitigated	Wildfire
Project Source	Los Angeles County Fire Department
Pros	Proactive, not reactive approach to working with homeowners to reducing wildfire fuel hazards
Cons	Often requires ongoing maintenance
Wildland Urban-Interface Ordinance	
Project Description	Codifying development standards to guide development in the WUI areas that face a severe threat of wildfires.
Type of Project	Local Plans and Regulations
Hazard(s) Mitigated	Wildfire
Project Source	Draft Safety Element Update for Los Angeles County 2035 General Plan, Los Angeles County Sustainability Plan
Pros	Additional review of development in WUIs will enable best practices are incorporated in the project design.
Cons	Additional regulations may be perceived as too burdensome by property owners.

Table 5-4. Potential Mitigation Actions and Projects

Urban Forest Management Plan	
Project Description	Create Urban Forest Management Plan for Los Angeles County with a well-defined scope that includes a comprehensive tree inventory, assessment of tree health, identification of shade-poor neighborhoods, cost-benefit analysis of tree vs shade-structure interventions, urban forest financing plan, and a plan for sustainable management.
Type of Project	Local Plans and Regulations
Hazard(s) Mitigated	Climate Change, Drought
Project Source	Los Angeles County Sustainability Plan (Los Angeles County Chief Sustainability Office), A Greater L.A. Climate Action Framework (L.A. Regional Collaborative for Climate Action and Sustainability, and Los Angeles County 2035 General Plan
Pros	Extreme heat is the greatest health threat to Los Angeles County residents. Providing shade will help mitigate the effects of extreme heat in disadvantaged neighborhoods. Residents from these communities may not have private vehicles and encounter problems traveling to cooling centers; they may also have limited access to air conditioning.
Cons	The inability of residents to pay for water to establish newly planted trees may hinder the establishment of an urban forest. County-wide water conservation measures during times of drought may also conflict with efforts to establish and maintain an urban forest. In such situations, shade structures may fulfill the same needs.
Community Wildfire Protection Plans	
Project Description	Continue to work with communities to develop Community Wildfire Protection Plans (CWPP). CWPPs enable communities to plan how they will reduce the risk of wildfire by identifying strategic sites and methods for fuel reduction projects across the landscape and jurisdictional boundaries.
Type of Project	Local Plans and Regulations
Hazard(s) Mitigated	Wildfire
Project Source	Los Angeles County Fire Department 2018 Strategic Fire Plan
Pros	Opportunity to establish a localized definition and boundary for the WUI. Priority funding is often given to projects and treatment areas identified in a CWPP.
Cons	May be difficult to get collaboration from stakeholders.

5.5 MITIGATION ACTION PLANS

A mitigation action plan is a prioritized list of proposed mitigation projects and actions that a community hopes to implement to reduce its' risks and vulnerabilities. The 2019 AHMP mitigation action plan, as shown in **Table 5-5 and Table 5-6**, is prioritized into Tier 1 and Tier 2 activities:

- Tier 1 activities are essential to remedy or prevent a major health/safety hazard. They meet FEMA HMA grant criteria, including project eligibility, benefit-cost, and performance period.
- Tier 2 activities are important in building a culture and practice of disaster resilience that will prevent new risks. They do not necessarily require and/or meet FEMA HMA grant criteria (but may qualify for other state and federal funds).

Table 5-5. Tier 1 Mitigation Action Plan

Project Name	Implementation Details
Red Flag Warning Public Outreach	Department/Agency: LAHSA, Los Angeles County OEM, Los Angeles County Fire Department, and Los Angeles County Sheriff's Department Potential Funding Source: FEMA grants Performance Period: 6 months development, implementation prior to every summer/fall
Vegetation Management Program	Department/Agency: Los Angeles County Fire Department Potential Funding Source: Cal FIRE, FEMA grants Performance Period: Ongoing
Fireproof Coating of Critical Facilities	Department/Agency: Los Angeles County Public Works, Los Angeles County Fire Department Potential Funding Source: Cal FIRE, FEMA grants Performance Period: 1-3 years
Auxiliary Power for Critical Facilities	Department/Agency: Los Angeles County Public Works Potential Funding Source: FEMA grants Performance Period: Ongoing
Earthquake-Resistant Ductile Iron Pipes Replacement	Department/Agency: Los Angeles County Public Works Potential Funding Source: FEMA grants Performance Period: Ongoing
Brush Clearance Program	Department/Agency: Los Angeles County Fire Department Potential Funding Source: Cal FIRE, FEMA grants Performance Period: Ongoing
Community Wildfire Protection Plans	Department / Agency: Los Angeles County Fire Department Potential Funding Source: Cal FIRE, FEMA grants Performance Period: Ongoing

Table 5-6. Tier 2 Mitigation Action Plan

Project Name	Implementation Details
Watershed Ecosystem Restoration	Department/Agency: Los Angeles County Public Works Potential Funding Source: U.S. EPA, U.S. Department of Interior grants Performance Period: 3-5 years
Green Streets	Department/Agency: Los Angeles County Public Works Potential Funding Source: U.S. EPA grants Performance Period: 3-5 years
Coordinated Data Collection & Database Systems	Department/Agency: Los Angeles County OEM Potential Funding Source: County funds Performance Period: 1-2 years, Ongoing
Wildland Urban-Interface Ordinance	Department/Agency: Los Angeles County Department of Regional Planning, Los Angeles County Fire Department Potential Funding Source: County funds Performance Period: 6 months – 1 year
Urban Forest Management Plan	Department/Agency: Los Angeles County Department of Regional Planning, Los Angeles County Fire Department Potential Funding Source: County funds Performance Period: 1-2 years

5.6 PLAN INTEGRATION

The AHMP project manager will be the lead in working with Los Angeles County departments and agencies to ensure that elements of the 2019 AHMP are incorporated into other relevant county planning documents as they are created or updated.

As such, the AHMP project manager will work with:

- The Los Angeles County Public Works to incorporate the flood risk assessment and flood mitigation actions into the county's Comprehensive Floodplain Management Plan. The Comprehensive Floodplain Management Plan is currently being updated and is expected to be completed in 2021.
- The Los Angeles County Department of Regional Planning to ensure that the 2019 AHMP's hazard profiles and mitigation projects and actions align with those addressed in the General Plan's Safety Element. The Safety Element is currently being updated and is expected to be completed in 2021.
- The Los Angeles County OEM to ensure that the hazard profiles are included in the Los Angeles County Threat and Hazard Identification Risk Assessment and the Los Angeles County Operational Area Emergency Response Plans and Annexes as they are updated.

6 PLAN REVIEW, EVALUATION, AND IMPLEMENTATION

Section 4 – Plan Review, Evaluation, and Implementation addresses Element D of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans	
Element D: Plan Review, Evaluation, and Implementation	
D1. Was the plan revised to reflect changes in development? (Requirement § 201.6(d)(3))	
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement § 201.6(d)(3))	
D3. Was the plan revised to reflect changes in priorities? (Requirement § 201.6(d)(3))	

6.1 CHANGES IN DEVELOPMENT

As noted in Section 3.2, the slowing population growth is in part due to the lack of housing. Most economists agree that building new housing is key to addressing the state’s housing crisis. During the drafting of the 2019 AHMP, nearly 28,000 units were under construction in Los Angeles County. In the city of Los Angeles, developers have targeted properties in older neighborhoods, rather than undeveloped land in the city’s outskirts. However, as the State of California pushes for greater growth in order to meet the governor’s goal of 3.5 million new units by 2025, there is growing concern that without land-use restrictions, new development will occur in fire-prone and other hazard areas of the county. These concerns are addressed within the 2019 AHMP mitigation strategy.

6.2 PROGRESS IN LOCAL MITIGATION EFFORTS

The 2014 AHMP Mitigation Actions Matrix was reviewed by each of the coordinating agencies identified on the matrix in order to determine mitigation action status. Mitigation actions that were identified as not having been implemented or deferred were considered for Table 5-4. Mitigation actions that were identified as completed are shown in Table 6-1.

In addition, the consultant reviewed the County of Los Angeles Floodplain Management Plan 2018 Progress Report to determine mitigation action status. Flood mitigation actions that were listed as “no progress” were considered for Table 5-4. Relevant flood mitigation actions that were listed as “project complete” are shown in Table 6-1.

Table 6-1. Completed Local Mitigation Efforts

Coordinating Agency	Project Description
Los Angeles County Department of Coroner	Purchased equipment to set up an off-site mobile morgue. This equipment was incorporated into the business continuity plan in case the main facility is unusable and would help to avoid unnecessary exposure of employees or the public to biological, radiological, or chemical agents.
Los Angeles County Department of Regional Planning	Updated building codes on January 1, 2017.

Table 6-1. Completed Local Mitigation Efforts

Coordinating Agency	Project Description
Los Angeles County Public Works	Continue the seismic upgrade to improve water reliability through earthquake-resistant pipe installation. The work took place on Reseda Boulevard from Roscoe to Strathern; Erivanda Avenue from Roscoe to Strathern; Cantara Street from Reseda to Erivanda; and Strathern Street from Reseda to Erivanda.
Los Angeles County Public Works	In October 2017, the Los Angeles County Public Works mailed 3,551 copies of “Are You Prepared for A Flood?” brochure to property owners and residents in Special Flood Hazard Areas, County Floodways, and possible gaps in floodplain mapping (i.e., areas with possible flood hazards that are not on FEMA or County maps). The County of Los Angeles’ National Flood Insurance Program (NFIP) website links were checked and updated. Previously, brochures were distributed to the Malibu, Rosemead, and Castaic Public Libraries. Brochures were distributed to additional public libraries closer to the floodplains including Topanga, Altadena, Duarte, and San Dimas.
Los Angeles County Public Works	In addition to the outreach efforts mentioned in Initiative No. 1 above, the Los Angeles County Public Works mailed 226 copies of CDs containing County of Los Angeles and FEMA publications to all property owners and residents in RL properties and properties in the RL areas.
Los Angeles County Public Works	In December 2017, the Los Angeles County Public Works mailed a letter and outreach materials to owners of critical facilities located in FEMA’s-designated Special Flood Hazard Areas. Critical facilities that received outreach materials include schools, hospitals, fire stations, and health care facilities.
Los Angeles County Public Works	County of Los Angeles Office of Emergency Management, Fire Department, Sheriff’s Department, and Public Works’ Disaster Service Group participated in emergency preparedness events such as Los Angeles County’s Preparation throughout this reporting period. Participants at the fair provided attendees with information and resources for preparation, such as the “Are You Prepared for a Flood?”; “ALERT LA COUNTY” brochure; “Homeowner’s Guide for Flood, Debris, and Erosion Control;” and the “Emergency Survival Guide.”

6.3 CHANGES IN PRIORITIES

The 2014 AHMP’s Mitigation Action Matrix was prioritized using a number ranking system to determine a project’s priority. For the 2019 AHMP, mitigation actions were prioritized into two separate groups, which both helped achieve meeting the goal of disaster resiliency. As noted in Section 5.3, resilient communities are able to minimize any disaster, making the return to normal life as soon and as effortless as possible. As such, the first part (i.e., first priority) of this goal is to ensure that life-safety needs are addressed as soon as possible. The second part (i.e., second priority) is to implement plans, policies, and programs to reduce current risks and prevent new/future ones.

7 PLAN ADOPTION

Section 6 – Plan Adoption addresses Element E of the Local Mitigation Plan Regulation Checklist.

Element E: Plan Adoption
<p>Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans</p> <p>E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))</p> <p>E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))</p>

7.1 FORMAL ADOPTION

[To be completed] The 2019 AHMP was formally adopted by the Los Angeles County Board of Supervisors via resolution on [To be completed]. A scanned copy of the resolution is included as **Figure 7-2**. It will also be kept on file with Los Angeles County OEM and additional be sent to Cal OES and FEMA.

ADOPTION RESOLUTION

APPENDIX A – PLANNING PROCESS

From: Stephanie Kim
Sent: Tuesday, August 20, 2019 2:44 PM
To: XXX@monosheriff.org; XXX@ocsd.org; XXX@rivco.org; XXX@ontarioca.gov; XXX@inyocounty.us; XXX@co.imperial.ca.us; XXX@laquintaca.gov; XXX@sboem.org; XXX@mono.ca.gov; XXX@lcf.ca.gov; XXX@sa.ocgov.com; XXX@rivco.org; XXX@cbctv.org; XXX@inyocounty.us; XXX@cityofbishop.com; XXX@sandiego.gov; XXX@rivco.org; XXX@octa.net; XXX@sbcsl.org; XXX@sandiego.gov; XXX@octa.net; XXX@roee.us; XXX@dgs.ca.gov; XXX@sbcsl.org; XXX@lawa.org; XXX@rivco.org; XXX@lausd.net; XXX@inyocounty.us; XXX@octa.net; XXX@ranchomirageca.gov; XXX@rivco.org; XXX@inyocounty.us; XXX@sbcsl.edu; XXX@morongo-nsn.gov; XXX@noaa.gov; XXX@cityoffredlands.org; XXX@morongo-nsn.gov; XXX@coachella.org; XXX@ocsd.org; XXX@sbcsl.org; XXX@cityofredlands.org; XXX@morongo-santabarbara.gov; XXX@imwdh2o.com; XXX@sbcsl.org; XXX@kerncountyfire.org; XXX@ceooem.lacounty.gov
Cc: XXX@ceooem.lacounty.gov
Subject: Los Angeles County Hazard Mitigation Plan Update

Dear Stakeholders,

We are reaching out to let you know that the Los Angeles County Office of Emergency Management is in the process of updating its' All-Hazards Mitigation Plan. I'm attaching our public outreach flyer for your information. We will send out an additional email when our draft plan goes out to public comment later this fall. If you have any questions or would like to be part of the plan update process, please contact me!

Emily Montanez

emontanez@ceooem.lacounty.gov

(323) 980-2813

Stephanie Kim
Academic Intern
LA County CEO Office of Emergency Management

2019 County of Los Angeles All-Hazards Mitigation Plan



The Los Angeles County Office of Emergency Management is updating the County's All-Hazards Mitigation Plan! Over the next few months, we will re-assess risks posed by natural disasters and review and revise existing strategies as well as develop new ones to protect life and property future events.

Natural disasters addressed in our plan include: climate change, dam failure, drought, flood, earthquake, landslide, tsunami, and wildfire.

Once our plan is completed and approved by FEMA, the County will be re-eligible to apply for and receive certain types of non-emergency disaster assistance, including funding for mitigation projects identified in our plan.

To learn more about hazard mitigation planning, please visit: <https://www.fema.gov/hazard-mitigation-planning>.

To learn more about our plan and/or participate in our planning process, please visit our website lacounty.gov/emergency or our Twitter account [@ReadyLACounty](https://twitter.com/ReadyLACounty).



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Plan de Mitigación para Todos los Peligros del Condado de Los Ángeles 2019



¡La Oficina de Manejo de Emergencias del Condado de Los Ángeles está actualizando el Plan de Mitigación para Todos los Peligros del Condado! En los próximos meses, reevaluaremos los riesgos debidos a los desastres naturales y repararemos y revisaremos las estrategias existentes, y también desarrollaremos otras nuevas para proteger vidas y propiedades antes de que ocurran incidentes futuros.

Los riesgos discutidos en nuestro plan incluyen: cambios climáticos, falla de presas, sequías, inundaciones, terremotos, deslizamientos de tierra, tsunami e incendios forestales.

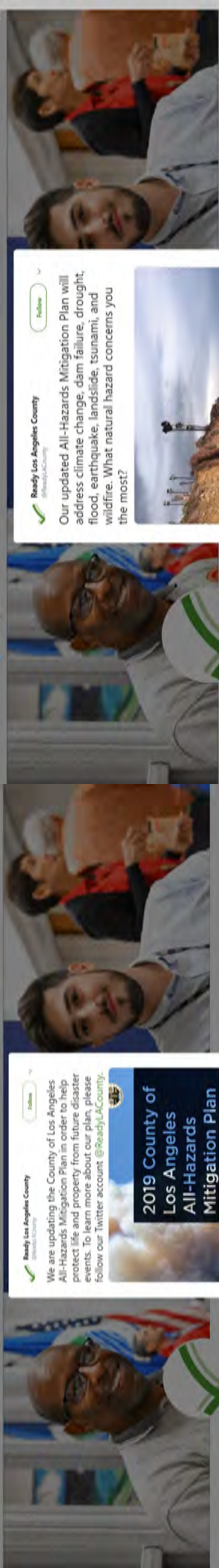
Una vez que FEMA complete y apruebe nuestro plan, el Condado volverá a ser elegible para solicitar y recibir ciertos tipos de asistencia por desastre que no sea de emergencia, incluyendo la financiación para proyectos de mitigación identificados en nuestro plan.

Para obtener más información sobre la planificación de mitigación de riesgos, por favor visite: <https://www.fema.gov/hazard-mitigation-planning>.

Para obtener más información sobre nuestro plan / o participar en nuestro proceso de planificación, visite nuestro sitio web lacounty.gov/emergency o nuestra cuenta de Twitter [@ReadyLACounty](https://twitter.com/ReadyLACounty).



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Ready Los Angeles County
We are updating the County of Los Angeles All-Hazards Mitigation Plan in order to help protect life and property from future disaster events. To learn more about our plan, please follow our Twitter account @ReadyLACounty.

2019 County of Los Angeles All-Hazards Mitigation Plan
Our Future is Bright. Our Progress is Greater.

October 14 Aug 2019
2 Retweets 4 Likes

Ready Los Angeles County
Critical Account of the Los Angeles County Office of Emergency Management, Planning & Preparedness. For more information, please visit www.readyla.com.

Ready Los Angeles County
Our updated All-Hazards Mitigation Plan will address climate change, dam failure, drought, flood, earthquake, landslide, tsunami, and wildfire. What natural hazard concerns you the most?

11:36 AM - 21 Aug 2019
2 Retweets 8 Likes

Ready Los Angeles County
Critical Account of the Los Angeles County Office of Emergency Management, Planning & Preparedness. For more information, please visit www.readyla.com.

Tweet

Ready Los Angeles County @ReadyLACounty

A hazard mitigation plan is required to be eligible for certain types of disaster assistance. To learn more about hazard mitigation planning, please visit: fema.gov/hazard-mitigat...



Local Mitigation Planning Handbook
March 2013
FEMA

2019 AHMP - Annual Review Worksheet				
HMP Section	Questions	Yes	No	Comments
PLANNING PROCESS	Has your County department/agency (or other type of organization) done any public outreach activities regarding the AHMP or a mitigation project? If yes, please describe.			
	Has your County department/agency (or other type of organization) integrated any of the AHMP's elements into other plans or policies? If yes, please describe.			
HAZARD IDENTIFICATION	Has a disaster occurred in this reporting period that affected your department/agency (or other type of organization)?			
	Do you know of new hazard studies, reports and/or mapping available for Los Angeles County? If so, what are they?			
RISK ASSESSMENT	Does your County department/agency have any new critical assets that should be included in the 2024 AHMP risk assessment?			
	Have there been changes in development trends that could create additional risks?			
MITIGATION STRATEGY	Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?			
	Should new mitigation actions be added?			

2019 AHMP - Annual Review Worksheet				
HMP Section	Questions	Yes	No	Comments
PLANNING PROCESS	Has your County department/agency (or other type of organization) done any public outreach activities regarding the AHMP or a mitigation project? If yes, please describe.			
	Has your County department/agency (or other type of organization) integrated any of the AHMP's elements into other plans or policies? If yes, please describe.			
HAZARD IDENTIFICATION	Has a disaster occurred in this reporting period that affected your department/agency (or other type of organization)?			
	Do you know of new hazard studies, reports and/or mapping available for Los Angeles County? If so, what are they?			
RISK ASSESSMENT	Does your County department/agency have any new critical assets that should be included in the 2024 AHMP risk assessment?			
	Have there been changes in development trends that could create additional risks?			
MITIGATION STRATEGY	Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?			
	Should new mitigation actions be added?			

2019 AHMP - Mitigation Project Progress Report	
Progress Report Period From (date):	To (date):
Project Title:	
Project ID:	
Description of Project:	
Implementing Department/Agency:	
Supporting Department/Agencies:	
Contact Name:	
Contact Email:	
Contact Number:	
Grant/Finance Administrator:	
Total Project Cost:	
Anticipated Cost Overrun/Underrun:	
Date of Project Approval:	
Project Start Date:	
Anticipated Completion Date:	
Summary of Progress of Project for this Reporting Period	
1. What was accomplished during this reporting period?	
2. What obstacles, problems, or delays did the project encounter, if any?	
3. How were the problems resolved?	

APPENDIX B – COMMUNITY PROFILE

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Animal Care & Control	Agoura Animal Care Center
Animal Care & Control	Baldwin Park Animal Care Center
Animal Care & Control	Carson Animal Care Center
Animal Care & Control	Castaic Animal Care Center (Castaic)
Animal Care & Control	Downey Animal Care Center
Animal Care & Control	Lancaster County Animal Care Center
Animal Care & Control	Palmdale Animal Care Center
Fire Department	Bob Hope Airport Fire Department
Fire Department	City of Alhambra Fire Department - Training Facility
Fire Department	City of Alhambra Fire Department Station 71 - Headquarters
Fire Department	City of Alhambra Fire Department Station 72 - Southeast District
Fire Department	City of Alhambra Fire Department Station 73 - Northwest
Fire Department	City of Alhambra Fire Department Station 74 - Southwest
Fire Department	City of Arcadia Fire Department Station 105
Fire Department	City of Arcadia Fire Department Station 106 - Headquarters
Fire Department	City of Arcadia Fire Department Station 107
Fire Department	City of Avalon Fire Department
Fire Department	City of Beverly Hills Fire Department Station 1 - Headquarters
Fire Department	City of Beverly Hills Fire Department Station 2
Fire Department	City of Beverly Hills Fire Department Station 3
Fire Department	City of Burbank Fire Department Station 11 - Headquarters
Fire Department	City of Burbank Fire Department Station 12
Fire Department	City of Burbank Fire Department Station 13
Fire Department	City of Burbank Fire Department Station 14
Fire Department	City of Burbank Fire Department Station 15
Fire Department	City of Burbank Fire Department Station 16
Fire Department	City of Compton Fire Department Station 1 - Headquarters
Fire Department	City of Compton Fire Department Station 2
Fire Department	City of Compton Fire Department Station 3
Fire Department	City of Compton Fire Department Station 4
Fire Department	City of Downey Fire Department Station 1 - Headquarters
Fire Department	City of Downey Fire Department Station 2
Fire Department	City of Downey Fire Department Station 3
Fire Department	City of Downey Fire Department Station 4
Fire Department	City of Glendale Fire Department Station 21
Fire Department	City of Glendale Fire Department Station 22
Fire Department	City of Glendale Fire Department Station 23
Fire Department	City of Glendale Fire Department Station 24
Fire Department	City of Glendale Fire Department Station 25
Fire Department	City of Glendale Fire Department Station 26
Fire Department	City of Glendale Fire Department Station 27
Fire Department	City of Glendale Fire Department Station 28
Fire Department	City of Long Beach Fire Department - Beach Operations
Fire Department	City of Long Beach Fire Department - Headquarters
Fire Department	City of Long Beach Fire Department Station 1
Fire Department	City of Long Beach Fire Department Station 10
Fire Department	City of Long Beach Fire Department Station 11
Fire Department	City of Long Beach Fire Department Station 12
Fire Department	City of Long Beach Fire Department Station 13
Fire Department	City of Long Beach Fire Department Station 14
Fire Department	City of Long Beach Fire Department Station 15
Fire Department	City of Long Beach Fire Department Station 16
Fire Department	City of Long Beach Fire Department Station 17
Fire Department	City of Long Beach Fire Department Station 18
Fire Department	City of Long Beach Fire Department Station 19

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Fire Department	Los Angeles County Fire Department Station 62
Fire Department	Los Angeles County Fire Department Station 63
Fire Department	Los Angeles County Fire Department Station 64
Fire Department	Los Angeles County Fire Department Station 65
Fire Department	Los Angeles County Fire Department Station 66
Fire Department	Los Angeles County Fire Department Station 67
Fire Department	Los Angeles County Fire Department Station 68
Fire Department	Los Angeles County Fire Department Station 69
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Fire Department	Los Angeles County Fire Department Station 88
Fire Department	Los Angeles County Fire Department Station 89
Fire Department	Los Angeles County Fire Department Station 90
Fire Department	Los Angeles County Fire Department Station 91
Fire Department	Los Angeles County Fire Department Station 92
Fire Department	Los Angeles County Fire Department Station 94
Fire Department	Los Angeles County Fire Department Station 95
Fire Department	Los Angeles County Fire Department Station 96
Fire Department	Los Angeles County Fire Department Station 97
Fire Department	Los Angeles County Fire Department Station 98
Fire Department	Los Angeles County Fire Department Station 99
Fire Department	Manhattan Beach Fire Department Station 1 - Headquarters
Fire Department	Manhattan Beach Fire Department Station 2
Fire Department	Montebello Fire Department Station 1 - Headquarters
Fire Department	Montebello Fire Department Station 2
Fire Department	Montebello Fire Department Station 3
Fire Department	Montebello Fire Department Station 31
Fire Department	Pasadena Fire Department Station 32
Fire Department	Pasadena Fire Department Station 33
Fire Department	Pasadena Fire Department Station 34
Fire Department	Pasadena Fire Department Station 36
Fire Department	Pasadena Fire Department Station 37
Fire Department	Pasadena Fire Department Station 38
Fire Department	Pasadena Fire Department Station 39
Fire Department	Redondo Beach Fire Department Station 1 - Headquarters
Fire Department	Redondo Beach Fire Department Station 2
Fire Department	Redondo Beach Fire Department Station 3

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Fire Department	San Gabriel Fire Department Station 1 - Headquarters
Fire Department	San Gabriel Fire Department Station 2
Fire Department	San Marino Fire Department
Fire Department	Sierra Madre Volunteer Fire Department
Fire Department	South Pasadena Fire Department
Fire Department	The City of El Segundo Fire Department Station 1 - Headquarters
Fire Department	The City of El Segundo Fire Department Station 2
Fire Department	Torrance Fire Department Fire Station 1 - Headquarters
Fire Department	Torrance Fire Department Fire Station 2
Fire Department	Torrance Fire Department Fire Station 3
Fire Department	Torrance Fire Department Fire Station 4
Fire Department	Torrance Fire Department Fire Station 5
Fire Department	Torrance Fire Department Fire Station 6
Fire Department	Vernon Fire Department
Health Services	Antelope Valley Health Center
Health Services	Bellflower Health Center
Health Services	Central Public Health Center
Health Services	Curtis R. Tuckler Health Center
Health Services	Dollarhide Health Center
Health Services	East Los Angeles Health Center
Health Services	East San Gabriel Valley Health Center
Health Services	Edward R. Roybal Comprehensive Health Center
Health Services	El Monte Comprehensive Health Center
Health Services	Glendale Health Center
Health Services	H. Claude Hudson Comprehensive Health Center
Health Services	Harbor-UCLA Medical Center
Health Services	High Desert Regional Health Center
Health Services	Hubert H. Humphrey Comprehensive Health Center
Health Services	La Piente Health Center
Health Services	LAC + USC Medical Center
Health Services	Lake Los Angeles Community Clinic
Health Services	Littlerock Community Clinic
Health Services	Long Beach Comprehensive Health Center
Health Services	Martin Luther King, Jr. Outpatient Center
Health Services	Mid Valley Comprehensive Health Center
Health Services	Olive View-UCLA Medical Center
Health Services	Rancho Los Amigos National Rehabilitation Center
Health Services	San Fernando Health Center
Health Services	South Valley Health Center
Health Services	Torrance Health Center
Health Services	Vaughn School Based Health Center
Health Services	West Valley Health Center
Health Services	Wilmington Health Center
Library	A C Bilbrew Library
Library	Acton Agua Dulce Library
Library	Aroura Hills Library
Library	Alondra Library
Library	Angelo M. Iacoboni Library
Library	Anthony Quinn Library
Library	Artesia Library
Library	Avon Library
Library	Baldwin Park Library
Library	Bell Gardens Library
Library	Bell Library
Library	Carson Library

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Library	Castaic Library
Library	Charter Oak Library
Library	Chet Holifield Library
Library	City Terrace Library
Library	Cienmont Helen Renwick Library
Library	Clifton M. Brakensiek Library
Library	Compton Library
Library	Cudahy Library
Library	Culver City Julian Dixon Library
Library	Diamond Bar Library
Library	Dr. Martin Luther King, Jr. Library
Library	Duarte Library
Library	East Los Angeles Library
Library	East Rancho Dominguez Library
Library	El Camino Real Library
Library	El Monte Library
Library	Florence Express Library
Library	Gardena Mayme Dear Library
Library	George Nye Jr. Library
Library	Graham Library
Library	Hacienda Heights Library
Library	Hawaiian Gardens Library
Library	Hawthorne Library
Library	Hermosa Beach Library
Library	Holladay Library
Library	Huntington Park Library
Library	La Canada Flintridge Library
Library	La Crescenta Library
Library	La Mirada Library
Library	La Puente Library
Library	La Verne Library
Library	Lake Los Angeles Library
Library	Lancaster Library
Library	Lawndale Library
Library	Leiland R. Weaver Library
Library	Lennox Library
Library	Littlerock Library
Library	Live Oak Library
Library	Lloyd Taber-Marmas del Rey Library
Library	Lomita Library
Library	Los Nietos Library
Library	Lynwood Library
Library	Malibu Library
Library	Manhattan Beach Library
Library	Masato W. Satow Library
Library	Maywood Cesar Chavez Library
Library	Montebello Library
Library	Norwalk Library
Library	Norwood Library
Library	Paramount Library
Library	Pico Rivera Library
Library	Quartz Hill Library
Library	Rivera Library
Library	Rosemead Library
Library	Rowland Heights Library

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Library	San Dimas Library
Library	San Fernando Library
Library	San Gabriel Library
Library	Sorensen Library
Library	South El Monte Library
Library	South Whittier Library
Library	Stevenson Ranch Library
Library	Stunkist Library
Library	Temple City Library
Library	Topanga Library
Library	View Park Bebe Moore Campbell Library
Library	Walnut Library
Library	West Covina Library
Library	West Hollywood Library
Library	Westlake Village Library
Library	Willowbrook Library
Library	Wiseburn Library
Library	Woodcrest Library
Library	La Brea Tarpits
Los Angeles County Museum of Arts & Museum of Natural History	Los Angeles County Museum of Art
Los Angeles County Museum of Arts & Museum of Natural History	Natural History Museum
Los Angeles County Museum of Arts & Museum of Natural History	William S. Hart Museum
Office of Education	Aflerbaugh-Paige Camp
Office of Education	Alma Fuerte Public
Office of Education	Animo City of Champions Charter High
Office of Education	Aspire Antonio Maria Lugo Academy
Office of Education	Aspire Olin University Preparatory Academy
Office of Education	Central Juvenile Hall
Office of Education	Da Vinci RISE High
Office of Education	Environmental Charter Middle
Office of Education	Intellectual Virtues Academy
Office of Education	International Polytechnic High
Office of Education	Jardin de la Infancia
Office of Education	Kirby, Dorothy Camp
Office of Education	L.A. County High School for the Arts
Office of Education	LA's Promise Charter High #1
Office of Education	LA's Promise Charter Middle #1
Office of Education	Lashon Academy
Office of Education	Los Angeles County Special Education
Office of Education	Los Angeles International Charter High
Office of Education	Los Padrinos Juvenile Hall
Office of Education	Magnolia Science Academy
Office of Education	Magnolia Science Academy 2
Office of Education	Magnolia Science Academy 3
Office of Education	Magnolia Science Academy 5
Office of Education	McNair Camp
Office of Education	Nidorf, Barry J.
Office of Education	North Valley Military Institute College Preparatory Academy
Office of Education	Odyssey Charter
Office of Education	Onizuka Camp

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Office of Education	Optimist Charter
Office of Education	Phoenix Academy Residential Education Center
Office of Education	Renaissance County Community
Office of Education	Road to Success Academy at Campus Kilpatrick
Office of Education	Rockey, Glenn Camp
Office of Education	Scott, Joseph Camp
Office of Education	Soleil Academy Charter
Office of Education	Valente College Preparatory Charter
Other (Office)	1000 S. Fremont Ave.
Other (Office)	1055 Wilshire Blvd.
Other (Office)	1100 North Eastern Ave.
Other (Office)	1104 N. Mission Rd.
Other (Office)	12300 Lower Azusa Rd.
Other (Office)	12400 Imperial Highway
Other (Office)	12860 Crossroads Parkway South
Other (Office)	1320 North Eastern Ave.
Other (Office)	13837 Fiji Way
Other (Office)	1816 S. Figueroa
Other (Office)	210 W. Temple St.
Other (Office)	211 W. Temple St.
Other (Office)	313 N Figueroa St.
Other (Office)	3175 West Sixth St.
Other (Office)	320 West Temple St.
Other (Office)	425 Shatto Place
Other (Office)	550 South Vermont Ave.
Other (Office)	5770 S. Eastern Ave.
Other (Office)	5898 Cherry Ave.
Other (Office)	5905 Wilshire Blvd.
Other (Office)	700 W. Main St.
Other (Office)	7400 East Imperial Highway
Other (Office)	900 South Fremont Ave.
Other (Office)	Kenneth Hahn Hall of Administration
Parks & Recreation	Acton Park
Parks & Recreation	Adventure Park
Parks & Recreation	Allen J. Martin Park
Parks & Recreation	Alondra Community Regional Park
Parks & Recreation	Alondra Community Regional Park
Parks & Recreation	Amelia Mayberry Park
Parks & Recreation	Amelia Mayberry Park
Parks & Recreation	Amigo Park
Parks & Recreation	Arcadia Community Regional Park
Parks & Recreation	Arcadia Community Regional Park
Parks & Recreation	Alhens Park
Parks & Recreation	Alhens Park
Parks & Recreation	Bassett Park
Parks & Recreation	Bassett Park
Parks & Recreation	Bassett Park
Parks & Recreation	Belvedere Community Regional Park
Parks & Recreation	Belvedere Community Regional Park
Parks & Recreation	Bodger Park
Parks & Recreation	Carolyn Rosas Park
Parks & Recreation	Castaic Regional Sports Complex
Parks & Recreation	Castaic Regional Sports Complex
Parks & Recreation	Charles S. Farnsworth Park

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Parks & Recreation	Charles S. Farnsworth Park
Parks & Recreation	Charles S. Farnsworth Park
Parks & Recreation	Charles S. Farnsworth Park
Parks & Recreation	Charter Oak Park
Parks & Recreation	City Terrace Park
Parks & Recreation	City Terrace Park
Parks & Recreation	Col. Leon H. Washington Park
Parks & Recreation	Col. Leon H. Washington Park
Parks & Recreation	Crescenta Valley Community Regional Park
Parks & Recreation	Crescenta Valley Community Regional Park
Parks & Recreation	Dalton Park
Parks & Recreation	Del Aire Park
Parks & Recreation	Del Aire Park
Parks & Recreation	Devil's Punchbowl Natural Area and Nature Center
Parks & Recreation	Dexter Park
Parks & Recreation	Dexter Park
Parks & Recreation	Don Knabe Community Regional Park
Parks & Recreation	Don Knabe Community Regional Park
Parks & Recreation	Don Knabe Community Regional Park
Parks & Recreation	East Rancho Dominguez Park
Parks & Recreation	East Rancho Dominguez Park
Parks & Recreation	East Rancho Dominguez Park
Parks & Recreation	El Cariso Community Regional Park
Parks & Recreation	El Cariso Community Regional Park
Parks & Recreation	El Cariso Community Regional Park
Parks & Recreation	Enterprise Park
Parks & Recreation	Enterprise Park
Parks & Recreation	Eugene A. Obregon Park
Parks & Recreation	Eugene A. Obregon Park
Parks & Recreation	Franklin D. Roosevelt Park
Parks & Recreation	Franklin D. Roosevelt Park
Parks & Recreation	George Lane Park
Parks & Recreation	George Lane Park
Parks & Recreation	George Lane Park
Parks & Recreation	George Washington Carver Park
Parks & Recreation	Hacienda Heights Community and Rec. Center
Parks & Recreation	Hacienda Heights Community and Rec. Center
Parks & Recreation	Hacienda Heights Community and Rec. Center
Parks & Recreation	Helen Keller Park
Parks & Recreation	Hollywood Bowl
Parks & Recreation	Jackie Robinson Park
Parks & Recreation	Jackie Robinson Park
Parks & Recreation	Jesse Owens Community Regional Park
Parks & Recreation	Jesse Owens Community Regional Park
Parks & Recreation	John Anson Ford Amphitheatre
Parks & Recreation	John Anson Ford Amphitheatre
Parks & Recreation	Kenneth Hahn State Recreation Area
Parks & Recreation	Ladera Park
Parks & Recreation	Ladera Park
Parks & Recreation	Ladera Park
Parks & Recreation	Lennox Park
Parks & Recreation	Lennox Park
Parks & Recreation	Lennox Park
Parks & Recreation	Loma Alta Park
Parks & Recreation	Loma Alta Park
Parks & Recreation	Loma Alta Park
Parks & Recreation	Los Angeles County Arboretum and Botanic Garden
Parks & Recreation	Los Angeles County Arboretum and Botanic Garden
Parks & Recreation	Mianzanita Park

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Parks & Recreation	Mary M. Bethune Park
Parks & Recreation	Mary M. Bethune Park
Parks & Recreation	Mona Park
Parks & Recreation	Mona Park
Parks & Recreation	Pamela County Park
Parks & Recreation	Pamela County Park
Parks & Recreation	Pathfinder Community Regional Park
Parks & Recreation	Pearblossom County Park
Parks & Recreation	Peter F. Schabarum Regional County Park
Parks & Recreation	Rimgrove Park
Parks & Recreation	Rowland Heights Park
Parks & Recreation	Roy Campanella Park
Parks & Recreation	Ruben F. Salazar Park
Parks & Recreation	Ruben F. Salazar Park
Parks & Recreation	Ruben F. Salazar Park
Parks & Recreation	San Angelo Park
Parks & Recreation	San Fernando Recreation Park and Aquatic Center
Parks & Recreation	Saybrook Park
Parks & Recreation	Sorensen Park
Parks & Recreation	South Coast Botanic Garden
Parks & Recreation	Stephen Sorensen Park
Parks & Recreation	Sunshine Park
Parks & Recreation	Ted Watkins Memorial Park
Parks & Recreation	Ted Watkins Memorial Park
Parks & Recreation	Tesoro Adobe Historic Park
Parks & Recreation	Val Verde Community Regional Park
Parks & Recreation	Val Verde Community Regional Park
Parks & Recreation	Valleydale Park
Parks & Recreation	Valleydale Park
Parks & Recreation	Vasquez Rocks Natural Area and Nature Center
Parks & Recreation	Veterans Memorial Community Regional Park
Parks & Recreation	Victoria Community Regional Park
Parks & Recreation	Victoria Community Regional Park
Parks & Recreation	Walnut Nature Park
Parks & Recreation	Whittier Narrows Recreation Area
Parks & Recreation	William S. Hart Regional Park
Parks & Recreation	William Steinmetz Park
Parks & Recreation	William Steinmetz Park
Parks & Recreation	William Steinmetz Park
Public Health	Antelope Valley Health Center
Public Health	Central Public Health Center
Public Health	Curtis R. Tucker Health Center
Public Health	Glendale Health Center
Public Health	Hollywood/Wilshire Public Health Center
Public Health	Martin Luther King, Jr. Center for Public Health
Public Health	Monrovia Public Health Center
Public Health	North Hollywood Public Health Center
Public Health	Pacoima Public Health Center
Public Health	Pomona Public Health Center
Public Health	Ruth-Temple Public Health Center
Public Health	Simms/Mann Health and Wellness Center
Public Health	Torrance Public Health Center
Public Health	Whittier Public Health Center
Public Works	Big Dalton Dam
Public Works	Big Tuleung Dam

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Public Works	Brackett Field Airport
Public Works	Cogswell Dam
Public Works	Compton/Woodley Airport
Public Works	Devil's Gate Dam
Public Works	Eaton Wash Dam
Public Works	General Wm. J. Fox Airfield
Public Works	Live Oak Dam
Public Works	Morris Dam
Public Works	Pacoima Dam
Public Works	Puddingstone Dam
Public Works	Puddingstone Diversion Dam
Public Works	PW Headquarters Building
Public Works	PW ITD - Mount Wilson Radio Antenna Tower
Public Works	PW ITD - Mount Wilson Radio Facility Bldg.
Public Works	PW OSD - Eaton Yard - Maintenance Office
Public Works	PW RMD - 518-B Maintenance Yard
Public Works	PW RMD - Baldwin Park Maintenance Yard
Public Works	PW RMD - Div. 446 Maintenance Yard
Public Works	PW RMD - Div. #116 Maintenance Yard
Public Works	PW RMD - Div. #1417/241 Maintenance Yard
Public Works	PW RMD - Div. #142 Maintenance Yard
Public Works	PW RMD - Div. #232 Maintenance Yard
Public Works	PW RMD - Div. #336 Maint. Yd.
Public Works	PW RMD - Div. #339/529 Agoura Maintenance Yard
Public Works	PW RMD - Div. #417 Maintenance Yard
Public Works	PW RMD - Div. #446 Sub Maintenance Yard
Public Works	PW RMD - Div. #518 Maintenance Yard
Public Works	PW RMD - Div. #519 Maintenance Yard
Public Works	PW RMD - Div. #523 Maintenance Yard
Public Works	PW RMD - Div. #524 Maintenance Yard
Public Works	PW RMD - Div. #526 Maint. Yd.
Public Works	PW RMD - Div. #551 Maintenance Yard
Public Works	PW RMD - Div. #558 Maint. Yard
Public Works	PW RMD - Div. #558a Jackson Lake Maintenance Yd.
Public Works	PW RMD - Div. #559b Maintenance Yard
Public Works	PW RMD - Lower Central Yard - Division Administration
Public Works	PW RMD - Maint. District 3 Yard
Public Works	PW RMD - Maintenance District No.4 Yard
Public Works	PW RMD - Palmdale Maintenance Dist. No. 5 Bldg. Yard
Public Works	PW RMD - Upper Central Yard
Public Works	PW RMD - Van Pelt Bridge Maintenance Yard
Public Works	PW SMD - 132ND Street
Public Works	PW SMD - 213TH Street
Public Works	PW SMD - AGAVE
Public Works	PW SMD - Balfour
Public Works	PW SMD - Bradhurst
Public Works	PW SMD - Broadway
Public Works	PW SMD - Capitellero
Public Works	PW SMD - Central
Public Works	PW SMD - Commerce Center Drive
Public Works	PW SMD - Davids Road
Public Works	PW SMD - East Yard
Public Works	PW SMD - Heatherfield

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Public Works	PW SMD - Lake Hughes
Public Works	PW SMD - Lake Hughes - Newvale
Public Works	PW SMD - Lake Hughes - Trail K
Public Works	PW SMD - Lawndale
Public Works	PW SMD - LOWRIDGE
Public Works	PW SMD - Malibu Mesa WWTP
Public Works	PW SMD - Malibu TP
Public Works	PW SMD - Marina Del Rey
Public Works	PW SMD - Maybrook
Public Works	PW SMD - Muscatel
Public Works	PW SMD - North Yard
Public Works	PW SMD - Painter
Public Works	PW SMD - South Yard
Public Works	PW SMD - Surety Drive
Public Works	PW SMD - Trancas WWTP
Public Works	PW SMD - TYLER
Public Works	PW SMD - Ulinus
Public Works	PW SMD - Viewridge
Public Works	PW SMD - 120th St. Pump Station
Public Works	PW SMD - 17th St Pump Station
Public Works	PW SMD - 83rd St. Maintenance Yard
Public Works	PW SMD - Alameda Street 3B Pump Station
Public Works	PW SMD - Alameda Street 3C Pump Station
Public Works	PW SMD - Alumitros Bay Pump Station
Public Works	PW SMD - Atlantitos Maintenance Yard
Public Works	PW SMD - Alondra Pump Station
Public Works	PW SMD - Anahaim St. Pump Station
Public Works	PW SMD - Appian Way Pump Station
Public Works	PW SMD - Arena Pump Station
Public Works	PW SMD - Avalon Pump Station
Public Works	PW SMD - Belmont Pump Station
Public Works	PW SMD - Boone Olive Pump Station
Public Works	PW SMD - Century Frwy Pump Station
Public Works	PW SMD - Cerritos Pump Station
Public Works	PW SMD - Claretta Pump Station
Public Works	PW SMD - Compton Creek Pump Station #1
Public Works	PW SMD - Compton Creek Pump Station #2
Public Works	PW SMD - Cordova Walk Pump Station
Public Works	PW SMD - Dominguez Pump Station
Public Works	PW SMD - Dominguez Pump Station
Public Works	PW SMD - Doris Pump Station
Public Works	PW SMD - East Toledo Pump Station
Public Works	PW SMD - Eaton Maintenance Yard
Public Works	PW SMD - El Dorado Pump Station
Public Works	PW SMD - El Segundo Pump Station
Public Works	PW SMD - El Segundo Yard
Public Works	PW SMD - Electric Ave Pump Station
Public Works	PW SMD - Garner Avenue Pump Station
Public Works	PW SMD - Hamilton Bowl South Pump Station
Public Works	PW SMD - Hamilton Bowl West Pump Station
Public Works	PW SMD - Hill St. Pump Station
Public Works	PW SMD - Imperial Yard
Public Works	PW SMD - Johnson Pump Station
Public Works	PW SMD - Lakewood Pump Station
Public Works	PW SMD - Lennox Blvd Pump Station

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Public Works	PW SMD - Longden Yard
Public Works	PW SMD - Los Altos Pump Station
Public Works	PW SMD - Lynwood Pump Station
Public Works	PW SMD - Manhattan Beach Pump Station
Public Works	PW SMD - Market St. Pump Station
Public Works	PW SMD - Naples Pump Station
Public Works	PW SMD - Oxford Pump Station
Public Works	PW SMD - Paramount Pump Station
Public Works	PW SMD - Pickens Yard
Public Works	PW SMD - Redondo Beach Blvd Pump Station
Public Works	PW SMD - Redondo Yard Office
Public Works	PW SMD - Rio Hondo Yard
Public Works	PW SMD - Riverview Maintenance Yard
Public Works	PW SMD - Rubio Yard
Public Works	PW SMD - San Dimas Maintenance Yard
Public Works	PW SMD - Santa Clara Flood Maintenance Yard
Public Works	PW SMD - Saucoy Yard
Public Works	PW SMD - Seaside Pump Station
Public Works	PW SMD - Walteria Lake Pump Station
Public Works	PW SMD - West Long Beach Pump Station
Public Works	PW SMD - West Neapolitan Pump Station
Public Works	PW SMD - West Toledo Pump Station
Public Works	PW SMD - Wilmington Unit 2 Pump Station
Public Works	PW WWD - 116th street pump station
Public Works	PW WWD - 116th street Tank
Public Works	PW WWD - 168th and G Pump station
Public Works	PW WWD - 27 Tank
Public Works	PW WWD - 37-1 Well
Public Works	PW WWD - 37-3 Well
Public Works	PW WWD - 37-4 Well
Public Works	PW WWD - 39 Tank
Public Works	PW WWD - Adobe Tank
Public Works	PW WWD - Anaverde Tanks and pump station
Public Works	PW WWD - Blue Rock Tank
Public Works	PW WWD - Butte 's Tank
Public Works	PW WWD - City Ranch Tanks
Public Works	PW WWD - Crown Valley Pump station
Public Works	PW WWD - Cuyama Tank
Public Works	PW WWD - Ft. Tejon Tank
Public Works	PW WWD - Hasley Pump Station
Public Works	PW WWD - Hasley Tank
Public Works	PW WWD - Joshua Ranch Tank
Public Works	PW WWD - Kohl's tank
Public Works	PW WWD - Los Valles Pump station and Well
Public Works	PW WWD - M & 7th west Tank site
Public Works	PW WWD - McCanery Tank
Public Works	PW WWD - North Tank
Public Works	PW WWD - Old finers tank and pump station
Public Works	PW WWD - P-10 Pump station
Public Works	PW WWD - Q-9 Tanks
Public Works	PW WWD - Rancho Vista tanks
Public Works	PW WWD - South Tank
Public Works	PW WWD - Tierra Subida Pump Station
Public Works	PW WWD - Tierra Subida Tanks

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Public Works	PW WWD - Vincent Pump Station
Public Works	PW WWD #04 - M/5c Water Tank
Public Works	PW WWD #04 - North Administration Building
Public Works	PW WWD #04-M8/75w Water Tank
Public Works	PW WWD #29 - 20858 Regulating Station
Public Works	PW WWD #29 - Big Rock 1010 Tank
Public Works	PW WWD #29 - Big Rock 1200 Tank
Public Works	PW WWD #29 - Big Rock 900 Pump Station
Public Works	PW WWD #29 - Broad Beach Regulating Station
Public Works	PW WWD #29 - Carbon Mesa Tank
Public Works	PW WWD #29 - Entrada Pump Station
Public Works	PW WWD #29 - Entrada Tank
Public Works	PW WWD #29 - Fernwood Tank
Public Works	PW WWD #29 - Guernsey Regulating Station
Public Works	PW WWD #29 - Heather Cliff Regulating Station
Public Works	PW WWD #29 - Horizon Tank
Public Works	PW WWD #29 - Hume Tank
Public Works	PW WWD #29 - La Chusa Feeder Regulating Station
Public Works	PW WWD #29 - La Costa
Public Works	PW WWD #29 - La Costa Regulating Station
Public Works	PW WWD #29 - LADWP Emergency Mindanao Connection
Public Works	PW WWD #29 - Las Flores Pump Station
Public Works	PW WWD #29 - Las Flores Tank
Public Works	PW WWD #29 - Luigo Tank
Public Works	PW WWD #29 - Lower Big Rock 195 Pump Station
Public Works	PW WWD #29 - Lower Busch Pump Station
Public Works	PW WWD #29 - LVMWD - Saddle Peak Interconnection
Public Works	PW WWD #29 - LVMWD, Hume Connection
Public Works	PW WWD #29 - LVMWD, Latigo Connection
Public Works	PW WWD #29 - Malibu Beach Pump Station
Public Works	PW WWD #29 - Malibu Knolls Tank
Public Works	PW WWD #29 - New Summit Tank
Public Works	PW WWD #29 - Nicholas Beach Tank
Public Works	PW WWD #29 - Old Summit Tank
Public Works	PW WWD #29 - Owen Pump Station
Public Works	PW WWD #29 - Peppertine 545 Pump Station
Public Works	PW WWD #29 - Peppertine 812 Tank
Public Works	PW WWD #29 - Peppertine 907 Tank
Public Works	PW WWD #29 - Philip Tank
Public Works	PW WWD #29 - Point Dume Pump Station and Tank
Public Works	PW WWD #29 - Portside Tank
Public Works	PW WWD #29 - Saddle Peak Tank
Public Works	PW WWD #29 - Santa Maria Tank
Public Works	PW WWD #29 - Serra Pump Station
Public Works	PW WWD #29 - Sumac Ridge Tank
Public Works	PW WWD #29 - Sweetwater Hydro Pump Station
Public Works	PW WWD #29 - Sweetwater Mesa Tank
Public Works	PW WWD #29 - Topanga Beach Pump Station
Public Works	PW WWD #29 - Topanga Beach Tank
Public Works	PW WWD #29 - Topanga Forks Tank
Public Works	PW WWD #29 - Topanga Oaks Tank
Public Works	PW WWD #29 - Topanga Park Pump Station
Public Works	PW WWD #29 - Trancus Tank
Public Works	PW WWD #29 - Upper Big Rock 730 Pump Station
Public Works	PW WWD #29 - Upper Encinal Tank

Table B-1. County Critical Facilities

Department / Agency	Facility Name
Public Works	PW WWD #29 - Winding Wy Tank
Public Works	PW WWD #29 LADWP Emergency Via Dolce Connection
Public Works	San Dimas Dam
Public Works	San Gabriel Dam
Public Works	San Gabriel Valley Airport
Public Works	Santa Anita Dam
Public Works	Thompson Creek Dam
Public Works	Whiteman Airport
Sheriff's Department	Altadena Sheriff's Station
Sheriff's Department	Avalon Sheriff's Station
Sheriff's Department	Carson Sheriff's Station
Sheriff's Department	Century Regional Detention Facility
Sheriff's Department	Century Sheriff's Station
Sheriff's Department	Corrios Sheriff's Station
Sheriff's Department	Compton Sheriff's Station
Sheriff's Department	Crescenta Valley Sheriff's Station
Sheriff's Department	East Los Angeles Sheriff's Station
Sheriff's Department	Industry Sheriff's Station
Sheriff's Department	Inmate Reception Center
Sheriff's Department	Lakewood Sheriff's Station
Sheriff's Department	Lancaster Sheriff's Station
Sheriff's Department	Lomita Sheriff's Station
Sheriff's Department	Malibu/Lost Hills Sheriff's Station
Sheriff's Department	Marina Del Rey Sheriff's Station
Sheriff's Department	Men's Central Jail
Sheriff's Department	North County Correctional Facility
Sheriff's Department	Norwalk Sheriff's Station
Sheriff's Department	Palmdale Sheriff's Station
Sheriff's Department	Pico Rivera Sheriff's Station
Sheriff's Department	Pichess Detention Center East Facility
Sheriff's Department	Pichess Detention Center North Facility
Sheriff's Department	Pichess Detention Center South Facility
Sheriff's Department	San Dimas Sheriff's Station
Sheriff's Department	Santa Clarita Valley Sheriff's Station
Sheriff's Department	South Los Angeles Sheriff's Station
Sheriff's Department	Temple Sheriff's Station
Sheriff's Department	Twin Towers Correctional Facility
Sheriff's Department	Walnut/Diamond Bar Sheriff's Station
Sheriff's Department	West Hollywood Sheriff's Station

APPENDIX C – RISK ASSESSMENT

Table C-1: County-wide Statistical Area Hazard Impacts

CSA	S.D.	3 Ft Sea Level Rise		6 Ft Sea Level Rise		Dam Failure	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flood	Deep Seated Landslide Cycles & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
		Rise	Loss	Rise	Loss										
Avocado Heights	1						1				1				
Baldwin Hills	1						1				1				
Bassett	1						1		1		1				
Chater Oak	1						1		1		1				1
East Los Angeles	1						1				1				
El Monte	1						1				1				
North Whittier	1						1				1				
Palma Hills	1						1				1				1
Pellissier Village	1						1				1				
San Jose Hills	1						1		1		1				
South El Monte	1						1				1				
South San Gabriel	1						1				1				
Valinda	1						1		1		1				
Walnut	1						1				1				
West Puente Valley	1						1		1		1				
Whittier Narrows	1						1		1		1				
Atlanta Village	2						1				1				
Atlanta-Westmont	2						1				1				
Del Rey	2	1	1				1		1		1				
Hawthorne	2						1				1				
Ladera Heights	2						1		1		1				1
Rosewood	2						1				1				
Rosewood East	2						1				1				
Gardena	2						1				1				
Rosewood West	2						1				1				
Rancho Dominguez	2						1				1				

Table C-1: County-wide Statistical Area Hazard Impacts

CSA	S.D.	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flood	Deep Seated Slides Cliffs & X	Max Tsunami Inundation	Very High Wildfire LEA	High Wildfire SRA	Very High Wildfire SRA
Agua Dulce	5				1	1			1		1	1	1
Altadena					1	1			1		1	1	1
Alhambra	5			1	1	1			1		1	1	1
Anaheim	5				1	1			1		1	1	1
Bonquet Canyon	5				1	1			1		1	1	1
Bradbury	5				1	1			1		1	1	1
Canyon Country	5			1	1	1			1		1	1	1
Castaic	5			1	1	1			1		1	1	1
Del Sur	5			1	1	1			1		1	1	1
Desert View Highlands	5				1	1			1		1	1	1
East Covina					1	1			1		1	1	1
East Lancaster	5			1	1	1			1		1	1	1
East Pasadena	5				1	1			1		1	1	1
Elizabeth Lake	5				1	1			1		1	1	1
Elizabet Lake	5				1	1			1		1	1	1
El Vista	5				1	1			1		1	1	1
La Crescenta/Montrose	5				1	1			1		1	1	1
Lake Hughes	5				1	1			1		1	1	1
Lake Los Angeles	5				1	1			1		1	1	1
Lake Monro	5				1	1			1		1	1	1
Leona Valley	5				1	1			1		1	1	1
Littlerock	5			1	1	1			1		1	1	1
Littlerock/Jumper Hills	5			1	1	1			1		1	1	1
Littlerock/Pearblossom	5			1	1	1			1		1	1	1
Llano	5				1	1			1		1	1	1
Monrovia	5				1	1			1		1	1	1
Newhall	5				1	1			1		1	1	1
North Lancaster	5				1	1			1		1	1	1
Northeast San Gabriel	5				1	1			1		1	1	1

Table C-1: County-wide Statistical Area Hazard Impacts

CSA	S.D.	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flood	Deep Seated Slides Cliffs & X	Max Tsunami Inundation	Very High Wildfire LEA	High Wildfire SRA	Very High Wildfire SRA
View Park/Windsor Hills	2				1	1			1		1		
West Rambo Dominguez	2				1	1			1		1		
Willowbrook	2				1	1			1		1		
Wichham	2				1	1			1		1		
Franklin Canyon	3				1	1			1		1		
Miracle Mile	3				1	1			1		1		
Santa Monica Mountains	3			1	1	1			1		1		1
Universal City	3				1	1			1		1		
West LA	3				1	1			1		1		
Westhills	3				1	1			1		1		1
Cerritos	4				1	1			1		1		
East La Mirada	4				1	1			1		1		
East Whittier	4				1	1			1		1		
Harbor Gateway	4				1	1			1		1		
La Habra Heights	4				1	1			1		1		
La Rambla	4				1	1			1		1		
Lakewood	4				1	1			1		1		
Long Beach	4				1	1			1		1		
Palms Verdes/Panorama	4				1	1			1		1		
San Clemente Island	4				1	1			1		1		
Santa Catalina Island	4				1	1			1		1		
South Whittier	4				1	1			1		1		
Westfield/Academy Hills	4				1	1			1		1		
Action	5				1	1			1		1		1

Table C-3: Fire Department Facility Hazard Impacts

Facility Name	3 FI Sea Level Rise	6 FI Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire TEA	High Wildfire SRA	Very High Wildfire SRA
City of Glendale Fire Department Station 21				1								
City of Glendale Fire Department Station 22				1								
City of Glendale Fire Department Station 23				1						1		
City of Glendale Fire Department Station 24				1						1		
City of Glendale Fire Department Station 25				1								
City of Glendale Fire Department Station 26				1								
City of Glendale Fire Department Station 27				1								
City of Glendale Fire Department Station 28				1								
City of Long Beach Fire Department - Beach Operations				1					1			
City of Long Beach Fire Department - Headquarters				1								
City of Long Beach Fire Department Station 1				1								
City of Long Beach Fire Department Station 10				1								
City of Long Beach Fire Department Station 11				1								
City of Long Beach Fire Department Station 12				1								

Table C-3: Fire Department Facility Hazard Impacts

Facility Name	3 FI Sea Level Rise	6 FI Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire TEA	High Wildfire SRA	Very High Wildfire SRA
City of Burbank Fire Department Station 11 - Headquarters				1								
City of Burbank Fire Department Station 12				1								
City of Burbank Fire Department Station 13				1								
City of Burbank Fire Department Station 14				1								
City of Burbank Fire Department Station 15				1								
City of Burbank Fire Department Station 16				1								
City of Compton Fire Department Station 1 - Headquarters				1		1				1		
City of Compton Fire Department Station 2				1		1						
City of Compton Fire Department Station 3				1								
City of Compton Fire Department Station 4				1								
City of Downey Fire Department Station 1 - Headquarters				1		1						
City of Downey Fire Department Station 2				1		1						
City of Downey Fire Department Station 3				1		1						
City of Downey Fire Department Station 4				1		1						

Table C-3: Fire Department Facility Hazard Impacts

Facility Name	3 FI Sea Level Rise	6 FI Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire TERA	High Wildfire SRA	Very High Wildfire SRA
City of Long Beach Fire Department Station 6				1					1			
City of Long Beach Fire Department Station 7				1		1						
City of Long Beach Fire Department Station 8	1			1					1			
City of Long Beach Fire Department Station 9				1								
City of Los Angeles Fire Department Station 1				1								
City of Los Angeles Fire Department Station 10				1								
City of Los Angeles Fire Department Station 108				1						1		
City of Los Angeles Fire Department Station 109				1						1		
City of Los Angeles Fire Department Station 11				1								
City of Los Angeles Fire Department Station 12				1								
City of Los Angeles Fire Department Station 13				1								
City of Los Angeles Fire Department Station 14				1								
City of Los Angeles Fire Department Station 15				1								
City of Los Angeles Fire Department Station 16				1								
City of Los Angeles Fire Department Station 17				1								

Table C-3: Fire Department Facility Hazard Impacts

Facility Name	3 FI Sea Level Rise	6 FI Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire TERA	High Wildfire SRA	Very High Wildfire SRA
City of Long Beach Fire Department Station 13				1		1						
City of Long Beach Fire Department Station 14		1		1					1			
City of Long Beach Fire Department Station 15				1					1			
City of Long Beach Fire Department Station 16				1								
City of Long Beach Fire Department Station 17				1								
City of Long Beach Fire Department Station 18				1		1						
City of Long Beach Fire Department Station 19				1		1						
City of Long Beach Fire Department Station 2				1								
City of Long Beach Fire Department Station 20		1		1					1			
City of Long Beach Fire Department Station 21				1		1			1			
City of Long Beach Fire Department Station 22				1		1						
City of Long Beach Fire Department Station 24				1					1			
City of Long Beach Fire Department Station 3				1								
City of Long Beach Fire Department Station 4				1								
City of Long Beach Fire Department Station 5				1		1						

Table C-3: Fire Department Facility Hazard Impacts

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire TERA	High Wildfire SRA	Very High Wildfire SRA
Los Angeles County Fire Department Station 56				1						1		
Los Angeles County Fire Department Station 57				1		1						
Los Angeles County Fire Department Station 58				1								
Los Angeles County Fire Department Station 59				1								
Los Angeles County Fire Department Station 6				1								
Los Angeles County Fire Department Station 60				1								
Los Angeles County Fire Department Station 61				1								
Los Angeles County Fire Department Station 62				1						1		
Los Angeles County Fire Department Station 63				1								
Los Angeles County Fire Department Station 64				1								
Los Angeles County Fire Department Station 65				1								1
Los Angeles County Fire Department Station 66				1								
Los Angeles County Fire Department Station 67				1								1
Los Angeles County Fire Department Station 68				1						1		
Los Angeles County Fire Department Station 69				1								1

Table C-3: Fire Department Facility Hazard Impacts

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire TERA	High Wildfire SRA	Very High Wildfire SRA
Los Angeles County Fire Department Station 40				1		1						
Los Angeles County Fire Department Station 41				1								
Los Angeles County Fire Department Station 42				1								
Los Angeles County Fire Department Station 43				1								
Los Angeles County Fire Department Station 44				1								
Los Angeles County Fire Department Station 45				1		1						
Los Angeles County Fire Department Station 47				1								
Los Angeles County Fire Department Station 48				1								
Los Angeles County Fire Department Station 49				1								
Los Angeles County Fire Department Station 5				1								
Los Angeles County Fire Department Station 50				1								
Los Angeles County Fire Department Station 51				1						1		
Los Angeles County Fire Department Station 53				1								
Los Angeles County Fire Department Station 54				1		1						
Los Angeles County Fire Department Station 55				1						1		

Table C-3: Fire Department Facility Hazard Impacts

Facility Name	3 FI Sea Level Rise	6 FI Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire TERA	High Wildfire SRA	Very High Wildfire SRA
Redondo Beach Fire Department Station 1 - Headquarters				1								
Redondo Beach Fire Department Station 2				1								
Redondo Beach Fire Department Station 3	1			1					1			
San Gabriel Fire Department Station 1 - Headquarters				1								
San Gabriel Fire Department Station 2				1								
San Marino Fire Department				1								
Sierra Madre Volunteer Fire Department				1								
South Pasadena Fire Department				1								
The City of El Segundo Fire Department Station 1 - Headquarters				1								
The City of El Segundo Fire Department Station 2				1								
Torrance Fire Department Fire Station 1 - Headquarters				1								
Torrance Fire Department Fire Station 2				1								
Torrance Fire Department Fire Station 3				1								

Table C-3: Fire Department Facility Hazard Impacts

Facility Name	3 FI Sea Level Rise	6 FI Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire TERA	High Wildfire SRA	Very High Wildfire SRA
Los Angeles County Fire Department Station 99				1						1		
Manhattan Beach Fire Department Station 1 - Headquarters				1								
Manhattan Beach Fire Department Station 2				1								
Montebello Fire Department Station 1 - Headquarters				1								
Montebello Fire Department Station 2				1								
Montebello Fire Department Station 3				1								
Pasadena Fire Department Station 31				1								
Pasadena Fire Department Station 32				1								
Pasadena Fire Department Station 33				1								
Pasadena Fire Department Station 34				1								
Pasadena Fire Department Station 36				1								
Pasadena Fire Department Station 37				1								
Pasadena Fire Department Station 38				1						1		
Pasadena Fire Department Station 39				1						1		

Table C-5: Library Hazard Impacts

Facility Name	3 FT Scaled Level Rise	6 FT Scaled Level Rise	Draw Failure Inundation	Wigent Shaking PO	Extreme Shaking EO	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Scated Inundation Class X & Y	Mov. Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
West Hollywood Library												
Westlake Village Library				1								
Willowbrook Library				1						1		
Windsor Library				1								
Westham Library				1								
Woodcrest Library				1								

Table C-5: Library Hazard Impacts

Facility Name	3 FT Scaled Level Rise	6 FT Scaled Level Rise	Draw Failure Inundation	Wigent Shaking PO	Extreme Shaking EO	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Scated Inundation Class X & Y	Mov. Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Norwalk Library				1								
Panamint Library				1								
Pico Rivera Library				1		1						
Quartz Hill Library				1		1						
Rivers Library				1		1						
Rosemead Library				1								
Rowland Heights Library				1								
San Dimas Library				1								
San Fernando Library				1								
San Gabriel Library				1								
San Jose Library				1								
San Marcos Library				1								
South El Monte Library				1								
South Whittier Library				1								
Stevenson Ranch Library				1						1		
Stokast Library				1								
Temple City Library				1								
Terrace Library				1								1
Van Nuys Library				1								
Van Nuys Branch Library				1								
West Covina Library				1								
West Covina Library				1		1						

Table C-10: Public Works Facility Hazard Impacts

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Scated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LFA	High Wildfire SRA	Very High Wildfire SRA
PW WWD #29 - Point and Tank				1						1		
PW WWD #29 - Porthole Tank				1								
PW WWD #29 - Saddle Peak Tank				1				1				1
PW WWD #29 - Santa Maria Tank				1						1		
PW WWD #29 - Serra Pump Station				1						1		
PW WWD #29 - Sumac Ridge Tank				1						1		
PW WWD #29 - Sweetwater Hydro Pump Station				1						1		
PW WWD #29 - Sweetwater Mesa Tank				1				1		1		
PW WWD #29 - Tonanga Beach Pump Station				1				1				1
PW WWD #29 - Tonanga Beach Tank				1						1		
PW WWD #29 - Tonanga Forks Tank				1				1				1
PW WWD #29 - Tonanga Oaks Tank				1				1				1
PW WWD #29 - Tonanga Park Pump Station				1								1

Table C-10: Public Works Facility Hazard Impacts

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Scated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LFA	High Wildfire SRA	Very High Wildfire SRA
PW WWD #29 - LVMWD, Latigo Connection				1				1				1
PW WWD #29 - LVMWD, Saddle Peak Interconnection				1								1
PW WWD #29 - Saddle Peak Beach Pump Station				1						1		
PW WWD #29 - Malibu Beach Pump Station				1						1		
PW WWD #29 - Malibu Knolls Tank				1						1		
PW WWD #29 - New Summit Tank				1						1		
PW WWD #29 - Nicholas Beach Tank				1				1		1		
PW WWD #29 - Old Summit Tank				1						1		
PW WWD #29 - Owen Pump Station				1								1
PW WWD #29 - Peperupine 545 Pump Station				1						1		
PW WWD #29 - Peperupine 812 Tank				1								1
PW WWD #29 - Peperupine 907 Tank				1				1				1
PW WWD #29 - Philip Tank				1						1		

Table C-11: Sheriff's Department Facility Hazard Impacts

Facility Name	3 Ft. Sea Level Rise		6 Ft. Sea Level Rise		Dam Failure Inundation	Violent EO Shaking	Extreme EO Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Scour Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
	Rise	Level	Rise	Level										
Pitchess Detention Center North Facility					1	1								1
Pitchess Detention Center South Facility					1	1								1
San Dimas Sheriff's Station														
Santa Clarita Valley Sheriff's Station							1							
South Los Angeles Sheriff's Station														
Temple Sheriff's Station														
Twin Towers Correctional Facility														
Walnut/Diamond Bar Sheriff's Station														
West Hollywood Sheriff's Station														

Table C-11: Sheriff's Department Facility Hazard Impacts

Facility Name	3 Ft. Sea Level Rise		6 Ft. Sea Level Rise		Dam Failure Inundation	Violent EO Shaking	Extreme EO Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Scour Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
	Rise	Level	Rise	Level										
Allandale Sheriff's Station														
Avadon Sheriff's Station						1						1		
Carson Sheriff's Station						1								
County Regional Detention Facility														
Century Sheriff's Station						1								
Cerritos Sheriff's Station						1								
Compton Sheriff's Station						1		1						
Crescenta Valley Sheriff's Station														
East Los Angeles Sheriff's Station						1						1		
Industry Sheriff's Station						1								
Inmate Reception Center						1								
Lakewood Sheriff's Station						1								
Lancaster Sheriff's Station						1		1						
Lomita Sheriff's Station						1								
Malibu/Lost Hills Sheriff's Station						1						1		
Marina Del Rey Sheriff's Station						1								
Men's Central Jail						1					1			
North County Correctional Facility					1								1	
Norwalk Sheriff's Station						1								
Palmdale Sheriff's Station						1								
Pico Rivers Sheriff's Station						1		1						
Pitchess Detention Center East Facility						1					1			1

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX M

WATER RATES STRUCTURE

LIBERTY UTILITIES (PARK WATER) CORP.
 9750 WASHBURN ROAD
 P. O. BOX 7002
 DOWNEY, CALIFORNIA 90241-7002

REVISED Cal. P.U.C. Sheet No. 1480-W

Canceling REVISED Cal. P.U.C. Sheet No. 1470-W

SCHEDULE NO. PR-1-NR

NON-RESIDENTIAL METERED SERVICE

APPLICABILITY

Applicable to all metered water services except that provided to single-family residential customers.

TERRITORY

Within all service areas of Los Angeles County as delineated in the service area maps included in the tariff schedules.

RATES

Quantity Rates:

For all water delivered per 100 cubic feet \$ 6.362 (I)

Service Charge:

	Per Meter Per Month	
For 5/8 x 3/4-inch meter	\$ 20.58	(I)
For 3/4-inch meter	30.87	
For 1-inch meter	51.45	
For 1 1/2-inch meter	102.90	
For 2-inch meter	164.64	
For 3-inch meter	308.70	
For 4-inch meter	514.50	
For 6-inch meter	1,029.00	
For 8-inch meter	1,646.40	
For 10-inch meter	2,366.70	
For 12-inch meter	3,395.70	(I)

This Service Charge is a readiness-to-serve charge, which is applicable to all metered services and to which is to be added the monthly charge computed at the Quantity Rates.

SPECIAL CONDITIONS

1. All charges under this schedule to customers in the City of Norwalk are subject to a surcharge of 2.04 percent.
2. A late charge will be imposed per Schedule No. LC.
3. In accordance with Section 2714 of the Public Utilities Code, if a tenant in a rental unit leaves owing the Company, service to subsequent tenants in that unit will, at the Company's option, be furnished on the account of the landlord or property owner.
4. All bills are subject to the reimbursement fee set forth on Schedule No. UF.

(Continued)

(To be inserted by utility)	Issued By	(To be inserted by Cal. P.U.C.)
Advice No. <u>305-W</u>	<u>CHRISTOPHER G. ALARIO</u> Name	Date Filed <u>10/20/2020</u>
Dec. No. <u>D.20-09-019</u>	<u>PRESIDENT</u> Title	Effective <u>11/20/2020</u>
		Resolution No. _____

LIBERTY UTILITIES (PARK WATER) CORP.
9750 WASHBURN ROAD
P. O. BOX 7002
DOWNEY, CALIFORNIA 90240

REVISED Cal. P.U.C. Sheet No. 1511-W
Canceling REVISED Cal. P.U.C. Sheet No. 1501-W

SCHEDULE PR-1-NR

NON-RESIDENTIAL METERED SERVICE

26. As authorized by the California Public Utilities Commission, an amount of \$ 0.543 per Ccf is to be added to the quantity rate for a period of 18 months, beginning on the effective date of Advice Letter 289-W. This surcharge will recover the under-collection in the WRAM and MCBA as of December 31, 2018.
27. As authorized by the California Public Utilities Commission, an amount of \$0.120 per Ccf is to be added to the quantity rate for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcharge will recover the under collection in the Consolidated Expense Balancing Account as of December 31, 2020.
28. As authorized by the California Public Utilities Commission, an amount of \$2.63 surcredit per customer is to be added to the Customer's bill for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcredit will refund the over collection in the Conservation Expense One-Way Balancing Account and the Tangible Property Regulations Consequences Memorandum as of December 31, 2018.
29. As authorized by the California Public Utilities Commission, an amount of \$5.46 surcredit per customer is to be added to the Customer's bill for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcredit will refund the over collection in the Pension Expense Balancing Account as of December 31, 2017.
30. As authorized by the California Public Utilities Commission, an amount of \$0.126 per Ccf is to be added to the quantity rate for a period of 16 months, beginning on the effective date of Advice Letter 310-W. This surcharge will recover the under collection in the Interim Rates Memorandum Account as of November 19, 2020. (N)
|
(N)

(To be inserted by utility)	Issued By	(To be inserted by Cal. P.U.C.)
Advice No. <u>310-W</u>	<u>CHRISTOPHER G. ALARIO</u> Name	Date Filed <u>02/01/2021</u>
Dec. No. <u>D.20-09-019</u>	<u>PRESIDENT</u> Title	Effective <u>03/04/2021</u>
		Resolution No. _____

SCHEDULE NO. PR-1-R

RESIDENTIAL METERED SERVICE

APPLICABILITY

Applicable to all metered water services provided to single-family residential customers.

TERRITORY

Within all service areas of Los Angeles County as delineated in the service area maps included in the tariff schedules.

RATES

Quantity Rates:

For the first 800 cubic feet, per 100 cubic feet	\$ 6.033 (I)
For all over 800 cubic feet, per 100 cubic feet	\$ 6.938 (I)

Service Charge:

	Per Meter	
	<u>Per Month</u>	
For 5/8 x 3/4-inch meter	\$ 20.58	(I)
For 3/4-inch meter	30.87	
For 1-inch meter	51.45	
For 1 1/2-inch meter	102.90	
For 2-inch meter	164.64	
For 3-inch meter	308.70	
For 4-inch meter	514.50	
For 6-inch meter	1,029.00	
For 8-inch meter	1,646.40	
For 10-inch meter	2,366.70	
For 12-inch meter	3,395.70	

This Service Charge is a readiness-to-serve charge, which is applicable to all metered services and to which is to be added the monthly charge computed at the Quantity Rates.

SPECIAL CONDITIONS

1. All charges under this schedule to customers in the City of Norwalk are subject to a surcharge of 2.04 percent.
2. A late charge will be imposed per Schedule No. LC.
3. In accordance with Section 2714 of the Public Utilities Code, if a tenant in a rental unit leaves owing the Company, service to subsequent tenants in that unit will, at the Company's option, be furnished on the account of the landlord or property owner.
4. All bills are subject to the reimbursement fee set forth on Schedule No. UF.

(Continued)

(To be inserted by utility)	Issued By	(To be inserted by Cal. P.U.C.)
Advice No. <u>305-W</u>	<u>CHRISTOPHER G. ALARIO</u>	Date Filed <u>10/20/2020</u>
	Name	Effective <u>11/20/2020</u>
Dec. No. <u>D.20-09-019</u>	<u>PRESIDENT</u>	Resolution No. _____
	Title	

LIBERTY UTILITIES (PARK WATER) CORP.
9750 WASHBURN ROAD
P. O. BOX 7002
DOWNEY, CALIFORNIA 90240

REVISED Cal. P.U.C. Sheet No. 1510-W
Canceling REVISED Cal. P.U.C. Sheet No. 1500-W

SCHEDULE PR-1-R

RESIDENTIAL METERED SERVICE

- 26. As authorized by the California Public Utilities Commission, an amount of \$ 0.543 per Ccf is to be added to the quantity rate for a period of 18 months, beginning on the effective date of Advice Letter 289-W. This surcharge will recover the under-collection in the WRAM and MCBA as of December 31, 2018.
- 27. As authorized by the California Public Utilities Commission, an amount of \$0.120 per Ccf is to be added to the quantity rate for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcharge will recover the under collection in the Consolidated Expense Balancing Account as of December 31, 2020.
- 28. As authorized by the California Public Utilities Commission, an amount of \$2.63 surcredit per customer is to be added to the Customer's bill for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcredit will refund the over collection in the Conservation Expense One-Way Balancing Account and the Tangible Property Regulations Consequences Memorandum as of December 31, 2018.
- 29. As authorized by the California Public Utilities Commission, an amount of \$5.46 surcredit per customer is to be added to the Customer's bill for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcredit will refund the over collection in the Pension Expense Balancing Account as of December 31, 2017.
- 30. As authorized by the California Public Utilities Commission, an amount of \$0.126 per Ccf is to be added to the quantity rate for a period of 16 months, beginning on the effective date of Advice Letter 310-W. This surcharge will recover the under collection in the Interim Rates Memorandum Account as of November 19, 2020. (N)
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(N)

(To be inserted by utility)	Issued By	(To be inserted by Cal. P.U.C.)
Advice No. <u>310-W</u>	<u>CHRISTOPHER G. ALARIO</u> Name	Date Filed <u>02/01/2021</u>
Dec. No. <u>D.20-09-019</u>	<u>PRESIDENT</u> Title	Effective <u>03/04/2021</u>
		Resolution No. _____

LIBERTY UTILITIES (PARK WATER) CORP.
 9750 WASHBURN ROAD
 P. O. BOX 7002
 DOWNEY, CALIFORNIA 90241-7002

REVISED Cal. P.U.C. Sheet No. 1481-W
 Canceling REVISED Cal. P.U.C. Sheet No. 1471-W

SCHEDULE NO. PR-4F

NON-METERED FIRE SPRINKLER SERVICE

APPLICABILITY

Applicable for water service to privately-owned non-metered fire-sprinkler systems and hydrants where water is to be used only in case of fire.

TERRITORY

Within all service areas in Los Angeles County as delineated on the service area maps included in the tariff schedules.

RATES

Service Charge:	<u>Per Meter</u> <u>Per Month</u>	
For 2-inch meter	\$ 24.21	(I)
For 3-inch meter	32.14	
For 4-inch meter	47.79	
For 6-inch meter	70.60	
For 8-inch meter	104.45	
For 10-inch meter	153.67	
For 12-inch meter	222.36	(I)

SPECIAL CONDITIONS

1. The fire protection service connection shall be installed by the utility at the cost paid by the applicant. Such payment shall not be subject to refund.
2. The minimum diameter for fire protection service shall be two (2) inches, and the maximum diameter shall be not more than the diameter of the main to which the service is connected.
3. If a distribution main of adequate size to serve a private fire protection system in addition to all other normal service does not exist in the street or alley adjacent to the premises to be served then a service main from the nearest main of adequate capacity shall be installed by the utility and the cost paid by the applicant. Such payment shall not be subject to refund.

(Continued)

(To be inserted by utility) Advice No. <u>305-W</u> Dec. No. <u>D.20-09-019</u>	Issued By <u>CHRISTOPHER G. ALARIO</u> Name <u>PRESIDENT</u> Title	(To be inserted by Cal. P.U.C.) Date Filed <u>10/20/2020</u> Effective <u>11/20/2020</u> Resolution No. _____
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SCHEDULE PR-4F

NON-METERED FIRE SPRINKLER SERVICE

4. Service hereunder is for private fire protection systems to which no connections for other than fire protection purposes are allowed and which are regularly inspected by the underwriters having jurisdiction, are installed according to specifications of the utility, and are maintained to the satisfaction of the utility. The utility may install the standard detector type meter approved by the Board of Fire Underwriters for protection against theft, leakage or waste of water, and the cost paid by the applicant. Such payment shall not be subject to refund.
5. The utility undertakes to supply only such water at such pressure as may be available at any time through the normal operation of its system.
6. Any unauthorized use of water, other than for fire extinguishing purposes, shall be charged for at the regular established rate as set forth under Schedule No. PR-1-NR, Nonresidential Metered Service including Special Condition No. 21, and/or may be the grounds for the immediate disconnection of the sprinkler service without liability to the Company.
7. The utility reserves the right to limit the installation of private fire hydrant service to such areas where public fire hydrant does not exist or where public fire hydrant service is limited in scope to the detriment of the applicant.
8. A late charge will be imposed per Schedule No. LC.
9. All bills are subject to the reimbursement fee set forth on Schedule No. UF.
10. As authorized by the California Public Utilities Commission, an amount of \$0.120 per Ccf is to be added to the quantity rate for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcharge will recover the under collection in the Consolidated Expense Balancing as of December 31, 2020.
11. As authorized by the California Public Utilities Commission, an amount of \$2.63 surcredit per customer is to be added to the Customer's bill for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcredit will refund the over collection in the Conservation Expense One-Way Balancing Account and the Tangible Property Regulations Consequences Memorandum as of December 31, 2018.
12. As authorized by the California Public Utilities Commission, an amount of \$5.46 surcredit per customer is to be added to the Customer's bill for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcredit will refund the over collection in the Pension Expense Balancing Account as of December 31, 2017.
13. As authorized by the California Public Utilities Commission, an amount of \$0.126 per Ccf is to be added to the quantity rate for a period of 16 months, beginning on the effective date of Advice Letter 310-W. This surcharge will recover the under collection in the Interim Rates Memorandum Account as of November 19, 2020. (N)
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(N)

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Dec. No. <u>D.20-09-019</u>	<u>PRESIDENT</u> Title	Effective <u>03/04/2021</u>
		Resolution No. _____

LIBERTY UTILITIES (PARK WATER) CORP.
 9750 WASHBURN ROAD
 P. O. BOX 7002
 DOWNEY, CALIFORNIA 90241-7002

REVISED Cal. P.U.C. Sheet No. 1482-W
 Canceling REVISED Cal. P.U.C. Sheet No. 1472-W

SCHEDULE NO. PR-6

RECLAIMED WATER SERVICE

APPLICABILITY

Applicable to all meter reclaimed water service.

TERRITORY

Within all service areas in Los Angeles County as delineated on the service area maps included in the tariff schedules.

RATES

Quantity Rate:
 For all water delivered per 100 cubic feet \$ 5.396 (I)

Service Charge:	<u>Per Meter</u> <u>Per Month</u>	
For 5/8 x 3/4-inch meter	\$ 20.58	(I)
For 1/4-inch meter	30.87	
For 1-inch meter	51.45	
For 1 1/2-inch meter	102.90	
For 2-inch meter	164.64	
For 3-inch meter	308.70	
For 4-inch meter	514.50	
For 6-inch meter	1,029.00	
For 8-inch meter	1,646.40	
For 10-inch meter	2,366.70	
For 12-inch meter	3,395.70	(I)

The Service Charge is a readiness-to-serve charge applicable to all metered service and to which is to be added the charge for water used computed at Quantity Rates.

SPECIAL CONDITIONS

1. The user (customer) is responsible for on-site compliance with local, state, or federal regulations that may apply to the use of an approved reclaimed water source.
2. All charges under this schedule to customers in the City of Norwalk are subject to a surcharge of 2.04 percent.
3. A late charge will be imposed per Schedule No. LC.
4. All bills are subject to the reimbursement fee set forth on Schedule No. UF.

(Continued)

(To be inserted by utility)	Issued By	(To be inserted by Cal. P.U.C.)
Advice No. <u>305-W</u>	<u>CHRISTOPHER G. ALARIO</u> Name	Date Filed <u>10/20/2020</u>
Dec. No. <u>D.20-09-019</u>	<u>PRESIDENT</u> Title	Effective <u>11/20/2020</u>
		Resolution No. _____

LIBERTY UTILITIES (PARK WATER) CORP.
9750 WASHBURN ROAD
P. O. BOX 7002
DOWNEY, CALIFORNIA 90240

REVISED Cal. P.U.C. Sheet No. 1513-W
Canceling REVISED Cal. P.U.C. Sheet No. 1503-W

SCHEDULE PR-6

RECLAIMED WATER SERVICE

5. As authorized by the California Public Utilities Commission, an amount of \$0.120 per Ccf is to be added to the quantity rate for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcharge will recover the under collection in the Consolidated Expense Balancing account as of December 31, 2020.
7. As authorized by the California Public Utilities Commission, an amount of \$2.63 surcredit per customer is to be added to the Customer's bill for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcredit will refund the over collection in the Conservation Expense One-Way Balancing Account and the Tangible Property Regulations Consequences Memorandum as of December 31, 2018.
8. As authorized by the California Public Utilities Commission, an amount of \$5.46 surcredit per customer is to be added to the Customer's bill for a period of 12 months, beginning on the effective date of Advice Letter 309-W. This surcredit will refund the over collection in the Pension Expense Balancing Account as of December 31, 2017.
9. As authorized by the California Public Utilities Commission, an amount of \$0.126 per Ccf is to be added to the quantity rate for a period of 16 months, beginning on the effective date of Advice Letter 310-W. This surcharge will recover the under collection in the Interim Rates Memorandum Account as of November 19, 2020.

(N)
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		Resolution No. _____

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX N

RESOLUTION ADOPTING 2020 UWMP AND WSCP