

# MALAGA WATER DISTRICT

## 2018 WATER USE EFFICIENCY PROGRAM (PRELIMINARY)

### BACKGROUND INFORMATION

#### Distribution System Leakage

The difference between the amount of water supplied to a system and its authorized water consumption is defined as distribution system leakage (DSL). The volume of DSL in a water system is calculated as the difference between the water supply and the authorized water consumption. There are many sources of DSL in a typical water system, including water system leaks, inaccurate supply metering, inaccurate customer metering, illegal water system connections or water use, fire hydrant usage, water main flushing, well backwash, and reservoir overflows resulting from malfunctioning telemetry and control equipment. Several of these usage types, such as water main flushing, fire hydrant usage and well backwash, may be considered authorized uses if they are tracked and estimated. Although real losses from the distribution system, such as reservoir overflows and leaking water main, should be tracked for accounting purposes, these losses must be considered leakage.

The amount of DSL has varied from year to year. **Table 1** provides a summary of the DSL calculated over the past 4 years. Current DSL appears to be well below 10-percent.

**Table 1**  
**Distribution System Leakage (gallons)**

	2014	2015	2016	2017
Leaks (Not in Calcs)	9,000	0	900,000	625,000
<b>Authorized Consumption</b>				
Sales	61,831,994	61,029,880	60,648,290	57,752,510
Fire Fighting	8,000,000	5,000,000	2,750,000	6,500,000
Construction	542,387	3,500	10,000	15,000
MWD Irrigation	28,400	27,500	26,100	0
Flushing	3,500	3,500	0	0
County	0	200,000	0	0
<b>Total Authorized Use</b>	<b>70,406,281</b>	<b>66,264,380</b>	<b>63,434,390</b>	<b>64,267,510</b>
<b>Total Pumped</b>	<b>78,021,921</b>	<b>78,697,741</b>	<b>70,049,660</b>	<b>68,182,104</b>
<b>DSL Total</b>	<b>7,615,640</b>	<b>12,433,361</b>	<b>6,615,270</b>	<b>3,914,594</b>
DSL Percentage	9.8%	15.8%	9.4%	5.7%
DSL 3-Year Average		12.8%	11.7%	10.3%

## Water Supply Characteristics

MWD is supplied by two groundwater wells with 50-hp pumps in a wellhouse adjacent to the MWD office in the Malaga town site. Well 2 was tested in 1972 at 1,000 gpm with 4 foot drawdown. Well 5 was drilled in 2012 but as of early 2018 has not yet been equipped. Well 5 was tested at 300 gpm with drawdown less than 1 foot.

Well 1 = 370 gpm

Well 2 = 340 gpm

Well 5 (future) = 300 gpm estimated

MWD's water rights are complex and are a combination of 20 separate water rights dating back to 1901. The combined total of the water rights is as follows:

Annual withdraw = 857 acre feet per year (or 280 million gallons per year, or 0.77 million gallons per day on average)

Maximum instantaneous withdraw = 2,780 gallons per minute.

MWD does not anticipate needing additional water rights for at least the next 20 years.

Population and Water Use forecasts are as follows:

Year	2017	2025	2040
Population	1,570	1,840	2,300
Number of connections	546	639	800
Average Day Use	200,000 gal	230,000 gal	280,000 gal
Maximum Day Use	450,000 gal	550,000 gal	670,000 gal