

# 5. Water Supplies Contingency Plan

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## 5.1. Overview

Recent water supply challenges throughout the American Southwest and the State of California have resulted in the development of a number of policy actions that water agencies would implement in the event of a water shortage. In southern California, the development of such policies has occurred at both the wholesale and retail level. This section describes new and existing policies that Metropolitan, MWDOC and the YLWD have in place to respond to water supply shortages, including a catastrophic interruption and up to a 50 percent reduction in water supply.

## 5.2. Shortage Actions

### Metropolitan

As an importer of water from multiple sources, including both the Colorado River and the State Water Project, a number of water supply challenges have impacted the reliability of Metropolitan's imported supplies. In response to these challenges, Metropolitan is utilizing existing policies as well as developed new ones.

The first action that Metropolitan implements in the event of a water shortage is the suspension and/or reduction of its interruptible supplies, which are supplies sold at a discount in return for the buyers agreeing to be the first to be cutback in the event of a shortage. Metropolitan currently has two interruptible programs for agricultural users and groundwater replenishment, under which supplies were either suspended or reduced in 2007.

In addition, in preparation for the possibility of being unable to meet "firm demands" (non-interruptible supplies) of its member agencies, in February 2008, the Metropolitan's Board of Directors (Board) adopted the Water Supply Allocation Plan (WSAP), which was subsequently updated in June 2009.

Metropolitan's plan includes the specific formula for calculating member agency supply allocations and the key implementation elements needed for administering an allocation. Metropolitan's WSAP is the foundation for the urban water shortage contingency analysis required under Water Code Section 10632 and is part of Metropolitan's 2010 RUWMP.

Metropolitan's WSAP was developed in consideration of the principles and guidelines described in Metropolitan's 1999 Water Surplus and Drought Management Plan

(WSDM), with the objective of creating an equitable needs-based allocation. The plan's formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level for shortages of Metropolitan supplies of up to 50 percent. The formula takes into account: impact on retail customers and the economy; growth and population; changes in supply conditions; investments in local resources; demand hardening aspects of non-potable recycled water use; implementation of conservation savings program; participation in Metropolitan's interruptible programs; and investments in facilities.

The formula is calculated in three steps: base period calculations, allocation year calculations, and supply allocation calculations. The first two steps involve standard computations, while the third section contains specific methodology developed for the WSAP, as described below:

***Step 1: Base Period Calculations*** – The first step in calculating a water supply allocation is to estimate water supply and demand using a historical base period with established water supply and delivery data. The base period for each of the different categories of demand and supply is calculated using data from the three most recent non-shortage years, 2004-2006.

***Step 2: Allocation Year Calculations*** – The next step in calculating the water supply allocation is estimating water needs in the allocation year. This is done by adjusting the base period estimates of retail demand for population or economic growth and changes in local supplies.

***Step 3: Supply Allocation Calculations*** – The final step is calculating the water supply allocation for each member agency based on the allocation year water needs identified in Step 2. Each element and its application in the allocation formula are discussed in detail in Metropolitan's WSAP.

In order to implement the WSAP, the Metropolitan Board makes a determination on the level of the regional shortage, based on specific criteria, in April each year. If it is determined allocations are necessary, they go into effect in July for that year and remain for a 12-month period, although the schedule is at the discretion of Metropolitan's Board.

Metropolitan's 2010 RUWMP forecasts that Metropolitan will be able to meet projected firm demands throughout the forecast period from 2015 to 2035. However, these projections do not mean that Metropolitan would not implement its WSAP during this period.

## MWDOC

To prepare for the potential allocation of imported water supplies from Metropolitan, MWDOC worked collaboratively with its 28 member agencies to develop its own Water Supply Allocation Plan (MWDOC WSAP), adopted January 2009, to allocate imported water supplies at the retail level. The MWDOC WSAP lays out the essential components of how MWDOC will determine and implement each member agency's allocation during a time of shortage.

The MWDOC WSAP uses a similar method and approach, when reasonable, as that of the Metropolitan's WSAP. However, MWDOC's plan remains flexible to use an alternative approach when Metropolitan's method produces a significant unintended result for the member agencies. The MWDOC WSAP model follows five basic steps to determine a retail agency's imported supply allocation.

***Step 1: Determine Baseline Information*** – The first step in calculating a water supply allocation is to estimate water supply and demand using a historical base period with established water supply and delivery data. The base period for each of the different categories of demand and supply is calculated using data from the last three non-shortage years – calendar years, 2004, 2005, and 2006.

***Step 2: Establish Allocation Year Information*** – In this step, the model adjusts for each member agency's water need in the allocation year. This is done by adjusting the base period estimates for increased retail water demand based on growth and changes in local supplies.

***Step 3: Calculate Initial Minimum Allocation Based on Metropolitan's Declared Shortage Level*** – This step sets the initial water supply allocation for each member agency. After a regional shortage level is established, MWDOC will calculate the initial allocation as a percentage of adjusted Base Period Imported water needs within the model for each member agency.

***Step 4: Apply Allocation Adjustments and Credits in the Areas of Retail Impacts, Conservation, and the Interim Agriculture Water Program*** – In this step, the model assigns additional water to address disparate impacts at the retail level caused by an across-the-board cut of imported supplies. It also applies a conservation credit given to those agencies that have achieved additional water savings at the retail level as a result of successful implementation of water conservation devices, programs and rate structures.

***Step 5: Sum Total Allocations and Determine Retail Reliability*** – This is the final step in calculating a retail agency's total allocation for imported supplies. The model sums an agency's total imported allocation with all of the adjustments and credits and then calculates each agency's retail reliability compared to its Allocation Year Retail Demand.

The MWDOC WSAP includes additional measures for plan implementation, including the following:

- **Appeal Process** – An appeals process to provide member agencies the opportunity to request a change to their allocation based on new or corrected information. MWDOC anticipates that under most circumstances, a member agency’s appeal will be the basis for an appeal to Metropolitan by MWDOC.
- **Melded Penalty Rate Structure** – At the end of the allocation year, MWDOC would only charge a penalty to each member agency that exceeded their allocation if MWDOC exceeds its total allocation and is required to pay a penalty to Metropolitan. Metropolitan enforces allocations to member agencies through a tiered penalty rate structure: penalty rates to a member agency that exceeds its total annual allocation at the end of the twelve-month allocation period, according to a specified rate structure. MWDOC’s penalty would be assessed according to the member agency’s prorated share (acre-feet over usage) of MWDOC penalty amount with Metropolitan. Penalty funds collected by Metropolitan will be invested in water conservation and local resource development.
- **Tracking and Reporting Water Usage** – MWDOC will provide each member agency with water use monthly reports that will compare each member agency’s current cumulative retail usage to their allocation baseline. MWDOC will also provide quarterly reports on its cumulative retail usage versus its allocation baseline.
- **Timeline and Option to Revisit the Plan** – The allocation period will cover 12 consecutive months and the Regional Shortage Level will be set for the entire allocation period. MWDOC only anticipates calling for allocation when Metropolitan declares a shortage; and no later than 30 days from Metropolitan’s declaration will MWDOC announce allocation to its member agencies.

Due to the complexity of calculating allocations and the potential for unforeseen circumstances that may occur during an allocation year, after one year of implementation, MWDOC staff and member agencies have the opportunity to make recommendations to the MWDOC Board that will improve the method, calculation, and approach of the MWDOC WSAP.

### **Yorba Linda Water District**

With population growth, energy shortages, earthquakes, and the threat of terrorism experienced by California, maintaining the gentle balance between water supply and demand is a complicated task that requires planning and forethought. When water shortage occurs, simple measures can be implemented to conserve the water supply at a consumer level.

Urgency Ordinance No.91–02 enables the YLWD Board of Directors to adopt an emergency water management program if the necessity is found. In addition, the California legislature enacted in 1949 specific statutory authority for rationing applicable to all public water supply distributors (California Water Code, Sections 350–358). The water supplier does not have to be in an actual drought condition where there is not enough water for human consumption, sanitation, and fire protection; merely the threat of the condition occurring is enough. Once a local agency has declared the existence of an emergency condition or a water shortage, it is empowered to adopt regulations and restrictions on the delivery and consumption of water to conserve the water supply for the greatest public benefit. Service can, if necessary, be discontinued to customers who willfully violate established regulations.

The following conditions characterize urgency and require the Ordinance to take effect:

1. California is in the fifth consecutive year of drought conditions; and,
2. Precipitation for the current water year is substantially below normal in the watersheds of the water supplies serving Southern California; and,
3. Water Delivery from the State Water Project to Southern California is being cutback; and,
4. Metropolitan has instituted water conservation goals with severe monetary penalties for not meeting the goal; and, MWDOC, as a member agency of Metropolitan, has also instituted water conservation goals with severe monetary penalties for YLWD.
5. YLWD has broad authority to enact water conservation rules under the laws of the State of California; and,
6. The public’s adoption of water conservation measures is now, or may be, necessary to avoid or minimize the effects of the water shortage in Southern California.

The Board of Directors adopted Water Conservation Ordinance No. 09-01 on May 14, 2009. Ordinance No. 09-01 establishes a comprehensive staged water conservation program that will encourage reduced water consumption within YLWD through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the YLWD. Along with permanent water conservation requirements, YLWD’s Water Conservation Program consists of the following four stages found in Table 5-1 to respond to a reduction in potable water available to YLWD for distribution to its customers with year round requirements in effect at all times unless a mandatory conservation stage has been implemented by the Board of Directors.

**Table 5-1: Water Supply Shortage Stages and Conditions – Rationing Stages**

Stage No.	Water Supply Conditions	% Shortage
Stage 1 – Water Supply Shortage	The YLWD determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. A Stage 1 Water Supply Shortage also exists when the Metropolitan Water District of Southern California Changes its Water Supply Alert stage to “Condition 2: Water Supply Alert”.	UP to 10% Reduction Goal
Stage 2 – Water Supply Shortage	The YLWD determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. A Stage 2 Water Supply Shortage also exists when the Metropolitan Water District of Southern California Changes its Water Supply Alert stage to “Condition 3: Water Supply Allocation of 5% through 15%”.	Up to 20% Reduction Goal
Stage 3 – Water Supply Shortage	The YLWD determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. A Stage 3 Water Supply Shortage also exists when the Metropolitan Water District of Southern California Changes its Water Supply Alert stage to “Condition 4: Water Supply Allocation of 20% through 35%”.	Up to 35% Reduction goal
Stage 4 – Water Supply Shortage – Emergency Condition	The YLWD declares, in its sole discretion, a water shortage emergency and notifies its residents and businesses that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety. A Stage 4 Water Supply Shortage also exists when the Metropolitan Water District of Southern California changes its Water Supply Alert stage to “Condition 5: Water Supply Allocation of 40% or greater”.	Up to 40% Reduction Goal

### 5.3. Three-Year Minimum Water Supply

As a matter of practice, Metropolitan does not provide annual estimates of the minimum supplies available to its member agencies. As such, Metropolitan member agencies must develop their own estimates for the purposes of meeting the requirements of the Act.

Section 135 of the Metropolitan Water District Act declares that a member agency has the right to invoke its “preferential right” to water, which grants each member agency a preferential right to purchase a percentage of Metropolitan’s available supplies based on specified, cumulative financial contributions to Metropolitan. Each year, Metropolitan calculates and distributes each member agency’s percentage of preferential rights. However, since Metropolitan’s creation in 1927, no member agency has ever invoked these rights as a means of acquiring limited supplies from Metropolitan.

As an alternative to preferential rights, Metropolitan adopted the Water Shortage Allocation Plan (WSAP) in February 2008. Under the WSAP, member agencies are allowed to purchase specified level of supplies without the imposition of penalty rates. The WSAP uses a combination of estimated total retail demands and historical local supply production within the member agency service area to estimate the firm demands on Metropolitan from each member agency in a given year. Based on a number of factors, including storage and supply conditions, Metropolitan then determines whether it has the ability to meet these firm demands or will need to allocate its limited supplies among its member agencies. Thus, implicit in Metropolitan’s decision not to implement an allocation of its supplies is that at a minimum Metropolitan will be able to meet the firm demands identified for each of the member agencies.

In order to estimate the minimum available supplies from Metropolitan for the period 2011-2013, an analysis was performed to assess the likelihood that Metropolitan would re-implement mandatory water use restrictions in the event of a 1990-92 hydrology over this period. Specific water management actions during times of water shortage are governed by Metropolitan’s Water Shortage and Drought Management Plan (WSDM Plan). Adopted by the Metropolitan Board in 1999, the WSDM Plan provides a general framework for potential storage actions during shortages, but recognizes that storage withdrawals are not isolated actions but part of a set of resource management actions along with water transfers and conservation. As such, there are no specific criteria for which water management actions to take at specific levels of storage. The implementation of mandatory restrictions is solely at the discretion of the Metropolitan Board and there are no set criteria that require the Board to implement restrictions. Given these conditions, the analysis relies upon a review of recent water operations and transactions that Metropolitan has implemented during recent drought.

The first step in the analysis was a review of projected SWP allocations to Metropolitan, based on historical hydrologies. As with the recent drought, potential impacts to SWP

supplies from further drought and the recently implemented biological opinions are anticipated to be the biggest challenges facing Metropolitan in the coming three years.

A review of projected SWP allocations from the DWR’s State Water Project Delivery Reliability Report 2009 (2009 SWP Reliability Report) was made to estimate a range of conservative supply assumptions regarding the availability of SWP supplies. The 2009 SWP Reliability Report provides estimates of the current (2009) and future (2029) SWP delivery reliability and incorporates regulatory requirements for SWP and CVP operations in accordance with USFWS and NMFS biological opinions. Estimates of future reliability also reflect potential impacts of climate change and sea level rise.

The analysis assumes a maximum SWP allocation available to Metropolitan of 2,011,500 AF and a Metropolitan storage level of 1,700,000 AF at 2010 year-end. The analysis also assumes a stable water supply from the Colorado River in the amount of 1,150,000 AF through 2015. Although the Colorado River watershed has also experienced drought in recent years, Metropolitan has implemented a number of supply programs that should ensure that supplies from this source are relatively steady for the next three years. Based on estimated “firm” demands on Metropolitan of 2.12 MAF, the annual surplus or deficit was calculated for each year of the three-year period.

A review of recent Metropolitan water management actions under shortage conditions was then undertaken to estimate the level of storage withdrawals and water transfers that Metropolitan may exercise under the 1990-92 hydrologies were identified. For this analysis, it was assumed that, if Metropolitan storage levels were greater than 2 MAF at the beginning of any year, Metropolitan would be willing to take up to 600 TAF out of storage in that year. Where Metropolitan storage supplies were between 1.2 MAF and 2 MAF at the beginning of the year, it was assumed that Metropolitan would be willing to take up to 400 TAF in that year. At storage levels below 1.2 MAF, it was assumed that Metropolitan would take up to 200 TAF in a given year.

It was also assumed that Metropolitan would be willing to purchase up to 300 TAF of water transfer in any given year. For years where demands still exceeded supplies after accounting for storage withdrawals, transfer purchases were estimated and compared against the 300 TAF limit.

**Table 5-2: Metropolitan Shortage Conditions**

Study Year	Actual Year	SWP Allocation (%)	SWP (AF)	CRA (AF)	Total (AF)	Demand (AF)	Surplus/Shortage (AF)	Storage at YE (AF)	Transfers (AF)
2011	1990	30%	603,450	1,108,000	1,711,450	2,124,000	(400,000)	1,300,000	(12,550)
2012	1991	27%	542,820	1,108,000	1,650,820	2,123,000	(200,000)	1,100,000	(272,180)
2013	1992	26%	522,990	1,108,000	1,630,990	2,123,000	(200,000)	900,000	(292,010)

Based on the analysis above, Metropolitan would be able to meet firm demands under the driest three-year hydrologic scenario using the recent water management actions described above without re-implementing mandatory water use restrictions on its member agencies. Given the assumed absence of mandatory restrictions, the estimated minimum imported water supplies available to MWDOC from Metropolitan is assumed to be equal to Metropolitan’s estimate of demand for firm supplies for MWDOC, which Metropolitan uses when considering whether to impose mandatory restrictions. Thus, the estimate of the minimum imported supplies available to MWDOC is 261,577 AF<sup>10</sup>.

MWDOC also has also adopted a shortage allocation plan and accompanying allocation model that estimates firm demands on MWDOC. Assuming MWDOC would not be imposing mandatory restrictions if Metropolitan is not, the estimate of firms demands in MWDOC’s latest allocation model has been used to estimate the minimum imported supplies available to each of MWDOC’s customer agencies for 2011-13. Thus, the estimate of the minimum imported supplies available to YLWD is 11,912 AF<sup>11</sup>.

As captured in its 2010 RUWMP, Metropolitan believes that the water supply and demand management actions it is undertaking will increase its reliability throughout the 25-year period addressed in its plan. Thus for purposes of this estimate, it is assumed that Metropolitan and MWDOC will be able to maintain the identified supply amounts throughout the three-year period.

Metropolitan projects reliability for full service demands through the year 2035. Based on the MWDOC Water Supply Allocation Plan, YLWD is expected to fully meet demands for the next three years assuming Metropolitan and MWDOC are not in shortage, a Basin Production Percentage of 62% for Local Supplies and zero allocations are imposed for Imported Supplies. The Three Year Estimated Minimum Water Supply is listed in Table 5-3.

**Table 5-3: Three-Year Estimated Minimum Water Supply (AFY)**

Source	Year 1	Year 2	Year 3
	2010/2011	2011/2012	2012/2013
Local Water	12,052	12,052	12,052
Imported Water	11,912	11,912	11,912
<i>Total</i>	<i>23,964</i>	<i>23,964</i>	<i>23,964</i>

<sup>10</sup> Metropolitan 2010/11 Water Shortage Allocation Plan model (March 2011)

<sup>11</sup> MWDOC Water Shortage Allocation model (August 2010)

## **5.4. Catastrophic Supply Interruption**

Given the great distances that imported supplies travel to reach Orange County, the region is vulnerable to interruptions along hundreds of miles aqueducts, pipelines and other facilities associated with delivering the supplies to the region. Additionally, this water is distributed to customers through an intricate network of water mains that are susceptible to damage from earthquakes and other disasters.

### **Metropolitan**

Metropolitan has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM and WSAP Plans. Metropolitan also developed an Emergency Storage Requirement to mitigate against potential interruption in water supplies resulting from catastrophic occurrences within the southern California region, including seismic events along the San Andreas Fault. In addition, Metropolitan is working with the State to implement a comprehensive improvement plan to address catastrophic occurrences that could occur outside of the Southern California region, such as a maximum probable seismic event in the Delta that would cause levee failure and disruption of SWP deliveries. For greater detail on Metropolitan's planned responses to catastrophic interruption, please refer to Metropolitan's RUWMP.

### **Water Emergency Response Organization of Orange County**

In 1983, the Orange County water community identified a need to develop a plan on how agencies would respond effectively to disasters impacting the regional water distribution system. The collective efforts of these agencies resulted in the formation of the Water Emergency Response Organization of Orange County (WEROC) to coordinate emergency response on behalf of all Orange County water and wastewater agencies, develop an emergency plan to respond to disasters, and conduct disaster training exercises for the Orange County water community. WEROC was established with the creation of an indemnification agreement between its member agencies to protect each other against civil liabilities and to facilitate the exchange of resources. WEROC is unique in its ability to provide a single point of contact for representation of all water and wastewater utilities in Orange County during a disaster. This representation is to the county, state, and federal disaster coordination agencies. Within the Orange County Operational Area, WEROC is the recognized contact for emergency response for the water community.

### **Yorba Linda Water District**

As a California jurisdiction, YLWD could experience a catastrophic interruption in water supply as a result of a regional power outage, earthquake, terrorism, or other event. A

successful recovery plan is dependent upon an in-depth understanding of the vulnerability of each source of supply, delivery system, and distribution system to potential catastrophes. Possible catastrophes are listed in Table 5-4 and preparation actions being taken to reduce the severity of each event are discussed below.

***Regional Power Outage*** – The operation of YLWD’s groundwater wells and booster pump stations is dependent on the energy source. Backup sources of energy such as propane tanks, emergency generators, and natural gas supplies, are available at many of YLWD’s facilities. These alternative energy sources improve the reliability of YLWD’s water supply. Additionally, the existence of multiple wells within YLWD’s facilities creates redundancy and reduces the likelihood that all wells will be out of service simultaneously.

***Earthquake*** – The YLWD has implemented seismic criteria (e.g., seismically actuated valves, flexible piping, etc.) into the design of new reservoirs as the standard since 1997. In addition, flexible piping is used for the gas lines providing power to booster pumps and well sites.

YLWD has developed a comprehensive Emergency Response Plan to address the specific responses to earthquakes, damage assessments, evacuations, and major line breaks. The Emergency Response Plan also identifies agency and mutual aid contacts to help restore YLWD’s critical water system infrastructure.

***Terrorism*** – To address a terrorist act, YLWD has completed an extensive Security Vulnerability Assessment according to the Sandia National Laboratories Risk Assessment Methodology for Water Systems (RAM-WSM). As part of this project, YLWD prioritized criteria, prioritized facilities, characterized high priority facilities, developed threat scenarios based upon threat assessment methodologies, and used a Scenario-Based Assessment approach to develop recommendations in the form of prioritized lists of security countermeasures. YLWD is currently implementing these recommendations; however, due to the security sensitive nature of the information these recommendations are not included in this Urban Water Management Plan.

**Table 5-4: Preparation Actions for Catastrophe**

Possible Catastrophe	Preparation Actions
Regional Power Outage	Backup sources of energy, redundancy created through multiple wells within YLWD’s facilities.
Earthquake	Implementation of seismic criteria into the design of new reservoirs, flexible piping for gas lines, comprehensive Emergency Response Plan
Terrorist Act which Interrupts Service	Implementation of security countermeasures based on recommendations from a Security Vulnerability Assessment

## 5.5. Prohibitions, Penalties and Consumption Reduction Methods

The Water Conservation Ordinance No. 09-01 lists water conservation requirements which take effect upon implementation by the Board of Directors. These prohibitions promote the efficient use of water, reduce or eliminate water waste, complement YLWD’s Water Quality regulations and urban runoff reduction efforts, and enable implementation of the YLWD’s Water Shortage Contingency Measures. Prohibitions include, but are not limited to, restrictions on outdoor watering, washing of vehicles, food preparation establishments, repairing of leaks and other malfunctions, swimming pools, decorative water features, construction activities, and water service provisions which can be found in Table 5-5.

**Table 5-5: Mandatory Prohibitions**

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Watering any vegetated area is limited to fifteen (15) minutes per station per day and is prohibited between the hours of 9:00 am and 6:00 pm except by use of low flow landscape irrigation systems.	Year Round
Watering of any vegetated area is prohibited when it is currently raining or there is a forecasted chance of rain of fifty percent (50%) or higher.	Year Round
Watering any vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter, or ditch is prohibited.	Year Round
Washing down hard or paved surfaces is prohibited	Year Round

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
except when necessary to alleviate safety or sanitary hazards and then only by use of a handheld container, low volume high-pressure water recycling cleaning machine, or a low volume high-pressure water broom.	
Leaks, breaks, and other malfunctions should have been discovered and corrected no more than three (3) days of receiving notice from the YLWD	Year Round
Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.	Year Round
Using water to wash or clean a vehicle is prohibited except by use of a hand held container, hand held hose equipped with an automatic shutoff device, or at a commercial car washing facility.	Year Round
Eating or drinking establishments are prohibited from providing drinking water to any person unless expressly requested.	Year Round
Commercial lodging establishments must provide customers the option of not having towels and linen laundered daily.	Year Round
Installation of single pass cooling systems is prohibited in buildings requesting new water service.	Year Round
Installation of non-re-circulating water systems is prohibited in new commercial laundry systems.	Year Round
Food preparation establishments are prohibited from using non-water conserving dish wash spray valves.	Year Round
All new commercial conveyor car wash systems must have installed operational re-circulating water systems, or must have secured a waiver from the YLWD.	Year Round
Watering of any vegetated area is limited to three (3) days per week. Landscape irrigation systems that exclusively use low flow drip irrigation and weather based controllers or rotor stream controllers are exempt.	Stage 1
Watering of any vegetated area is limited to two (2) days per week in the months of November through March. Landscape irrigation systems that exclusively use low flow drip irrigation and weather based controllers or rotor stream controllers are exempt.	Stage 2
Leaks, breaks, and other malfunctions should have	Stage 2

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
been discovered and corrected no more than two (2) days of receiving notice from the YLWD	
Watering of any vegetated area is limited to one (1) day per week in the months of November through March. Landscape irrigation systems that exclusively use low flow drip irrigation and weather based controllers or rotor stream controllers are exempt.	Stage 3
Refilling of more than one foot and initial filling of residential swimming pools or outdoor spas is prohibited.	Stage 3
Watering of any vegetated area with potable water is prohibited except for maintenance of vegetation, maintenance of existing landscape for fire protection, maintenance of existing landscape for soil erosion control, and actively irrigated environmental mitigation projects.	Stage 4
Leaks, breaks, and other malfunctions should have been discovered and corrected no more than one (1) days of receiving notice from the YLWD	Stage 4
No new water service will be provided and no new meters will be provided, except as is necessary to protect the public health, safety, and welfare.	Stage 4

### Consumption Reduction Methods

Methods to reduce the use of potable water exist in all Water Shortage Levels which are expected to reduce consumption up to 40 percent or more and are listed in Table 5-6.

**Table 5-6: Consumption Reduction Methods**

Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Stage 1 Conservation Measures	1	0-10%
Stage 2 Conservation Measures	2	0-20%
Stage 3 Conservation Measures	3	0-35%
Stage 4 Conservation Measures	4	>40%

## Penalties for Excessive Use

Any customer who violates provisions of the Water Conservation Ordinance by either excess use of water or by specific violation of one or more of the applicable water use restrictions for a particular mandatory conservation stage may be cited by the YLWD and may be subject to written notices, surcharges, fines, flow restrictions, service disconnection, and/or service termination which are detailed in Table 5-7.

**Table 5-7: Action and Penalties**

Action and Penalties	Stage When Penalty Takes Effect
Door hanger and Notice of First Violation	First Violation
Penalty not to exceed one hundred dollars (\$100), door hanger, and Notice of Second Violation	Second Violation
Penalty not to exceed two hundred and fifty dollars (\$250), door hanger, Notice of Third Violation	Third Violation
Penalty not to exceed five hundred dollars (\$500), door hanger, Notice of Fourth and Subsequent Violations	Fourth and Subsequent Violations
Possible Installation of Water Flow Restrictor Device	Second and Subsequent Violations
Possible disconnection of Water Service	Subsequent Violations after Water Flow Restrictor Device installation

## 5.6. Impacts to Revenue

In the event that a decrease in water supply occurs for an extended period of time, YLWD could face a potential loss requiring the water enterprise to draw from any reserves and also re-examine the revenue stream in order to balance the budget. It is thus important to consider possible measures to overcome revenue and expenditure impacts, which are listed in Tables 5-8 and 5-9.

**Rate Adjustment** – Should YLWD experience a significant decrease in water supplies for an extended period of time, the Board of Directors would consider a water rate increase or water fee surcharge to cover any revenue shortfall due to water shortages or conservation measures.

**Water Fund Balance** – YLWD maintains a Water Fund Balance that can be drawn upon for minor revenue shortfalls that need to be addressed immediately from decreased water supplies. The Board of Directors would consider a rate increase to restore this fund for future unexpected emergency situations.

**Bonds** – YLWD maintains a high bond rating in order to secure bonds for unexpected facility replacements and repairs.

**Table 5-8: Proposed Measures to Overcome Revenue Impacts**

Name of Measures
Rate Adjustment
Water Fund Balance
Bonds

**Capital Improvements Program** – The YLWD is committed to increasing its ability to produce groundwater from the Orange County Groundwater Basin by means of improvements to its water well system. These improvements can improve local reliability and reduce YLWD dependency on more expensive water purchased from MWDOC.

**Table 5-9: Proposed Measures to Overcome Expenditure Impacts**

Name of Measures
Capital Improvements Program

## 5.7. Reduction Measuring Mechanism

Methods to reductions in water use are detailed below and listed in Table 5-10.

**Production Meter Readings** – YLWD has meters on all wells that provide access to daily water use readings. An analysis of the daily production meter readings will provide values for actual reductions in water use.

**Imported Water Metering** – YLWD has meters on all imported water connections that provide access to readings of daily quantities of imported water.

**Residential Water Metering and Site Monitoring** – During stages of mandatory conservation, YLWD will conduct monthly residential meter readings and site monitoring, as necessary. Site monitoring will be prioritized based upon the amount of water consumed. For those customers not in compliance with the mandatory conservation, YLWD can manually shut-off the connection until compliance is confirmed.

*MWDOC Water Use Monthly Reports* – MWDOC will provide each member agency with water use monthly reports that will compare each member agency’s current cumulative retail usage to their allocation baseline. MWDOC will also provide quarterly reports on its cumulative retail usage versus its allocation baseline.

**Table 5-10: Water Use Monitoring Mechanisms**

<b>Mechanisms for Determining Actual Reductions</b>	<b>Type of Data Expected</b>
Production Meter Readings	Volume of water use
Imported Water Metering	Volume of water use
Residential water Metering and Site Monitoring	Volume of water use
MWDOC Water Use Monthly Reports	Comparison of cumulative retail usage to allocation baseline.