



Yucaipa Valley Water District

12770 Second Street, Yucaipa, California 92399

Water Shortage Contingency Plan

Supplement to the Yucaipa Valley Water District
2010 Urban Water Management Plan and the
2010 Regional Urban Water Management Plan

Adopted on June 15, 2011

Section 1 - Introduction

Water conservation is more than just restricting water use. Water conservation is the efficient use of water through conservation measures and increased efficiency. Implementing water conservation allows water utilities to avoid the cost of building additional drinking water facilities and reasonably expands the use of water resources. Water conservation is one of the last options available for communities to continue the long tradition in America of cheap, available water.

Inexpensive and readily available water supplies are often taken for granted while in many parts of the world this luxury is unique.

Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster (California Water Code Section 10632(c))

The objective of Water Shortage Contingency Planning is to establish actions and procedures for managing water supply and demands during water shortages. The plan would help the District maintain essential public health and safety and minimize adverse impacts on economic activity, environmental resources and the region's lifestyle.

This plan complements the District's Emergency Response Plan. That plan is an emergency plan that defines decision-making authority in emergencies and creates specific emergency action plans for a number of systems, security, and management procedures.

As part of the Emergency Response Plan, the District would provide a unified incident command center as a disaster response command team at the Administration Building. These team leaders will determine policies and strategies for handling major disasters. Individual departments, working on a common incident, will coordinate their field efforts through the incident command structure.

While water supply disruptions can occur for a variety of reasons, a weather related water shortage, or drought, is one category of particular importance to the Yucaipa Valley Water District for reasons described below. Droughts are naturally occurring but unpredictable weather events of varying frequency, duration and severity. In the Yucaipa Valley, historical data indicates a high probability of short term and/or multi-year drought conditions.

This region is generally faced with a relatively dry summer period with very little rainfall occurring during the summer months. Most of the annual 16 inches of precipitation occurs during the fall and winter months from November to April, with most of the rainfall occurring in February. Since the Yucaipa Valley Water District is typically reliant on local surface water and groundwater, the amount of precipitation received in the Yucaipa Valley is extremely important to recharge our underground water basins. Certain weather events that can affect this cycle may manifest in one or more of the following ways:

- Less than normal winter precipitation and snowpack, this would limit the quantity of water available at the Oak Glen Surface Water Filtration Facility and ultimately reduce the amount of groundwater recharge.
- Unusually warm spring weather bringing with it early melting of the snowpack, resulting in early drawdown of the mountain resources.

- Unusually hot and dry summer weather, which can significantly increase peak season demands.
- A delayed return of the fall rains, or a dry winter, which can delay the fall percolation refill cycle (which replenishes the underground storage reservoirs after the peak season).

Yucaipa Valley Water District's strategy for dealing with the hydrologic uncertainty associated with drought management and related emergency issues involve several components:

- **Information** - To deal with hydrologic uncertainty in real-time and in longer term planning horizons, the District's management team uses a number of available informational and data gathering sources. One of the most valuable resources used by the District is the California Department of Water Resources Data Exchange Center. This center provides real time data at the California Department of Forestry Fire Station located on Highway 38 as well as other important statewide tools.
- **Forecasting** - Through the National Oceanic and Atmospheric Administration (NOAA), the District regularly monitors daily weather forecasts, mid-range weather forecasts, 30- and 90-day and multi-season climate outlooks. The Internet has greatly improved access to these sources of information. For example, NOAA's El Niño theme page on the Internet provides a wealth of timely information on current and forecasted El Niño and La Niña conditions with enough lead time for the District to prepare for such events.
- **Communication** - The District's management team works closely with members of other local, state, and federal agencies including the City of Yucaipa, City of Calimesa, County of San Bernardino, and the County of Riverside. The local municipalities meet once a month to discuss several issues related to the Yucaipa Valley, including hydrologic conditions, facility and system operations, and other subjects as may be beneficial in managing our water supplies.
- **Dynamic operating rules** - Operational flexibility is key, with operating plans changing as conditions and forecasts change. Dynamic groundwater pumping and reservoir storage settings are continuously monitored and modified to best fit the daily temperature forecasts. All of the tools, information sources and communications outlined above, are needed for coordinating and decision making related to real-time operations.

Section 2 - Principles of a Water Shortage Contingency Plan

The Yucaipa Valley Water District's Water Shortage Contingency Plan, is based on the following principles:

- Given clear, timely and specific information on supply conditions and the necessary actions to forestall worsening conditions, customers prefer the opportunity to meet targeted demand reduction levels through voluntary compliance measures. The decision to move to mandatory restrictions is more acceptable if the voluntary approach has been tried first but has not resulted in enough demand reduction to ensure public health and safety through the projected duration of the shortage.
- Each drought or other shortage situation has enough unique characteristics that a plan cannot specifically define all the scenarios and specific supply and demand management

actions. The usefulness of a Water Shortage Contingency Plan lies in planning the range of supply and demand management actions in advance of the situation, and in defining the communication mechanisms by which decisions will be made during the event.

- Given the effective long-term conservation program operated by the District, it is important to distinguish between the short term curtailment measures necessitated by a water supply disruption, and the conservation measures the District promotes to its customers. Water conservation generally focuses on improved efficiencies, whereas curtailment measures can involve short-term actions that may impact quality of life.
- It is essential to closely monitor water quality during a supply disruption and particularly during a warm weather drought. Water quality issues must be considered when supply management decisions are made.

Section 3 - Alternative Water Supplies

Depending on the nature and timing of a potential water shortage, alternative water supplies may be useful to supplement existing supplies.

- **Interties** - Since water supply disruptions may not affect all water suppliers to the same extent, it is sometimes feasible for the District to obtain water from other providers through interties, where they exist.
- **Recycled Water** – Yucaipa Valley Water District recognizes the value of recycled water as a means to conserve and extend the useful life of the potable water supply. Recycled water is the use of highly treated water for irrigation, and construction purposes, etc. in order to reduce demand for potable water and lessen the impact of shortages on the community. It is important to note, that as recycled water becomes more widely available through the District's recycled water facilities, the District will rely more heavily on it as a fundamental long-term source of supply (even in non-drought periods).

Section 4 - Phased Curtailment Plan

The Water Shortage Contingency Plan provides four stages of response based of increasing severity, as progressively more serious conditions warrant. This type of response would be appropriate to apply to a summer drought or other water service disruption. The four stages include a variety of communications, internal operations, and supply and demand management strategies as appropriate, and are characterized as follows:

- **Advisory Stage** -The public is informed as early as meaningful data are available that a possible shortage may occur.
- **Voluntary Stage** - If supply conditions worsen, the plan moves to the Voluntary Stage, which relies on voluntary cooperation and support of customers to meet target consumption goals. During this stage, specific voluntary actions are suggested for both residential and commercial customers.

- **Mandatory Stage** - If the Voluntary Stage does not result in the reduction needed, the Mandatory Stage prohibits or limits certain actions. This stage would be accompanied by an enforcement plan, which could include fines for repeated violation.
- **Emergency Curtailment** - This addresses the most severe need for demand reduction and could include a combination of mandatory measures and rate surcharges. This could be used as the last stage of a progressive situation, such as a drought of increasing severity, or to address an immediate crisis, such as a facility failure.

Recommendations about implementing the Water Shortage Contingency Plan would be made to the General Manager, based upon recommendations by District staff. The General Manager would then inform the members of the Board of actions taken or approval to implement specific strategies depending upon the severity of the situation. Prior to making a recommendation, the District staff would consider the following factors in making its recommendations:

- Total supply availability, including groundwater, interties, and other available water supplies;
- The rate of decline in total reservoir storage compared with the normal operating rule curve;
- Short and long term weather forecasts by the NOAA National Weather Service;
- Computer modeling of weather and demand assumption data;
- The trends and forecasts of the system's daily water demands;
- The estimated margin of safety provided by the demand reduction, compared with the level of risk assumed if no action is taken;
- The value of lost water sales revenue compared with the increased margin of reliability;
- The length of time between stage changes (abrupt starts and stops are to be avoided), and required time lags to shift administrative gears and institute program (printing, purchasing, etc.);
- Current events; and
- Customer response.

ADVISORY STAGE

Objectives

- To prepare the cities, school district, developers and water users for potential water shortage thereby allowing all parties adequate planning and coordination time.
- To undertake supply management actions that forestalls or minimizes the need later for more stringent demand or supply management actions.

Triggers

- As presented earlier, there are a variety of weather and other conditions that may cause concern about water availability and a potential water shortage. The most fundamental weather condition that would trigger an "Advisory" would be when the winter season rainfall total is significantly less than the average annual rainfall of 18 inches per year for Yucaipa (as measured at the Mill Creek CDF Fire Station).
- The Advisory would be withdrawn when projected water supplies such as State Water Project water and/or recycled water are in sufficient supply to provide normal water supply conditions to the District's customers.

Public Message

- "The potential exists for lower than normal supply; conditions may return to normal or, later on, we may need to reduce consumption. We'll keep you informed."

Advisory Stage Goal

- Voluntary conservation measures resulting in a 5% - 10% reduction in water use, which can generally be achieved by reducing residential landscaping, and irrigation use.

Advisory Stage Action Plan - Suggested Actions - The suggested actions will be modified accordingly based on regional and statewide activities, actions and press coverage.

- Brief elected officials.
- District staff to issue a water conservation press release/newsletter during the summer months as a reminder to customers. See the sample press release as provided in Attachment "A".
- District adds text to monthly billing to remind customers of water conservation practices. An example would be:
- "During the summer months, please remember not to water between the hours of 10:00am and 8:00 pm. Thank you for conserving".
- District staff to regulate construction meter activity. This may include restricting quantity of water used and the issuance of new construction meters.
- District staff to monitor and record potable water irrigation practices at golf courses, parks and schools to effectively regulate the use of limited potable supplies.
- District staff to encourage the use of recycled water as a means to remain drought tolerant and promote continuous water conservation measures.
- Weekly planning meetings to include updates on water supply issues and alternatives to prepare for the next stage of the shortage contingency plan.
- Intensify ongoing media education effort about the water system, particularly relationship of weather patterns to supply and demand; provide up to date data and implications for water use, if known.

Yucaipa Valley Water District Internal Operations for Advisory Stage - The suggested actions may be modified accordingly based on the specific situation.

- Prepare to establish purveyor "hotline", a frequently updated recording providing latest information and supply and demand data.
- Consult with other major customer groups, e.g., parks departments, landscape industry, forming a committee if needed, to assist the shortage advisory group to define message and provide feedback on utility actions.
- Initiate status report to entities with special interests, e.g., large water users especially landscape and nursery industry, parks, major water using industries.
- Prepare public information materials explaining the Water Contingency Shortage Plan stages and range of actions; prepare "Questions and Answers" for all customer groups, including those who may be planning new landscaping projects.
- Intensify coordination with other regional water suppliers to learn what conditions they are projecting for their systems.
- Evaluate ability, resources, and plans to move into Voluntary stage; as appropriate, begin preparatory measures.
- Intensify data collection actions (storage reservoirs, wells and power supply) and monitoring weather forecasts.
- Intensify the District's computer modeling runs of projected supply, storage and demand scenarios.
- Intensify supply side management techniques to optimize existing sources.

- Assess current water main flushing and reservoir cleaning activities to determine whether they should be accelerated to be completed prior to the peak season or reduced to conserve supply.
- Assess water quality in reservoirs and distribution system to target for correction areas that may be predicted to experience problems.
- Initiate planning and preparation for Voluntary Stage actions, including an assessment of potential staffing impacts, training needs, and communications strategies including use of web-based information

VOLUNTARY STAGE

Objectives

- To maintain or reduce demand to meet target consumption levels by customer voluntary actions.
- To forestall or minimize need later for more stringent demand or supply management actions
- To minimize the disruption to customers' lives and businesses while meeting target consumption goals
- To maintain the highest water quality standards throughout the shortage.

Triggers

- The "Voluntary Stage" is implemented when one or both of the following factors applies:
 - Supply conditions identified in the Advisory Stage have not improved.
 - Demand levels indicate the need for a more systematic response to manage the situation
- Heavy groundwater pumping coupled with higher summer temperatures means that there might be an increased likelihood that water quality problems may become an issue. Consideration will be given to potential water quality issues in defining the supply and demand management strategies.

Public Message

"We are relying on support and cooperation of all water users to stretch the available water supply. Demand needs to be reduced by 10-15%. Customers are responsible for determining how they will meet that goal. Water waste is not allowed. If everyone cooperates, we may avoid imposing more stringent restrictions."

Voluntary Stage Goal

At this stage, the goal would be to achieve a 10% - 15% reduction in water use. Customers can generally achieve this goal through constant water conservation practices.

Voluntary Stage Action Plan - Suggested Actions - The suggested actions will be modified accordingly based on regional and statewide activities, actions and press coverage.

The District staff shall meet frequently to re-evaluate the situation based on current and projected supply conditions and the season, and determine the appropriate actions and strategies. The staff will determine target consumption goals to be achieved on a voluntary basis, which may be revised as necessary. (See attachment B) Based on the consumption goal, some or all of the following actions will be taken; those actions that are asterisked (*) will be considered initially for

implementation if demand reductions more than 10 to 15 percent below normal are necessitated, or later if voluntary measures implemented fail to deliver targeted savings.

- Establish systematic communications with elected officials at the committee and Board level to communicate the nature and scope of voluntary measures and strategy
- District staff to evaluate whether targeted consumption levels and supply conditions warrant a rate surcharge to reinforce voluntary actions and/or to recover revenue losses*; the General Manager makes recommendation to Board members
- Prepare appropriate legislation regarding emergency surcharges, if required
- Consult with customer groups throughout the shortage to help develop public information messages and materials and to obtain feedback on utility actions
- Initiate major public information, media and advertising campaign:
 - In daily newspapers, publish and promote consumption graph that displays the goal and previous 24 hour consumption;
 - Promote consumption goals for typical households, and a percentage reduction goal for commercial customers (Attachment C contains a list of recommended actions for customers to take to reduce consumption)
 - Develop and implement a marketing plan, including paid advertising, to keep customers informed about supply and demand conditions; reinforces desired customer actions; recommends customer actions to reduce demand sufficiently; and, depending on conditions, reminds customers that if goals are not achieved, restrictions may be necessary
- Identify what potential next steps will be to reduce demand including timing, what type of restrictions and/or surcharges will be imposed.
- Establish routine timing for press releases (e.g., every Monday morning) that provide current status and outlook; present information in standardized format that becomes familiar to media and public.
- Include water quality information in public information so that if flushing is necessary, the public understands that it is essential for water quality maintenance.
- Publicize the water supply conditions web page, which is updated regularly. Ensure the information provided covers the needs of all key interests: the public, news media and purveyors.
- Meet with landscape industry representatives to inform them of current and projected conditions; develop partnership programs and informational materials on the shortage, consumption goals, etc. for distribution by industry and utilities.
- Establish and promote "hotlines" for customers to obtain additional conservation information.
- Contact largest customers to request percentage reduction. Contact City and other public agencies to inform them of conditions and request their cooperation.
- Prepare list of commercial car wash facilities that recycle water
- Establish regular communication mechanism to keep Department employees, especially utility account representatives and water service consultants, up to date on goals, conditions, and actions
- Print generic postcards to acknowledge receipt of customer correspondence regarding the shortage and to inform customer that specific response is being prepared
- Initiate remaining planning and preparation for Mandatory Stage

Yucaipa Valley Water District Internal Operations for Voluntary Stage - The suggested actions may be modified accordingly based on the specific situation.

- Continue actions listed in the Advisory Stage.
- Eliminate all operating system water uses determined not to be essential to maintain water quality such as pipeline flushing, reservoir overflows; complete cleaning of any reservoirs known to be vulnerable to warm weather taste and odor concerns.
- Increase water quality monitoring actions.
- Implement staffing reassignments as needed, and plan staffing changes, which may be needed for the Mandatory Stage, including staff to enforce mandatory restrictions.

Supply and Demand Management Actions

- Issue a request that non-recirculating fountains be turned off*
- Restrict construction meters to only essential purposes*
- Activate any existing interties to increase supply availability*
- Request that Fire Department limit training exercises that use water
- Request that City agencies eliminate washing fleet vehicles unless recycling car washes are used
- Request that hosing sidewalks, driveways, parking lots, etc. be limited to situations that require it for public health and safety
- Have YVWD field personnel "tag" observed obvious water waste such as hoses without shutoff nozzles, gutter flooding, etc. with notice that informs customer about the supply conditions and need to conserve
- Evaluate ability to accelerate or enhance or expand long term conservation programs; implement as appropriate

MANDATORY STAGE

Objectives

- To achieve targeted consumption reduction goals by restricting defined water uses.
- To ensure that adequate water supply will be available during the duration of the situation to protect public health and safety
- To minimize the disruption to customers' lives and businesses while meeting target consumption goals.
- To maintain the highest water quality standards throughout the shortage.
- To promote equity amongst customers by establishing clear restrictions that affect all customers

Triggers

The General Manager, with approval from the Board of Directors, would approve progression to this stage if goals established in the Advisory and Voluntary Stage have not been met, and additional action is needed. The specific restrictions imposed during the mandatory stage would be determined based on the season of the year, targeted demand levels, and other considerations previously mentioned. Variations of the specific restrictions may be applied based on water supply conditions. For example, lawn watering restrictions may simply consist of time of day restrictions; or, if conditions warrant, lawn watering could be restricted to certain times of day and allowed only once a week.

Public Message

"It is necessary to impose mandatory restrictions to reduce demand based on the current water shortage. We are continuing to rely on the support and cooperation of the public to comply with these restrictions but need the certainty and predictability of restricting certain water uses in order to ensure that throughout the duration of this shortage an adequate supply of water is maintained for public health and safety."

Mandatory Stage Goal

Mandatory conservation measures resulting in a 10% - 15% reduction in water use.

Mandatory Stage Action Plan - Suggested Actions - The suggested actions will be modified accordingly based on regional and statewide activities, actions and press coverage.

- The District staff will make recommendations regarding the nature, scope and timing of restrictions to the members of the Water Conservation Committee. The District staff will need to determine that the water supply and demand management strategies will not result in unacceptable water quality degradation.
- The General Manager recommends to the Board of Directors to implement the Mandatory Stage conservation measures and other appropriate actions.
- The Board adopts a resolution on mandatory restrictions and, if needed and not already in place, emergency surcharges.
- The public is informed about the nature and scope of the mandatory restrictions through a press conference, paid advertising and other means, including direct mail.
- The enforcement mechanisms, rate surcharges, target consumption goals, projections for how long restrictions will be in place and the reasons for imposing restrictions will also be identified, as will the possible consequences if goals are not met.
- Any exemptions from restrictions will be clearly identified.
- In communicating mandatory restrictions to the public, a clear distinction will be made between lawn/turf watering and watering gardens and ornamental plantings. The type and amount of watering allowed will be clearly defined.
- A "Customer Hotline" will be set up to report violations of restrictions.
- Customers who irrigate with private wells will be urged to install signs to let the public know that private well water is being used.
- Communication actions from the Advisory and Voluntary stages will be continued and enhanced.
- Plans will be made to move into the fourth stage - Emergency Curtailment - and to begin preparatory measures as appropriate

Yucaipa Valley Water District Internal Operations for Mandatory Stage - The suggested actions may be modified accordingly based on the specific situation.

- Continue appropriate actions from previous stages
- Finalize and implement procedures for exemptions from restrictions and/or emergency surcharges.
- Finalize and implement enforcement procedures for restrictions including highly visible "Water Watchers".
- Increase water quality monitoring actions at storage reservoirs.

Supply and Demand Management Actions

Overall supply conditions will be considered at regular meetings by District staff and the members of the water conservation committee in evaluating which restrictions to impose.

POSSIBLE WATER SHORTAGE RESTRICTIONS

Watering Restrictions

The following are several possible approaches to watering restrictions. The nature of the restrictions used will depend on the situation, and may change as severity of the situation changes.

- Prohibit all watering during the day, for example between 6:00 a.m. and 9:00 p.m.
- Limit all watering to a specific number of days per week or per month. This choice will depend on target consumption goals, the time of year and the extent to which watering is occurring, and how much demands have already decreased.

Other Restrictions

- Prohibit use of any ornamental fountain using drinking water for operation or make-up.
- Prohibit car washing except at commercial car wash facilities that recycle water.
- Rescind water construction meter hydrant permits.
- Prohibit washing of sidewalks, streets, decks or driveways, except as necessary for public health and safety.
- Limit pressure washing of buildings to situations that require it as part of scheduled building rehabilitation project (e.g., painting).
- Prohibit water waste including untended hoses without shut-off nozzles, obvious leaks and water running to waste such as gutter flooding and sprinklers/irrigation whose spray pattern unnecessarily and significantly hits paved areas

Exemptions from Water Use Restrictions

- **Lawn Watering Ban Exemption** - Newly installed lawns may be exempted from a ban if the procedures listed below are followed. Those wishing to use this exemption would need to contact the District office in advance of the exemption being granted, providing their name, address, phone number, size of lawn and type of watering system. This information would allow the District to quantify the amount of water used under this exemption and to spot check for compliance. The procedures relating to the exemption and the requirements of the exemption would be clearly outlined at the time of the ban. The following procedures are subject to change:
 - Each applicant would be mailed a packet stating the requirements.
 - Once the requirements are met, an authorization packet would be mailed to the customer including a sign to be posted indicating that the District's requirements are being complied with.
 - New lawns must be properly installed, meaning that two inches of organic soil amendment, such as composted yard waste or biosolids, is cultivated into the top six inches of existing soil, at a minimum.
 - New lawns must be watered according to guidelines to be provided in the packet mentioned above.
 - For purposes of this exemption, "new lawn" refers to a lawn newly installed during the current year only. Over seeded or otherwise renovated lawns would not be exempt.
- In the event that the shortage continues to worsen and the Emergency Curtailment Stage is invoked, this exemption would be revoked. It would also be revoked on a case-by-case

basis if the rules stated above are not followed, or in the case of a water system emergency. Monitoring and enforcement are at the discretion of the District. The existence of an exemption to a watering ban would be announced early in the response process, for example when the Advisory Stage is invoked.

- **Automatic Irrigation System Exemption** - Users of automatic irrigation systems may be exempt from certain mandatory watering restrictions if proper procedures are followed - but not from a total watering ban. This approach allows an alternate path to achieving savings due to the precision with which such systems can be operated, but is not intended to be a loophole to avoid the need to curtail use. For example, if only 30 minutes of lawn watering is allowed per week, automatic irrigation systems which meet the criteria would be allowed to water based on a certain percentage of evapotranspiration (ET), such as 50%, instead of the time-limit based restriction. [Note: ET is a factor calculated according to climatic data, which is commonly used for lawn watering in commercial applications; ET data would be made available on the District's web page and in alternate formats.] In the event of a total watering ban, these users would also be prohibited from watering (unless other safety-based criteria are met, as stipulated in the Water Shortage Contingency Plan).
- The procedures to be met include:
 - The area must be audited by an Irrigation Auditor as certified by the Irrigation Association (list from the IA to be available on request).
 - Irrigation efficiency of the system must be at least 62.5%, as defined by the Irrigation Association (includes both system distribution uniformity and management practices).
 - A baseline irrigation schedule based on historical ET must be provided to the system's owner/operator.
 - The owner/operator must evaluate actual ET on at least a weekly basis and change the irrigation schedule if warranted by the ET index.
 - The owner/operator must contact the utility to provide the name of the auditor, date of inspection and the efficiency rating, as well as the name, address and phone number of the contact person for the site being watered, prior to using the exemption
 - Time of day restrictions, such as watering prohibited between 6:00 am and 8:00 pm, would have to be met.
 - The system must have a functioning rain-shutoff device.
 - Watering limitations stipulated by the District would need to be followed. The limitations would be stated as a percent of ET, so that, for example, users who meet the above requirements would be able to water based on 50% of ET (the specific percent amount would be decided upon at the time the restriction is announced, depending on the supply outlook). The District's website (www.yvwd.dst.ca.us/conserves.htm) would be regularly updated to provide the information needed for those watering according to this exemption; the information would be available through other means as well.
- **Other Exemptions** - For purposes of dust control, water may be applied to construction areas or other areas needing to comply with air quality requirements. If recycled water is available, consider requiring or promoting that it be used for dust control, if feasible.

- Ball fields and play fields may be watered at the minimum rate necessary for dust control and safety purposes.
- The District will exempt customers with special medical needs such as home dialysis from any emergency surcharge provided individual customers notify the District of such a need

Water Supply Actions

- If not already implemented, activate interties and any other alternative sources of supply.

EMERGENCY CURTAILMENT STAGE

At this stage, the District recognizes that a critical water situation exists. Without additional significant curtailment actions, a shortage of water for public health and safety will be imminent. No prior emergency in the Yucaipa Valley Water District's history fits this description.

This stage is characterized by two basic approaches. First, increasingly stringent water use restrictions are established and enforced. Secondly, significant rate surcharges are used to encourage customer compliance. While a rate surcharge may be implemented in either the Voluntary or Mandatory stages, a surcharge is a key component to the success of this stage and previous surcharge may be increased if appropriate.

Emergency Curtailment Action Plan - Suggested Actions - The suggested actions will be modified accordingly based on regional and statewide activities, actions and press coverage.

- Continue all previous, applicable actions.
- Define the problem to the public as an emergency and institute formal procedures to declare an emergency.
- Inform customers of the rate surcharge and how it will affect them. Provide information on an appeal process.
- Coordinate with police and fire departments requesting their assistance in enforcing prohibition of water waste.
- Inform customers that taste and odor water quality problems may occur with system-wide reduced water consumption.
- Inform customers about possible pressure reductions and problems this may entail.
- Define and communicate exemptions for medical facilities and other public health situations.

Yucaipa Valley Water District Internal Operations for Emergency Curtailment - The suggested actions may be modified accordingly based on the specific situation.

- Continue and enhance "Water Watcher" patrols.
- Continue actions listed in prior stages.
- Curtail fire flow and pipeline testing unless it can be shown to be essential to protect the immediate public health and safety.
- Further enhance water quality monitoring actions

Supply and Demand Management Actions

- Rate surcharges would be implemented to encourage customer compliance with the restrictions, as follows:

- **Commercial Customers** - Commercial, multifamily and industrial users would be asked to reduce water use by a set percentage of their consumption during the same period in the previous year. Emergency rate surcharges would be established to provide an additional incentive to reduce water use. It is the District's intention to establish a multi-tiered structure. This "variable block approach" would allow for different surcharge rates based on the individual customer's consumption during the same period in the previous year. For example, if the District were to target desired reduction of 85% from the previous year's consumption in that period, any consumption between 0 and 85% would be billed at one rate and any consumption over 85% would be billed at another, much higher rate. In this way, the targeted reduction amount and resulting surcharges would be customized around each customer's water use patterns, while still resulting in a steep surcharge for consumption in excess of the target amount for each block.
 - A billing system modification would be needed to allow the District to accomplish this. If this has not been done by the time it may be needed, a simple across-the-board rate surcharge would be applied.
- **Residential Customers** - A multi-tiered, increasingly steep rate structure would be implemented for residential customers (includes single-family dwellings and duplexes). While there are differences in household size, there is more similarity in residential domestic water use than there is in commercial water use.
 - All lawn and turf irrigation would be prohibited
 - Make recycled water available for street cleaning, construction projects, landscape irrigation, dust control, etc.
 - Require that all firefighting agencies discontinue the use of water in training exercises until emergency is over.
 - Rescind all construction meter or fire hydrant permits.

Short-Term Emergency Curtailment Plan

Although many of the demand reduction measures employed would be similar to those used during a progressive, weather-related shortage, short-term emergencies are unique because of a lack of preparation time and the urgency of immediate, large-scale demand reductions. Each emergency scenario is different, but most of them require major curtailment actions by customers. Also, unlike a drought, some emergencies would be localized, requiring demand reduction for only a limited geographic area.

Strategies for dealing with emergencies have been developed based on lessons learned from previous water utility events, other utility experiences, and a sorting of measures based on specific criteria.

Throughout water shortage events, consistent conservation messages and information on appropriate demand reduction measures should be delivered to water users through the media and by direct contact. Although exact demand reduction goals may not always be met by water users, the water demands during short-term emergencies must be curtailed enough to be beneficial and avoid more serious water shortages.

There are several criteria by which to decide which demand management measures are appropriate to initially reduce demand during an emergency:

- **Timing:** can the measure(s) or action(s) deliver the necessary savings in the necessary timeframe, i.e., are immediate savings needed or can the system support a gradual reduction in demand;
- **Magnitude of savings:** will the measure produce enough savings to make a meaningful difference i.e., reduce demand to the level the impaired water system can handle;
- **Season:** does the action make any impact at the time of year that the emergency occurs, i.e., banning lawn watering will have little impact in the winter months;
- **Costs:** How severe are the cost implications of the measure to the customer, including local business and industry.

Supply and Demand Management during Emergencies

No single strategy can be created which will meet the needs of the District for all emergency scenarios. The criteria listed above create a framework for decision-making. Emergencies initially require quick and immediate response. Once an assessment is made as to how long it will take to restore the system, the immediate response strategy may change if it appears that the repair process will be lengthy.

The strategy for most emergencies can be narrowed to measures having the most immediate impact on water supply and consumption. All needed and available back up supplies would be activated during an emergency, including the use of interties and standby water production wells.