



# **West Basin Municipal Water District**

## **Drought Rationing Plan Allocation Year 2015**

**Adopted March 23, 2015  
Declared April 27, 2015  
Effective July 1, 2015**

## **1. Introduction**

West Basin Municipal Water District is a member public agency of the Metropolitan Water District of Southern California (MWD), and is responsible for the wholesale delivery of potable imported water by Metropolitan to eight retail water agencies and one groundwater replenishment agency, which collectively serve about 900,000 people within the West Basin service area.

West Basin is pursuing a water reliability strategy of increasing local control over its water supplies within its service territory by increasing water conservation and water recycling, expanding education programs and introducing ocean desalination to the water supply portfolio by the year 2022. Today, however, our region still relies on water from Northern California and the Colorado River for nearly two-thirds of our supply. This reliance on hydrologically-dependent supplies leaves our region vulnerable to drought and the long-term impacts of changing climate patterns.

Drought periods in Southern California are happening more frequently and with greater severity. When MWD does not have access to the supplies necessary to meet total demands and has to allocate shortages in supplies to West Basin and its other member agencies, it enacts the Water Supply Allocation Plan as a demand management tool to extend the availability of storage reserves.

On March 23, 2015, the West Basin Board adopted an update to the “Water Shortage Allocation Plan” and changed the name to Drought Rationing Plan (Plan). When MWD implements the WSAP, the Drought Rationing Plan is necessary for two primary reasons: 1) to help achieve MWD’s (and the Governor’s) conservation goal; and 2) equitably recover any financial penalties from our customer agencies should West Basin fall short of the goal. The Plan includes a “regional penalty assessment” policy that only assesses financial penalties to West Basin’s customer agencies if West Basin itself incurs penalties.

The current drought (2012 to present) has been unprecedented in terms of increasing average temperatures and the scarcity of snowpack in the Sierra Nevada. In 2014, MWD was forced to withdraw almost one-half of the available balance of the region’s collective stored water. Without a significant decrease in demand in 2015, MWD was projecting that another one-half of the remaining balance would need to be withdrawn. Governor Brown’s April 1, 2015 Executive Order required a statewide reduction in water use by 25% compared to 2013 and added urgency to MWD’s consideration of implementing the WSAP. Also in April 2015, the MWD Board of Directors approved enacting the WSAP at a Level 3, which targets a 15% reduction in demand (5% for each Level).

## **2. Metropolitan Water District’s *Water Supply Allocation Plan***

Metropolitan’s Board of Directors approved the first Water Supply Allocation Plan in February 2008 and updated its WSAP in December 2014. It is based on a guiding

principle developed over fifteen years prior as part of the Water Surplus and Drought Management (WSDM) Plan. The guiding principle states:

“Metropolitan will encourage storage of water during periods of surplus and work jointly with its member agencies to minimize the impacts of water shortages on the region’s retail consumers and economy during periods of shortage.”

Fairness in allocation and minimizing regional hardship to retail water consumers remained central themes in the development of a specific formula for allocating shortages across southern California. The formula uses different adjustments and credits to balance impacts of shortage at the retail level, where local supplies can vary dramatically, and provide equity on the wholesale level among member agencies. It also attempts to take into account; growth in demand, local investments, changes in local supply conditions, the reduction in potable water demand from recycled water, and the implementation of water conservation programs.

The WSAP was updated for the current period to reflect minimal changes in the formula and to address issues that arose as a result of the prior allocation. These changes are described below.

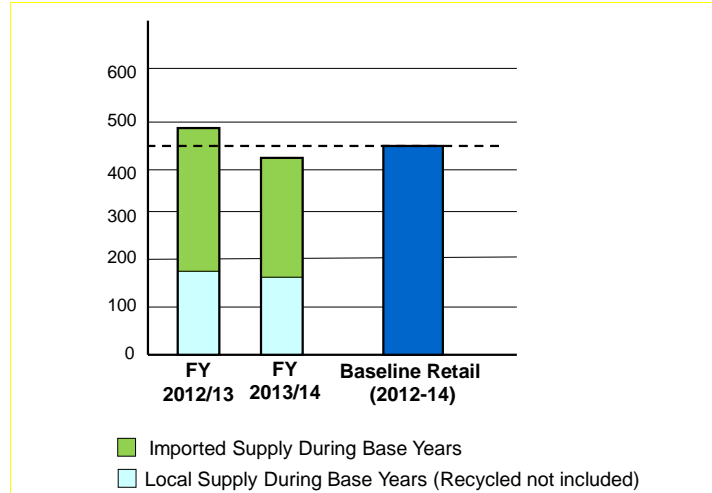
### **3. West Basin’s Shortage Allocation Methodology**

Based closely on Metropolitan’s methodology, West Basin’s Plan model has five basic components in determining each customer agency’s share of West Basin’s allocation from Metropolitan, briefly described as follows.

#### **A. Establishing Baseline Water Use**

In order to project a customer agency’s retail demand and imported supply needs for the year in which an allocation occurs, it is necessary to first establish a historical base period for water supply and delivery data. The base period for *local supplies* (groundwater production and recovery) and *imported water demand* (full-service, seawater barrier, seasonal shift and in-lieu groundwater replenishment) are calculated using data from the previous two non-shortage fiscal years, 2012-2013 and 2013-2014. The sum of *local supplies* and *imported water demand* provides an estimate of the average *retail demand* for each customer agency over the base period. Non-potable recycled water is not included in this calculation due to its demand-hardening effect. Figure 1 provides an example of how the baseline water use is established.

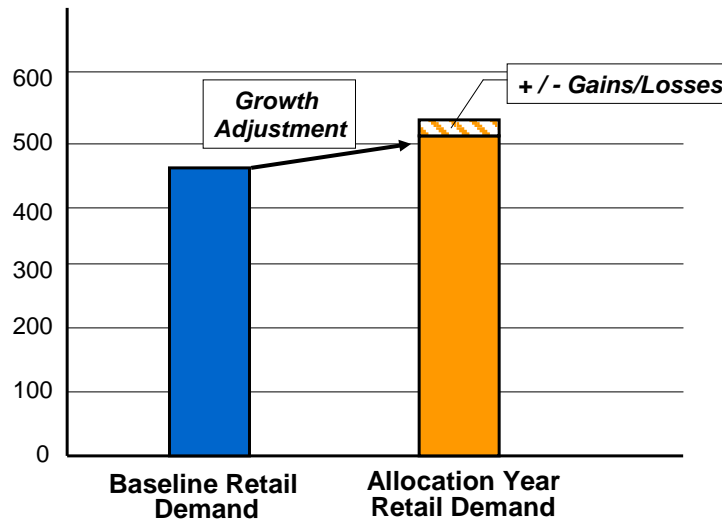
**Figure 1. Example of Baseline Calculation**



**B. Establishing Allocation Year Information**

Base period *retail demand* is adjusted forward for growth using a factor that is based on the population increase from the base period to the year of allocation (a 2015 allocation is one year after the end of the base period). As Figure 2 shows, gains or losses are also added to the base period *local supplies* to more accurately estimate actual supplies in the allocation year. Gains in *local supplies* must be increases that are planned and scheduled, such as groundwater production that does not mine a basin, or a new brackish water treatment facility. Losses of *local supplies* due to hydrology or water quality are subtracted from the base period.

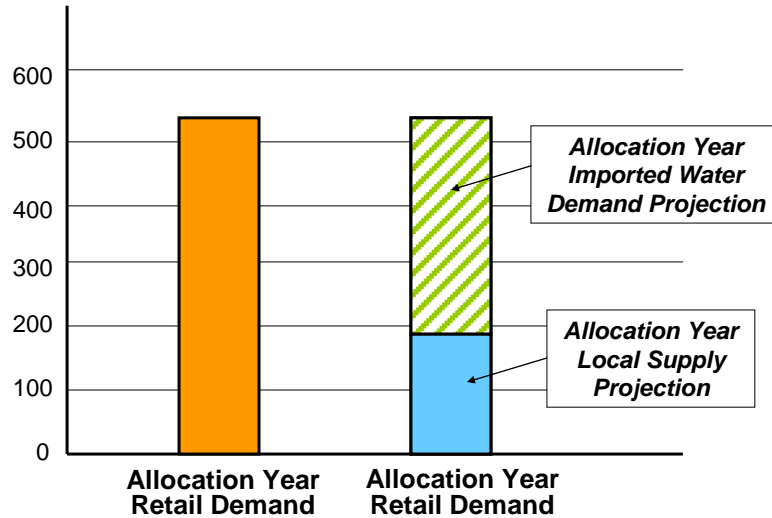
**Figure 2. Example of Allocation Year Adjustments**



**C. Calculating Initial Minimum Allocation**

After adjustments are made to *local supplies* to reflect allocation year conditions, and subtracted from *retail demand*, which has been adjusted for growth to the allocation year, the result is an agency's estimated need for imported water from West Basin.

**Figure 3. Example of Allocation Year Imported Water Demand Projection**

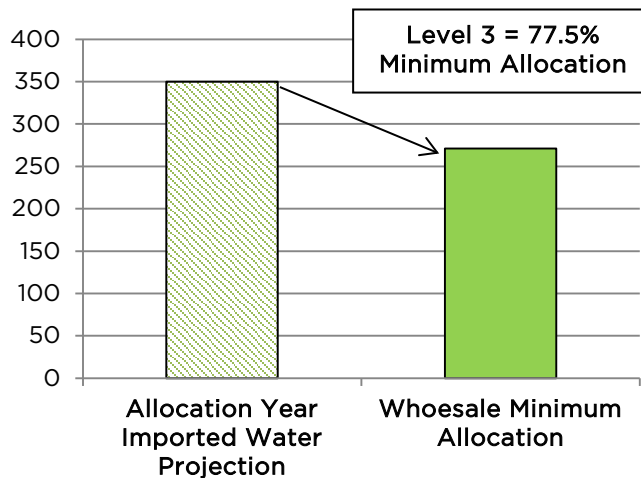


As shown in Figure 4, the projected imported water demand is what is allocated according to the declared regional shortage level (Level 3 for the 2015 Allocation). The following concepts help explain the allocation further:

- **Regional Shortage Levels:** each level from one to ten represents a five percent increment of Regional Shortage Percentage from 5 to 50 percent.
- **Regional Shortage Percentage:** the percentage difference between available supplies and allocation year demands, in 5 percent increments from 5 to 50 percent.
- **Wholesale Minimum Allocation:** ensures that customer agencies will not experience shortages on the wholesale level (from West Basin) that are greater than one-and-a-half times the Regional Shortage Percentage, according to the following table:

Regional Shortage Level	Regional Shortage Percentage	Wholesale Minimum Allocation	Retail Impact Adjustment
1	5%	7.5%	2.5%
2	10%	15.0%	5.0%
3	15%	22.5%	7.5%
4	20%	30.0%	10.0%
5	25%	37.5%	12.5%
6	30%	45.0%	15.0%
7	35%	52.5%	17.5%
8	40%	60.0%	20.0%
9	45%	67.5%	22.5%
10	50%	75.0%	25.0%

**Figure 4. Example of Initial Minimum Allocation**



#### **D. Minimum Allocation Adjustments and Credits**

Unequal impacts of across-the-board allocation at the retail level can be dramatic depending primarily on the amount of local supplies, if any, held by each customer agency. That is why the allocation methodology assigns additional water supplies based on the following adjustments and credits:

- **Retail Impact Adjustment:** Used in Regional Shortage Level 3 and above to ensure that customer agencies with a high level of dependence on imported water do not experience disparate shortages at the retail level compared to other agencies. Agencies that are 100% dependent on imported water, for example,

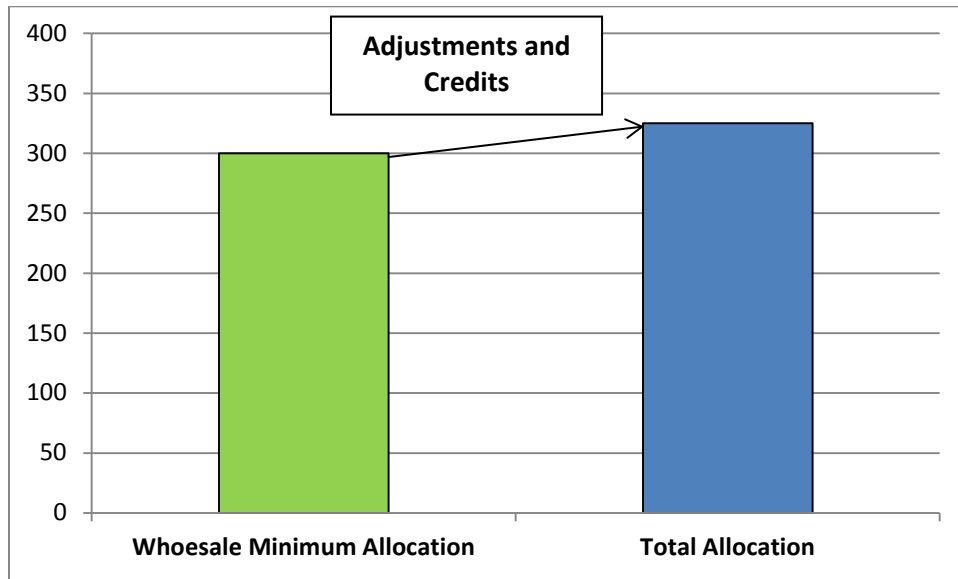
are allocated at the Regional Shortage Percentage instead of the Wholesale Minimum Allocation.

- Conservation Demand Hardening:** Based on each customer agency's gallons per capita per day (GPCD) from a 10-year selected period's highest average, ending in years between 2004 and 2010, as compared to the 2015 GPCD. The difference in GPCD was converted to acre-feet and the regional shortage percentage and GPCD percent reduction was applied for a resulting amount of additional water given back to the agency for conservation efforts. This is consistent with requirements for SBx7-7 "20x2020" reporting. The calculation for the credit is:

$$\text{Credit} = \text{Conservation} \times (10\% + \text{RSL}\%) \times (1 + \text{Conservation}\%) \times \text{Dependence on MWD}\%$$

RSL = Regional Shortage Level

**Figure 5. Example of Adjustments to Minimum Allocation at Level 3**



### E. Total Allocation

The total amount of imported water a customer agency will receive from West Basin at any given Regional Shortage Level, factoring in local supplies, wholesale minimum allocation, retail impact adjustment, and conservation.

## 4. Plan Implementation

### A. Declaration of Regional Shortage

On April 14, 2015, Metropolitan's Board of Directors declared a regional drought within their service territory, and triggered the implementation of their Water Supply Allocation Plan at a Regional Shortage Level 3, seeking at minimum a 15% reduction in regional water use. In order to pass through rationing down to the retail level, and assign any penalties to its customer agencies that West Basin may incur from exceeding its allocation from Metropolitan, the West Basin Board of Directors also approved implementing their Drought Allocation Plan at Level 3 on April 27, 2015.

## **B. Key Dates for Implementation**

The generic allocation calendar below demonstrates that declarations of regional drought are typically made in April when hydrologic conditions statewide are sufficiently understood. To allow time for retail level agencies to adequately prepare their operations and customers for allocation conditions, the allocation effective period begins July 1 and runs 12 consecutive months through June 30 of the following year. Final accounting of customer agency imported water use and assessment of penalties, if applicable, occurs after the end of the allocation period, beginning in August of that year.



**Figure 6. Allocation Timeline**

Year	Month	Year 1 Board Allocation Decision	Year 1 Allocation Year	Year 2 Board Allocation Decision	Year 2 Allocation Year
YEAR 1	January	<b>Declaration</b>	<b>Effective Period Continuous Tracking Of Member Agency Local Supply and Imported Water Use</b>	<b>Declaration</b>	
	February				
	March				
	April				
	May				
	June				
	July				
	August				
	September				
	October				
	November				
	December				
YEAR 2	January		<b>Assess and Collect Penalties</b>	<b>Declaration</b>	
	February				
	March				
	April				
	May				
	June				
	July				
	August				
	September				
	October				
	November				
	December				
YEAR 3	January				<b>Effective Period Continuous Tracking Of Member Agency Local Supply and Imported Water Use</b>
	February				
	March				
	April				
	May				
	June				

**C. Allocation Adjustments**

As a member agency of Metropolitan, West Basin is provided the opportunity to request changes to its allocation through an appeals process. Likewise, customer agencies of West Basin are provided the opportunity to appeal to their individual allocations from West Basin based on new or corrected information. Grounds for requesting a change can include, but are not limited to:

- Errors in historical data used in base period calculations
- Unforeseen losses or gains in local supplies
- Extraordinary increases in local supplies
- Adjustments in credits for conservation

In some cases, West Basin has no flexibility to change a customer agency's allocation unless it results in a change to West Basin's total allocation with Metropolitan. West Basin staff will, however, work with customer agencies to determine whether appeals to Metropolitan are warranted, and if so, to prepare an appeal for review by Metropolitan.

#### **D. Tracking and Reporting**

Subsequent to the implementation of its Plan, West Basin will produce monthly reports of each customer agency's imported water use compared to its allocations based on monthly delivery patterns (historical averages) for the purposes of tracking and communicating potential underage/overage of an agency's annual allocation.

#### **E. Allocation Penalty Rates and Billing**

##### ***Allocation Penalty Rates***

West Basin will enforce customer agency allocations through a penalty rate structure similar to what West Basin is subject to in Metropolitan's WSAP. Penalties will only be assessed to a West Basin retail customer agency if a retail customer agency exceeded its allocation under the Drought Rationing Plan AND West Basin exceeded its allocation with MWD under the Water Supply Allocation Plan. In such a case, West Basin's total penalty will be assessed to each retail customer agency that exceeded its Drought Rationing Plan allocation on a pro-rata basis. No billing or assessment of penalty rates will take place until the end of the twelve-month allocation period. Penalty rates are in addition to the base rate of the water purchased.

Table 1 demonstrates that the penalty rate structure is an ascending block structure that provides a lower penalty for minor overuse of allocations and a higher penalty for major overuse of allocations.

**Table 1. West Basin Allocation Penalty Rates**

<b>Usage Above Allocation</b>	<b>Penalty Rate</b>
100% - 115%	\$1,480/AF
Above 115%	\$2,960 AF (2 x \$1,480/AF)

- Based on turf removal costs
- Turf removal saves ~44 gallons per year per square foot for 10 years
- \$2/sq. ft. program = \$1,480 AF
- \$4/sq. ft. program = \$2,960 AF

##### ***Use of Penalty Revenues***

According to the Drought Allocation Plan policy adopted by the West Basin Board of Directors, any penalty funds collected by West Basin from customer agencies will be applied to any penalty owed to Metropolitan.

## ***West Basin Billing***

During the allocation period, customer agency water bills from West Basin will remain the same. Only at the end of the twelve-month allocation period will West Basin calculate each customer agency's potable water use (imported plus local supply) based on the local supply certification and the West Basin allocation model, and determine which agencies exceeded their annual allocation. West Basin will then apply the penalty rate structure discussed above to usage in excess of the annual allocation.

In recognition that penalties can be potentially significant to a customer agency, West Basin will allow payment of the total penalty for a customer agency to be spread evenly over three consecutive monthly billing periods, beginning in August following the allocation period.

## **5. Water Reliability 2020**

West Basin is planning and investing in its WR 2020 program to reduce its dependence on imported water to mitigate future water shortages and allocation impacts on West Basin's customers.

## **6. West Basin Contact Information**

For questions directly related to West Basin's Drought Allocation Plan, please contact the following staff:

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