

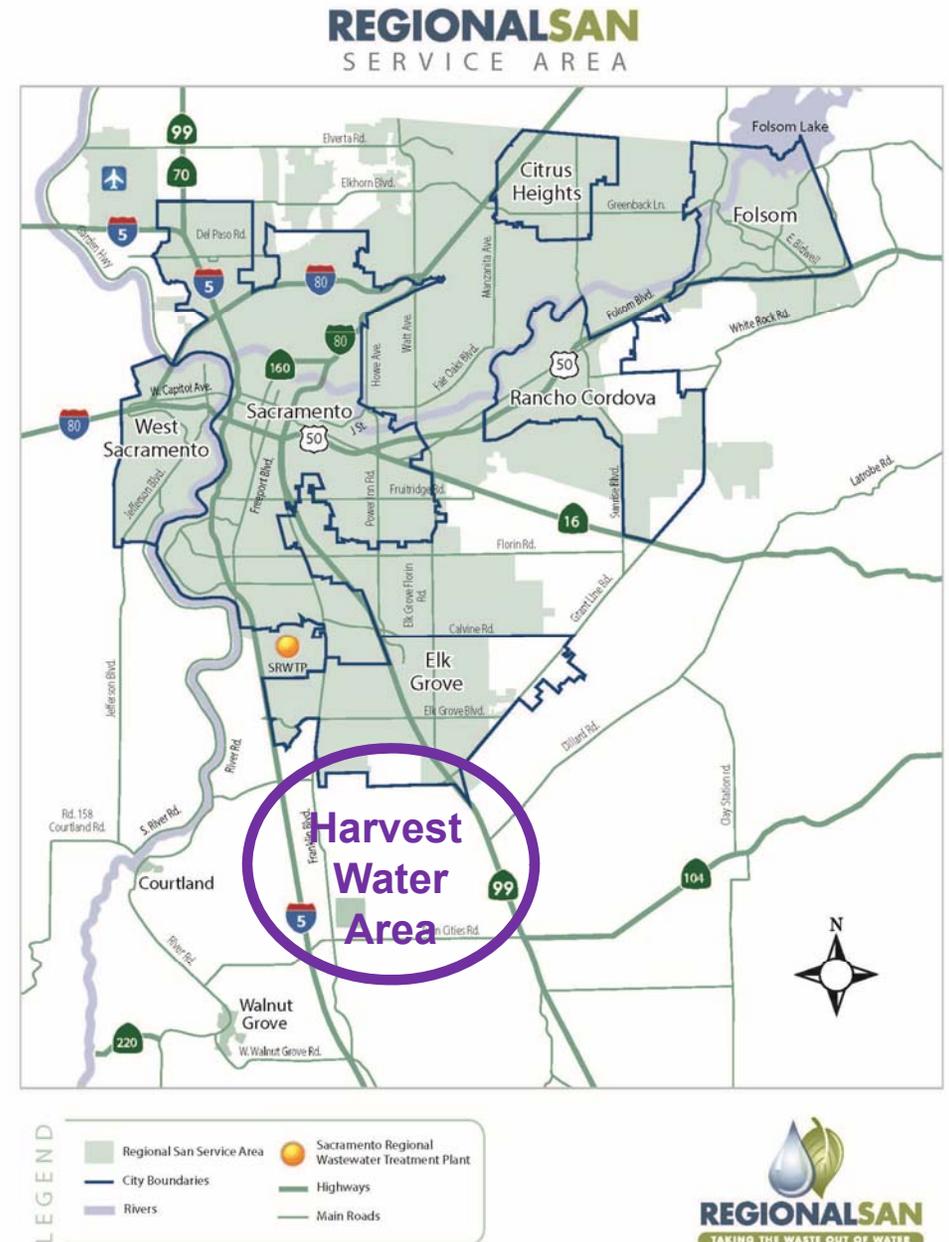


# Declining Water Flows and Impacts to Regional San and Sacramento Wastewater Treatment Plant May 6, 2022

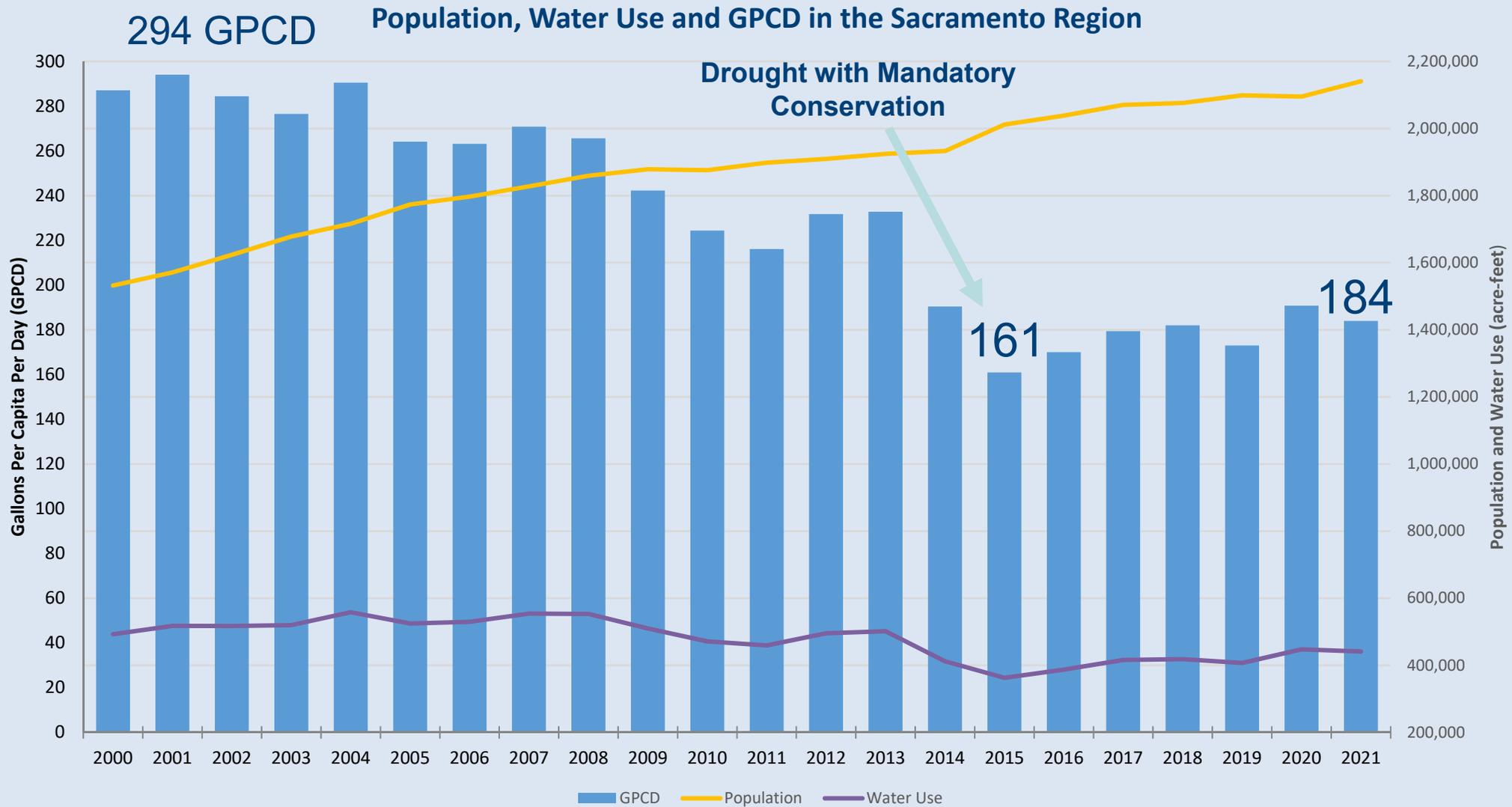
**Presenter:**  
**Jose R. Ramirez, P.E.**  
**Water Recycling Program Manager**

# About Regional San

- Provides wastewater services for approximately 1.6 million customers
- Cleans approximately 135 million gallons per day (mgd) of wastewater
- Governed by a 17-member Board of Directors
- Coordinates with over 20 water purveyors within our service area



# Population and Water Use in Sacramento Region 2000-2021 (Source: RWA)



**Note: GPCD includes Residential, Commercial, and Industrial Water Users**

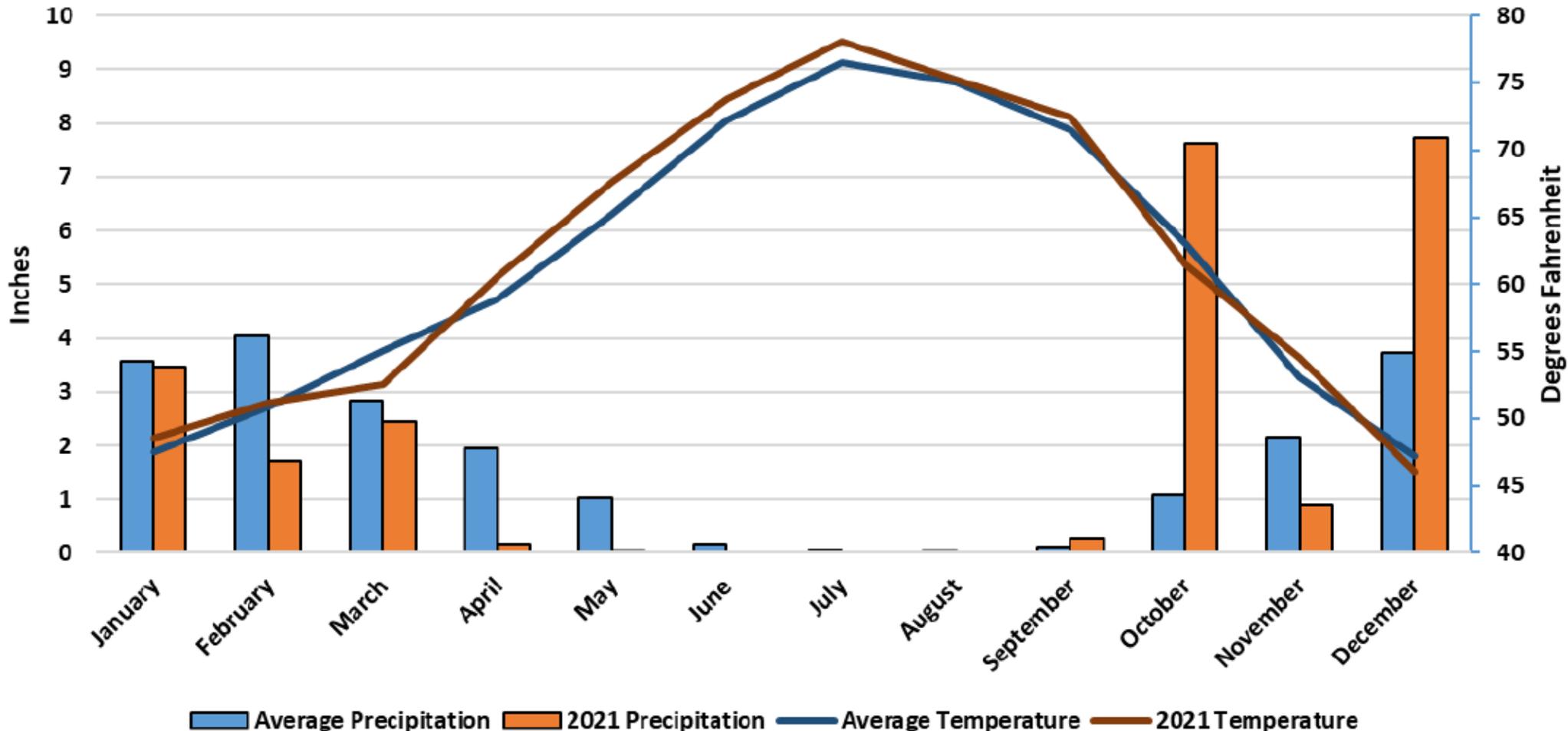
# Regional Avg. Residential Gallons Per Capita Per Day (Source: RWA)

Year	Regional Average Residential Gallons Per Capita Per Day (R-GPCD)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
2021	73	70	84	126	161	181	188	173	157	115	74	67	122
2020	66	79	86	97	142	177	193	192	166	142	102	77	127
2019	65	65	67	87	119	155	177	179	162	128	111	70	115
2018	69	75	70	89	131	171	195	176	156	133	102	69	120
2017	69	64	71	77	142	168	197	186	170	136	83	73	120
2016	68	66	68	93	123	164	185	180	159	108	76	69	113
2015	78	77	102	102	112	135	149	149	140	114	76	67	108

# Precipitation and Temperature in Sacramento Region (Source: RWA)

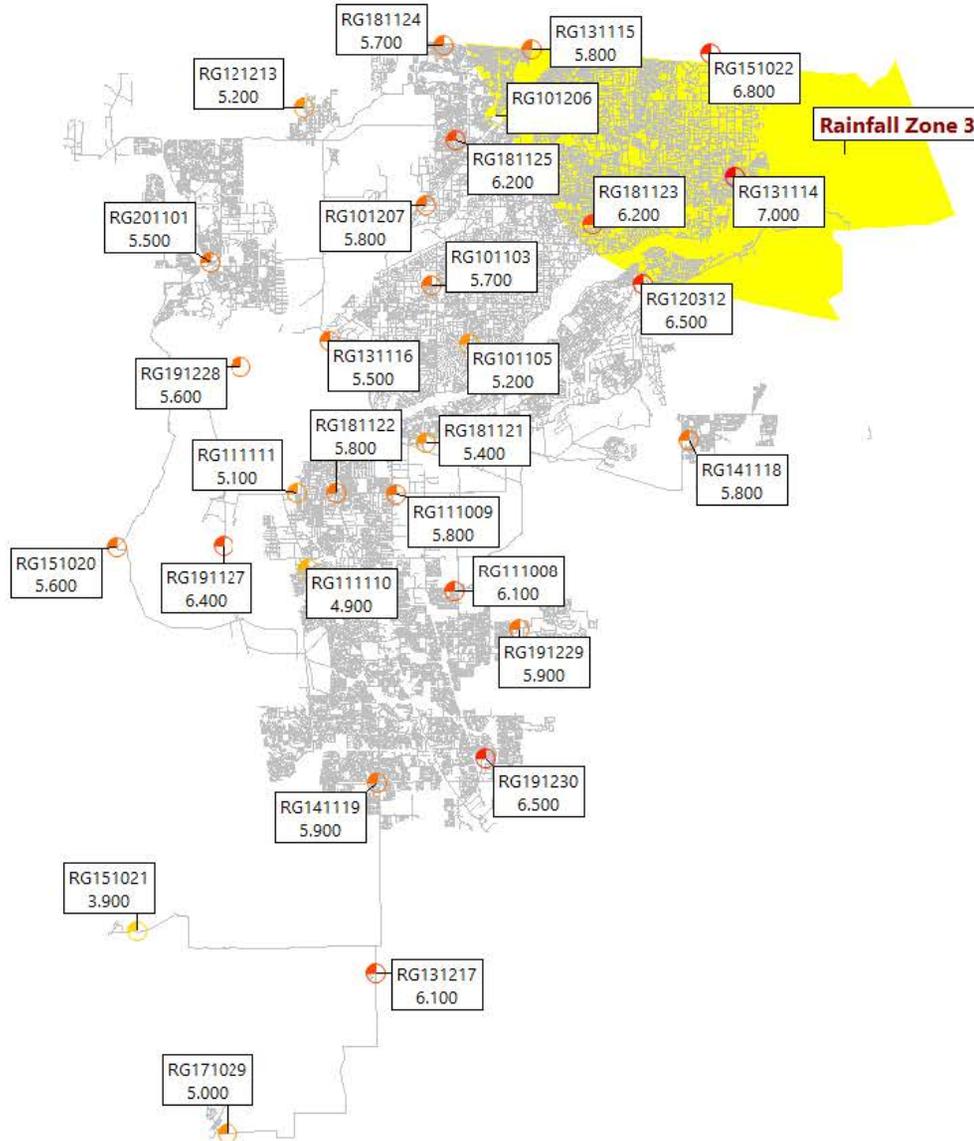
Water Agency	2021 Residential Gallons Per Capita Per Day (R-GPCD)											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Sacramento Regional Average	73	70	84	126	161	181	188	173	157	115	74	67

Precipitation and Temperature, Average (1998-2020) and 2021



# Total Rain from October 2021 Two-Day Storm Event

**Oct 24, 2021 Storm**  
**Total Rain (inches) on**  
**10/23/2021 3:00pm -**  
**10/25/2021 12:00pm**  
**(Duration: ~ 1.9 days)**



**\*Return Period (yrs) for Various Storm Durations**

RG	Duration					Total Rainfall, in
	3 hrs	6 hrs	12 hrs	24 hrs	48 hrs	
RG101103	13.8	57.1	>100	>100	>100	5.7
RG101105	7.1	31.5	85.0	>100	54.5	5.2
RG101206	had rain data					bed rain data
RG101207	16.9	63.7	>100	>100	>100	5.8
RG111008	34.2	94.6	>100	>100	>100	6.1
RG111009	20.0	89.3	>100	>100	>100	5.8
RG111110	8.7	29.6	47.0	>100	37.0	4.9
RG111111	8.4	33.3	70.0	>100	43.0	5.1
RG120312	17.5	78.6	>100	>100	>100	6.5
RG121213	9.2	29.6	68.3	>100	53.0	5.2
RG131114 (Zone 3)	15.1	55.2	>100	>100	**no data	7.0
RG131115 (Zone 3)	11.4	38.9	>100	>100	**no data	5.8
RG131116	18.8	64.3	>100	>100	83.6	5.5
RG131217	65.2	>100	>100	>100	>100	6.1
RG141118	11.3	47.2	>100	>100	>100	5.8
RG141119	47.4	>100	>100	>100	>100	5.9
RG151020	11.3	62.5	>100	>100	91.8	5.5
RG151021	5.5	11.5	18.2	27.6	5.5	3.9
RG151022 (Zone 3)	15.9	67.4	>100	>100	**no data	6.8
RG171029	8.7	33.3	49.2	>100	42.0	5.0
RG181121	10.0	43.5	>100	>100	71.8	5.4
RG181122	14.4	67.9	>100	>100	>100	5.8
RG181123 (Zone 3)	9.7	49.8	>100	>100	**no data	6.2
RG181124	17.5	53.6	>100	>100	99.1	5.7
RG181125	20.0	82.1	>100	>100	>100	6.2
RG191127	23.1	>100	>100	>100	>100	6.4
RG191228	19.4	65.1	>100	>100	85.4	5.5
RG191229	32.9	89.3	>100	>100	>100	5.9
RG191230	89.5	>100	>100	>100	>100	6.5
RG201101	10.0	45.4	>100	>100	83.6	5.5

\*Return periods are calculated based on rainfall depth and duration. They are calculated from the depth-duration-frequency data from the County of Sacramento Drainage Manual Volume 2 Chapter 4.

\*\* Cannot calculate the return period because the depth-duration-frequency data is not available for Zone 3, duration = 48 hrs.

# Sacramento Regional Wastewater Treatment Plant – Historical Effluent Flows (MGD)

Month/Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
January	164.2	157	125.0	129.4	111.6	111.6	129.0	183.2	128.8	137.7	109.7	116.2
February	153.0	167	118.7	120.7	127.5	125.4	111.3	200.7	112.6	170.5	107.0	110.3
March	151.6	204	134.1	122.3	122.0	109.9	141.8	151.6	141.4	158.5	113.8	113.3
April	149.0	160	133.2	120.9	119.7	110.4	112.8	147.0	126.7	129.3	114.9	106.6
May	140.8	151	117.2	117.4	107.5	102.1	108.6	124.4	115.3	136.7	106.9	111.7
June	138.5	149	114.1	115.8	106.3	99.4	106.1	114.4	108.4	123.3	106.3	109.7
July	138.9	141	114.5	116.4	105.8	99.6	104.9	109.1	109.5	113.9	106.4	105.4
August	137.0	139	116.0	116.0	107.1	98.6	104.4	109.9	114.5	119.3	105.4	105.1
September	136.9	131	114.3	117.1	105.7	100.1	104.6	109.0	116.1	117.1	104.0	110.5
October	142.6	123	120.0	114.2	106.2	100.4	119.1	107.6	111.8	110.6	99.2	128.0
November	150.1	120	126.6	118.9	110.3	105.3	113.7	115.0	114.3	105.2	113.2	112.5
December	175.4	119	160.1	114.6	145.2	109.2	125.6	109.5	118.3	124.4	115.6	148.8
<b>Average</b>	<b>148</b>	<b>147</b>	<b>124</b>	<b>119</b>	<b>115</b>	<b>106</b>	<b>115</b>	<b>132</b>	<b>118</b>	<b>129</b>	<b>109</b>	<b>115</b>

= Typical Irrigation Season. There may not enough effluent available to met all our future recycled water demands.

# Summary of Declining Water Flows and Impacts To Sacramento Regional Wastewater Treatment Plant (SRWTP)

- Delay in requesting an increased ADWF effluent discharge permitted capacity, which is currently set at 181 mgd.
- Increase in influent and effluent concentrations (less dilution).
- Limits on effluent discharges during low flows and return flows at Sacramento River. Added onsite storage capacity at SRWTP due to lower flows and return flows in the Sacramento River.
- Future influent reductions may impact the availability of recycled water during the irrigation season.