

## Wasteload Allocation Scenario 7

Described below is the proposed Wasteload Allocation Scenario 7. The intent of Scenario 7 is to provide the Regional Board with the requisite information to update the POTW wasteload allocations in the next update of the Basin Plan. The wasteload allocations are used in the NPDES permit renewal process to set the numeric discharge limits for TDS and TIN concentration and mass emission rates.

Planning information acquired from all the POTWs forms the basis for Scenario 7, and is shown in Table 1. Each POTW has provided planning information for 2010 and 2020. The 2010 information is intended to be representative of conditions for the next cycle of NPDES permit renewals. The 2020 information is intended to be representative of conditions for the subsequent cycle of NPDES permit renewals.

For each POTW plant in Table 1, the planning information includes the design capacity of the plant, the expected plant production, the portion of the plant production that will be reused, and the portion of the plant production that will be discharged to the Santa Ana River or one of its tributaries.

Table 1 also includes notes for each POTW plant that describes the plans for reuse in more detail, and how those plans will affect discharge over an annual cycle. For example, if a POTW's reuse plans are for outdoor irrigation, then demand for the recycled water will vary over the year based on evapotranspiration rates, and hence, so will the discharge. If a POTW's reuse plans are for artificial recharge, then reuse is not dependent on evapotranspiration, and reuse and discharge will occur at constant rates. These annual variations in reuse and discharge will be included in the computer simulations described below.

Table 2 describes how the planning information in Table 1 will be used as input data for various computer simulations using the Wasteload Allocation Model (WLAM).

**Simulation 7a**—assumes the planning conditions for reuse and discharge for 2010 as provided by the agencies and as described in Table 1. The intent here is to simulate conditions of full implementation of planned reuse projects.

**Simulation 7b**—assumes 50% of planned reuse for 2010, and the associated increase in discharge. The intent here is to simulate conditions where planned reuse projects are only partly implemented and/or are temporarily shut-down for maintenance and/or emergencies.

**Simulation 7c**—assumes no reuse for 2010, and discharge occurs at the design capacity of the plant. The intent here is to simulate conditions of maximum discharge.

**Simulation 7d, 7e, and 7f** in Table 2 repeat the same assumptions and logic as **7a, 7b, and 7c**, respectively, except for 2020 planned conditions.

With one exception, the TDS and TIN concentrations associated with the plant discharges will be simulated at current permit limits. The one exception is for the City of Riverside's RWQCP, where the current permit limit for TIN is 13 mg/L-N for discharge less than 38 mgd and 10 mg/L-N for discharge greater than 38 mgd. Previous WLAM simulations indicated that the volume-weighted nitrate-nitrogen concentration of streambed recharge to the Chino-South management zone will exceed the nitrate-nitrogen objective under the current wasteload allocation. In all Scenario 7 simulations, the TIN concentration for the

City of Riverside's RWQCP effluent is reduced to 10 mg/L-N for all discharge to see if this change will result in compliance with the nitrate-nitrogen objective in Chino-South.

If any of the Scenario 7 simulations indicate an exceedance of a surface water or groundwater objective, then the Basin Monitoring Program Task Force will decide on how to adjust the wasteload allocation of upstream POTW dischargers and run additional WLAM simulations to assess compliance with the Basin Plan.

As an informational exercise, the results of all simulations for at Below Prado will be provided to OCWD. OCWD will use the simulation results as input data for their new computer-simulation model of its recharge facilities to estimate how much of the daily discharge at Below Prado can be captured and recharge in the Orange County management zone. With this information, the volume-weighted TIN and TDS concentration will be computed for surface water at Below Prado that recharges the Orange County management zone.

**Table 1  
POTW Plans for Use in Wasteload Allocation Scenario 7**

Agency	Year	Design Capacity (mgd)	Permit Discharge (mgd)	Permit TDS (mg/L)	Permit TIN (mg/L)	Scenario 7					Notes on Reuse and Discharge
						TDS (mg/L)	TIN (mg/L)	Plant Production (mgd)	Reuse (mgd)	Discharge (mgd)	
<b>San Timoteo Creek</b>											
City of Beaumont <sup>A</sup> Wastewater Treatment Plant #1	2010	8.0	4.0	490	6	490	6	2.5	0.7	1.8	In 2010 and 2020, reuse is for irrigation and/or artificial recharge to the Beaumont management zone, which enables the City to discharge to Cooper's Creek at a constant rate.
	2020	8.0	NA	490	6	490	6	8.0	6.2	1.8	
Yucaipa Valley Water District <sup>B</sup> H. N. Wochholz WTP	2010	6.7	4.5	540	6	540	6	3.8	1.1	2.7	In 2010, reuse is for irrigation only, so discharge to San Timoteo Creek will vary based on seasonal demand. In 2020, all wastewater effluent will be reused for irrigation and artificial recharge. 1.6 mgd of pumped groundwater from the Yucaipa management zone will be discharged to San Timoteo Creek to support riparian habitat.
	2020	11.0	NA	540	6	540	6	4.8	4.8	1.6	
<b>Santa Ana River Reach 4</b>											
City of Rialto <sup>C</sup> Rialto Wastewater Treatment Plant	2010	11.7	11.7	490	10	490	10	9.0	0.4	8.6	In 2010 and 2020, reuse is for irrigation only, so discharge to the Santa Ana River will vary based on seasonal demand. There are no plans for artificial recharge of recycled water.
	2020	12.0	NA	490	10	490	10	12.0	2.4	9.6	
San Bernardino/Colton <sup>D</sup> RIX Facility	2010	40.0	64.0	550	10	550	10	40.0	16.0	20.8	Plant Production is RIX Effluent Discharge includes 120% overproduction at RIX. In 2010 and 2020, virtually all reuse is for artificial recharge in the Bunker Hill A management zone, so discharge to the Santa Ana River at RIX is at a constant rate.
	2020	40.0	NA	550	10	550	10	64.0	16.0	44.8	
<b>Santa Ana River Reach 3</b>											
City of Riverside <sup>E</sup> Regional Water Quality Control Plant	2010	40.0	40.0	650	13<38 MGD 10>38 MGD	650	10	34.5	1.5	33.0	In 2010, reuse is for irrigation only, so discharge to the Santa Ana River will vary based on seasonal demand. In 2020, reuse is for irrigation and/or artificial recharge to the Colton and Riverside management zones, which will enable the City to reuse and discharge at constant rates.
	2020	46.0	NA	650	13<38 MGD 10>38 MGD	650	10	46.0	10.0	36.0	
Western Municipal Water District <sup>G</sup> March Wastewater Reclamation Facility	2010	3.0	NA	550	6	550	6	3.0	0.7	2.3	In 2010 and 2020, reuse is for irrigation only, so discharge to the Santa Ana River will vary based on seasonal demand. No plans for recycled water recharge.
	2020	5.0	NA	550	6	550	6	5.0	0.7	4.3	
<b>Chino Creek/Cucamonga Creek/Prado Basin</b>											
Inland Empire Utilities Agency <sup>F</sup> RP1 001 Prado	2010	20.0	NA	550	8	550	8	15.0	10.0	5.0	In 2010 and 2020, reuse is for irrigation and artificial recharge in the Chino-North management zone. Discharge to the Santa Ana River will vary based on seasonal demand for direct uses of recycled water.
	2020	20.0	NA	550	8	550	8	15.0	10.0	5.0	
Inland Empire Utilities Agency <sup>F</sup> Carbon Canyon WRP	2010	11.0	9.7	550	8	550	8	11.0	6.0	5.0	
	2020	12.0	NA	550	8	550	8	11.0	8.0	3.0	
Inland Empire Utilities Agency <sup>F</sup> RP-5	2010	15.0	15.0	550	8	550	8	12.0	3.0	9.0	
	2020	16.0	NA	550	8	550	8	12.0	6.0	6.0	
Inland Empire Utilities Agency <sup>F</sup> RP1 002 Cucamonga and RP 4	2010	38.0	NA	550	8	550	8	23.0	13.0	10.0	
	2020	38.0	NA	550	8	550	8	28.0	24.0	4.0	
Western Riverside County <sup>G</sup> Regional Wastewater Authority WTP	2010	8.0	8.0	625	10	625	10	7.2	1.0	6.2	
	2020	14.0	NA	625	10	625	10	14.0	2.0	12.0	
<b>Temescal Creek</b>											
City of Corona <sup>H</sup> Wastewater Treatment Plant #1	2010	11.5	9.0	700	10	700	10	11.3	7.7	3.6	In 2010 and 2020, reuse is for irrigation and percolation to the Temescal management zone. Discharge to the Santa Ana River will vary based on seasonal demand for direct uses of recycled water.
	2020	14.5	NA	700	10	700	10	11.6	10.1	1.5	
City of Corona <sup>H</sup> Wastewater Treatment Plant #2	2010	-	-	-	-	-	-	-	-	0.0	Effluent from Plant 2 is percolated to the Temescal management zone at the Lincoln/Cota Ponds.
	2020	-	-	-	-	-	-	-	-	0.0	
City of Corona <sup>H</sup> Wastewater Treatment Plant #3	2010	1.0	1.0	700	10	700	10	1.0	0.5	0.5	In 2010 and 2020, reuse is for irrigation only, so discharge to Temescal Creek will vary based on seasonal demand for direct uses of recycled water.
	2020	1.0	NA	700	10	700	10	1.0	0.8	0.2	
Lee Lake Water District <sup>I</sup> Wastewater Treatment Plant	2010	1.58	1.58	650	13	650	13	0.9	0.45	0.45	In 2010 and 2020, reuse is for irrigation only, so discharge to Temescal Creek will vary based on seasonal demand for direct uses of recycled water.
	2020	2.3	NA	650	13	650	13	1.2	0.7	0.5	
Elsinore Valley Municipal Water District <sup>J</sup> Regional WWRP	2010	8.0	8.0	700	13	700	13	7.8	7.3	0.5	In 2010 and 2020, reuse is for irrigation and stabilization of water levels in Lake Elsinore, so discharge to Temescal Creek is assumed to occur at a constant rate.
	2020	12.0	NA	700	13	700	13	13.6	13.1	0.5	
Eastern Municipal Water District <sup>K</sup> (all treatment plants combined)	2010	NA	52.5	650	10	650	10	NA	NA	27.6	Discharge is to Temescal Creek and occurs at a constant rate from November thru April only (six months per year). Permitted discharge is 52.5 mgd as a monthly average.
	2020	NA	NA	650	10	650	10	NA	NA	43.6	

References: A - Mark Wildermuth; B - Joe Zoba; C - William Hunt; D - Val Housel; E - Chandra Johannesson; F - LeAnne Hamilton; G - Linda Garcia; H - Lyndy Lewis; I - OWOW; J - Sudhir Mohleji; K - Jayne Joy

**Table 2  
Description of Wasteload Allocation Simulations for Scenario 7**

POTW Facility	Year	Design Capacity (mgd)	Permit Discharge (mgd)	Permit TDS (mg/L)	Permit TIN (mg/L)	Scenario 7							Notes on Reuse and Discharge
						Simulation	TDS (mg/L)	TIN (mg/L)	Plant Production (mgd)	Reuse (mgd)	Discharge (mgd)	TIN Mass Emission (lbs/day)	
<b>San Timoteo Creek</b>													
City of Beaumont WWTP #1	2010	8.0	4.0	490	6	Simulation 7a	490	6	2.5	0.7	1.8		
						Simulation 7b	490	6	2.5	0.35	2.2		
						Simulation 7c	490	6	8.0	0.0	8.0	400	32,693
	2020	8.0	NA	490	6	Simulation 7d	490	6	8.0	6.2	1.8		
						Simulation 7e	490	6	8.0	3.1	4.9		
						Simulation 7f	490	6	8.0	0.0	8.0	400	32,693
YVWD WWTP	2010	6.7	6.7	540	6	Simulation 7a	540	6	3.8	1.1	2.7		
						Simulation 7b	540	6	3.8	0.55	3.3		
						Simulation 7c	540	6	6.7	0.0	6.7	335	30,174
	2020	11.0	NA	540	6	Simulation 7d	540	6	4.8	4.8	1.6		
						Simulation 7e	540	6	4.8	2.4	2.4		
						Simulation 7f	540	6	11.0	0.0	11.0	550	49,540
<b>Santa Ana River Reach 4</b>													
City of Rialto WWTP	2010	11.7	11.7	490	10	Simulation 7a	490	10	9.0	0.4	8.6		
						Simulation 7b	490	10	9.0	0.2	8.8		
						Simulation 7c	490	10	11.7	0.0	11.7	976	47,813
	2020	12.0	NA	490	10	Simulation 7d	490	10	12.0	2.4	9.6		
						Simulation 7e	490	10	12.0	1.2	10.8		
						Simulation 7f	490	10	12.0	0.0	12.0	1,001	49,039
RIX Facility	2010	40.0	64.0	550	10	Simulation 7a	550	10	40.0	16.0	20.8		
						Simulation 7b	550	10	40.0	8.0	20.8		
						Simulation 7c	550	10	64.0	0.0	64.0	5,338	293,568
	2020	40.0	NA	550	10	Simulation 7d	550	10	64.0	16.0	44.8		
						Simulation 7e	550	10	64.0	8.0	44.8		
						Simulation 7f	550	10	64.0	0.0	64.0	5,338	293,568

POTW Facility	Year	Design Capacity (mgd)	Permit Discharge (mgd)	Permit TDS (mg/L)	Permit TIN (mg/L)	Scenario 7								Notes on Reuse and Discharge
						Simulation	TDS (mg/L)	TIN (mg/L)	Plant Production (mgd)	Reuse (mgd)	Discharge (mgd)	TIN Mass Emission (lbs/day)	TDS Mass Emission (lbs/day)	
<b>Santa Ana River Reach 3</b>														
City of Riverside RWQCP	2010	40.0	40.0	650	13<38 MGD 10>38 MGD	Simulation 7a	650	10	34.5	1.5	33.0	In 2010, reuse is for irrigation only, so discharge to the Santa Ana River will vary based on seasonal demand. In 2020, reuse is for irrigation and/or artificial recharge to the Colton and Riverside management zones, which will enable the City to reuse and discharge at constant rates.		
						Simulation 7b	650	10	34.5	0.75	33.75			
						Simulation 7c	650	10	40.0	0.0	40.0		3,336	216,840
	2020	46.0	NA	650	13<38 MGD 10>38 MGD	Simulation 7d	650	10	46.0	10.0	36.0			
						Simulation 7e	650	10	46.0	5.0	41.0			
						Simulation 7f	650	10	46.0	0.0	46.0		3,836	249,366
WMWD March WRF	2010	3.0	NA	550	6	Simulation 7a	550	6	3.0	0.7	2.3	In 2010 and 2020, reuse is for irrigation only, so discharge to the Santa Ana River will vary based on seasonal demand. No plans for recycled water recharge.		
						Simulation 7b	550	6	3.0	0.35	2.65			
						Simulation 7c	550	6	3.0	0.0	3.0		150	13,761
	2020	5.0	NA	550	6	Simulation 7d	550	6	5.0	0.7	4.3			
						Simulation 7e	550	6	5.0	0.35	4.65			
						Simulation 7f	550	6	5.0	0.0	5.0		250	22,935
<b>Chino Creek/Cucamonga Creek/Prado Basin</b>														
IEUA RP1 001 Prado	2010	20.0	NA	550	8	Simulation 7a	550	8	15.0	10.0	5.0			
						Simulation 7b	550	8	15.0	5.0	10.0			
						Simulation 7c	550	8	20.0	0.0	20.0		1,334	91,740
	2020	20.0	NA	550	8	Simulation 7d	550	8	15.0	10.0	5.0			
						Simulation 7e	550	8	15.0	5.0	10.0			
						Simulation 7f	550	8	20.0	0.0	20.0		1,334	91,740
IEUA CCWRP	2010	11.0	9.7	550	8	Simulation 7a	550	8	11.0	6.0	5.0	In 2010 and 2020, reuse is for irrigation and artificial recharge in the Chino-North management zone. Discharge		
						Simulation 7b	550	8	11.0	3.0	8.0			
						Simulation 7c	550	8	11.0	0.0	11.0		734	50,457
	2020	12.0	NA	550	8	Simulation 7d	550	8	11.0	8.0	3.0			
						Simulation 7e	550	8	11.0	4.0	7.0			
						Simulation 7f	550	8	12.0	0.0	12.0		801	55,044

POTW Facility	Year	Design Capacity (mgd)	Permit Discharge (mgd)	Permit TDS (mg/L)	Permit TIN (mg/L)	Scenario 7								Notes on Reuse and Discharge
						Simulation	TDS (mg/L)	TIN (mg/L)	Plant Production (mgd)	Reuse (mgd)	Discharge (mgd)	TIN Mass Emission (lbs/day)	TDS Mass Emission (lbs/day)	
IEUA RP5	2010	15.0	15.0	550	8	Simulation 7a	550	8	12.0	3.0	9.0			to the Santa Ana River will vary based on seasonal demand for direct uses of recycled water.
						Simulation 7b	550	8	12.0	1.5	10.5			
						Simulation 7c	550	8	15.0	0.0	15.0	1,001	68,805	
	2020	16.0	NA	550	8	Simulation 7d	550	8	12.0	6.0	6.0			
						Simulation 7e	550	8	12.0	3.0	9.0			
						Simulation 7f	550	8	16.0	0.0	16.0	1,068	73,392	
IEUA RP1 002 and RP4	2010	38.0	NA	550	8	Simulation 7a	550	8	23.0	13.0	10.0			
						Simulation 7b	550	8	23.0	6.5	16.5			
						Simulation 7c	550	8	38.0	0.0	38.0	2,535	174,306	
	2020	38.0	NA	550	8	Simulation 7d	550	8	28.0	24.0	4.0			
						Simulation 7e	550	8	28.0	12.0	16.0			
						Simulation 7f	550	8	38.0	0.0	38.0	2,535	174,306	
WRCRWA WTP	2010	8.0	8.0	625	10	Simulation 7a	625	10	7.2	1.0	6.2			In 2010 and 2020, reuse is for irrigation only, so discharge to the Santa Ana River will vary based on seasonal demand. No plans for recycled water recharge.
						Simulation 7b	625	10	7.2	0.5	6.7			
						Simulation 7c	625	10	8.0	0.0	8.0	667	41,700	
	2020	14.0	NA	625	10	Simulation 7d	625	10	14.0	2.0	12.0			
						Simulation 7e	625	10	14.0	1.0	13.0			
						Simulation 7f	625	10	14.0	0.0	14.0	1,168	72,975	
<b>Temescal Creek</b>														
City of Corona WWTP #1	2010	11.5	9.0	700	10	Simulation 7a	700	10	11.3	7.7	3.6			In 2010 and 2020, reuse is for irrigation and percolation to the Temescal management zone. Discharge to the Santa Ana River will vary based on seasonal demand for direct uses of recycled water.
						Simulation 7b	700	10	11.3	3.85	7.45			
						Simulation 7c	700	10	11.5	0.0	11.5	959	67,137	
	2020	14.5	NA	700	10	Simulation 7d	700	10	11.6	10.1	1.5			
						Simulation 7e	700	10	11.6	5.05	6.55			
						Simulation 7f	700	10	14.5	0.0	14.5	1,209	84,651	

POTW Facility	Year	Design Capacity (mgd)	Permit Discharge (mgd)	Permit TDS (mg/L)	Permit TIN (mg/L)	Scenario 7						Notes on Reuse and Discharge		
						Simulation	TDS (mg/L)	TIN (mg/L)	Plant Production (mgd)	Reuse (mgd)	Discharge (mgd)		TIN Mass Emission (lbs/day)	TDS Mass Emission (lbs/day)
Corona WWTP #3	2010	1.0	1.0	700	10	Simulation 7a	700	10	1.0	0.5	0.5			In 2010 and 2020, reuse is for irrigation only, so discharge to Temescal Creek will vary based on seasonal demand for direct uses of recycled water.
						Simulation 7b	700	10	1.0	0.25	0.75			
						Simulation 7c	700	10	1.0	0.0	1.0	83	5,838	
	2020	1.0	NA	700	10	Simulation 7d	700	10	1.0	0.8	0.2			
						Simulation 7e	700	10	1.0	0.4	0.6			
						Simulation 7f	700	10	1.0	0.0	1.0	83	5,838	
LLWD WTP	2010	1.58	1.58	650	13	Simulation 7a	650	13	0.9	0.45	0.45			In 2010 and 2020, reuse is for irrigation only, so discharge to Temescal Creek will vary based on seasonal demand for direct uses of recycled water.
						Simulation 7b	650	13	0.9	0.23	0.68			
						Simulation 7c	650	13	1.6	0.0	1.6	171	8,565	
	2020	2.3	NA	650	13	Simulation 7d	650	13	1.2	0.7	0.5			
						Simulation 7e	650	13	1.2	0.35	0.85			
						Simulation 7f	650	13	2.3	0.0	2.3	249	12,468	
Elsinore Valley MWD RWWRP	2010	8.0	8.0	700	13	Simulation 7a	700	13	7.8	7.3	0.5			In 2010 and 2020, reuse is for irrigation and stabilization of water levels in Lake Elsinore, so discharge to Temescal Creek is assumed to occur at a constant rate.
						Simulation 7b	700	13	7.8	3.65	4.15			
						Simulation 7c	700	13	8.0	0.0	8.0	867	46,704	
	2020	13.6	NA	700	13	Simulation 7d	700	13	13.6	13.1	0.5			
						Simulation 7e	700	13	13.6	6.55	7.05			
						Simulation 7f	700	13	13.6	0.0	13.6	1,475	79,397	
EMWD Discharge to Temescal Creek	2010	NA	52.5	650	10	Simulation 7a	650	10	NA	NA	27.6			Discharge is to Temescal Creek and occurs at a constant rate from November thru April only (six months per year). Maximum discharge (Simulation 7c) is based on the permitted discharge, which is a monthly average of 52.5 mgd. Discharge for Simulation 7b is the average of discharge for 7a and 7c.
						Simulation 7b	650	10	NA	NA	40.1			
						Simulation 7c	650	10	NA	NA	52.5	2,189	142,301	
	2020	NA	NA	650	10	Simulation 7d	650	10	NA	NA	43.6			
						Simulation 7e	650	10	NA	NA	?			
						Simulation 7f	650	10	NA	NA	?			

**Notes:** For Simulations 7a and 7d, reuse and discharge occur at planned rates.  
For Simulations 7b and 7e, reuse is assumed to occur at 50% of planned rates. Discharge is increased accordingly.  
For Simulations 7c and 7f, discharge is assumed to occur at design capacity of the POTW facility.