El Dorado Irrigation District

DROUGHT ACTION PLAN

2014 Update

PURPOSE. This Drought Action Plan serves as a detailed work plan for El Dorado Irrigation District staff, not only during drought conditions, but before and after as well. It includes specific actions for management of the District's water supply and demand, addresses the impacts associated with drought, and facilitates the timely implementation of effective drought responses.

CHANGES. The foundation of this action plan is the District's Drought Preparedness Plan, which was adopted by the Board of Directors in January of 2008. The drought stages and their corresponding titles have been updated from three to four stages, however, and now conform to the February 2010 member recommendations of a Regional Water Authority workgroup that was tasked with developing consistent messaging in the greater Sacramento region during drought conditions. District staff also refined the customer actions of the Drought Preparedness Plan; and these voluntary, mandatory, and prohibited actions are listed in the water efficiency sections of each drought stage.

ADOPTION. The Drought Action Plan was adopted by the Board on February 4, 2014. Subsequent revisions to the Plan were presented to the Board on April 14, 2014.

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1.0 Introduction

1.1 Purpose of this Plan

In 2007, the El Dorado Irrigation District (EID or District) and the El Dorado County Water Agency (EDCWA) completed comprehensive drought preparedness plans that provided indicators and modeling tools to determine when El Dorado County, and specifically each water purveyor, might enter into drought conditions. In January of 2008, the EID Board of Directors adopted the District's Drought Preparedness Plan. District staff then developed an internal action plan to address specific tasks and detailed actions, which was completed in March of 2009, and was based upon the drought metrics and customer responses provided in EID's Drought Preparedness Plan.

This 2012 updated Drought Action Plan (Plan) continues to serve as a detailed work plan for District staff in order to prepare for and address drought conditions. It includes specific actions regarding the management of water supply and demand, addresses the impacts associated with drought, and facilitates a District-wide drought response that is both timely and effective. This Plan is also listed in Part III of the District's Emergency Operations Plan.

1.2 Summary of Drought Stages

All declarations of drought stages occur by action of the EID Board of Directors. As a policy, EID implements the same drought stage and employs the same response measures throughout its' geographical water supply regions, making public outreach and implementation consistent and effective. For an example of a drought declaration, resolution, and staff report, refer to the March 23, 2009 Board packet and Public Hearing Item Number 9.

The drought stages now defined by this Plan are consistent with the February 26, 2010 recommendations of a Regional Water Authority (RWA) work group, which consisted of ten member agencies in the Sacramento region. The group was tasked with developing a regional water shortage contingency plan that would provide consistent messaging for the region, and ranges from Stages 1 through 4 as the water shortage becomes progressively worse. When a drought stage is declared by the water purveyor's governing body, as deemed necessary, the individual purveyors would also determine the actual water demand reductions for each declared stage.

The four stages of the EID Drought Action Plan depend upon District water supply conditions, and the corresponding response requested of our customers. For normal water supply conditions, the District would continue to implement water conservation measures and prohibit water waste, while raising public awareness regarding water efficiency practices. If water supplies become slightly restricted, the Plan calls for an introductory **Stage 1** drought response, during which customers are informed of possible shortages and asked to voluntarily conserve up to 15 percent. At **Stage 2** when water supplies become moderately restricted, both voluntary and mandatory measures are implemented to achieve a demand reduction goal of up to 30 percent. If water supplies subsequently become severely restricted, a **Stage 3** drought can be called with the enforcement of mandatory measures to achieve a demand reduction goal of up to 50 percent. Lastly, if drought conditions persist and the District experiences extremely restricted water supplies, then a **Stage 4** can be implemented that requires water rationing for health and safety purposes in order to achieve a greater than 50 percent reduction of demands.

Table 1 below summarizes these water supply conditions and the corresponding drought stages, titles, and objectives; along with the expected response actions and demand reduction targets. The stage titles are taken from the RWA workgroup recommendations.

Table 1 - Drought Stages Summary				
Water Supply Conditions	**Drought Stage**	**Stage Title**	**Stage Objective**	**Response Actions**
Normal Water Supply	**None** - Ongoing water conservation and enforcement of water waste prohibition.	Normal Conditions	Public awareness of water efficiency practices and prohibition of water waste.	Public outreach and education for ongoing water efficiency practices and the prohibition of water waste.
Slightly Restricted Water Supplies Up to 15% Supply Reduction	**Stage 1** Introductory stage with voluntary reductions in use.	Water Alert	Initiate public awareness of predicted water shortage and encourage conservation.	Encourage voluntary conservation measures to achieve **up to a 15% demand reduction.**
Moderately Restricted Water Supplies Up to 30% Supply Reduction	**Stage 2** Voluntary and mandatory reductions in water use.	Water Warning	Increase public awareness of worsening water shortage conditions. Enforce mandatory measures such as watering restrictions.	Voluntary conservation measures are continued, with the addition of some mandatory measures to achieve **up to a 30% demand reduction.**
Severely Restricted Water Supplies Up to 50% Supply Reduction	**Stage 3** Mandatory reductions in water use.	Water Crisis	Enforce mandatory measures and/or implement water rationing to decrease demands.	Enforce mandatory measures to achieve **up to a 50% demand reduction.**
Extremely Restricted Water Supplies Greater than 50% Supply Reduction	**Stage 4** Water rationing for health and safety purposes.	Water Emergency	Enforce extensive restrictions on water use and implement water rationing to decrease demands.	Enforce mandatory measures to achieve **greater than 50% demand reduction.**

1.3 Action Plan Organization

This document will focus on those activities directly impacting the management of water supply and demand, along with the customer services that would be modified to address changing drought conditions. The tasks and duties in this Plan are organized by function rather than by department. There are a number of policies that are identified as drought conditions occur. Revisiting and updating drought policies during and after a drought are essential to continuing the benefit and effectiveness of this Plan.

1.4 Applicable Water Codes

During times of water shortage, there are actions the District may take that are not solely based upon internal policies and regulations. Several California Water Code Sections and California Codes of Regulation grant authority to or mandate the water purveyor to declare drought conditions and implement drought stages. Included below are **summaries** of specific actions required during water shortage conditions; however, the official California Water Code or California Code of Regulations should be referenced for the complete language of the section.

Title 23, California Code of Regulation, Section 865 – Mandatory Actions by Water Suppliers – To promote water conservation, each urban water supplier shall implement all requirements and actions of the stage of its water shortage contingency plan that imposes mandatory restrictions on outdoor irrigation of ornamental landscapes or turf with potable water.

Section 350 – The governing body of the water purveyor may declare a water shortage emergency condition whenever it determines that ordinary demands cannot be satisfied without depleting supplies to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

Section 351 – The declaration shall be made only after a public hearing is held, at which consumers have an opportunity to protest and to present their respective needs to the governing body. There is an exception for a breakage or failure that causes an immediate emergency.

Section 352 – At least seven days prior to the date of the public hearing, a notice of the time and place of the hearing shall be published in a newspaper that is distributed within the water purveyor's service area.

Section 353 – When the governing body has declared a water shortage emergency condition within its service area, it shall adopt regulations and restrictions on the delivery and consumption of water supplied for public use in order to conserve water supply for the greatest public benefit, with particular regard to domestic use, sanitation, and fire protection.

Section 354 – After allocating the amount of water, which in the opinion of the governing body will be necessary to supply domestic use, sanitation, and fire protection, the regulations may establish priorities in the use of water for other purposes – without discrimination between consumers using water for the same purpose.

Section 355 – These regulations and restrictions shall remain in effect during the water shortage emergency condition, and until the water supply has been replenished or augmented.

Section 356 – These regulations and restrictions may prohibit new or additional service connections, and authorize discontinuing service to consumers willfully in violation of a regulation or restriction.

Section 357 – These regulations and restrictions prevail over any conflicting laws governing water allocations while the water shortage emergency condition is in effect.

Section 22257 – An irrigation district may impose equitable rules and regulations, including controls on the distribution and use of water, as conditions of ongoing service to its customers.

1.5 Drought and Water Management Tools

There are resources available to aid water purveyors and individuals before, during, and after a drought. Below is a brief description of a few of these tools.

- **California Urban Drought Guidebook**– a publication providing help to water managers facing water shortages by showing them how to use tried-and-true methods of the past, such as demand management, conservation analysis, and fiscal considerations; as well as new methods and technology such as ET controllers and cooling system efficiencies. Download the Urban Drought Guidebook, 2008 Updated Edition at: http://www.water.ca.gov/pubs/planning/urban_drought_guidebook/urban_drought_guidebook_2008.pdf

- **DWR Office of Water Use Efficiency** – makes available technical expertise, manages the CIMIS weather station network, carries out demonstration projects and data analysis to increase efficiency where possible, and provides loans and grants to achieve efficiency in water and energy. This information can be found at www.owue.water.ca.gov.

- **DWR Drought Conditions** – a webpage providing State and regional updates with regards to water conditions. More information can be found at http://www.water.ca.gov/waterconditions/

- **U.S. Bureau of Reclamation Drought Program** – aids federal water contractors and other interested parties in a wider view of drought conditions, encompassing the western United States. Staff from this program will also provide technical assistance, grant and loan funding, and expertise in drought planning. Information on this Bureau program can be found at www.usbr.gov/drought.

- **California Urban Water Conservation Council** – an organization serving water purveyors and environmental stakeholders through a collaborative process. Provides best management practices (BMPs) for municipal water conservation, as well as technical expertise for the implementation of these BMPs. More information can be found at www.cuwcc.org.

2.0 Coordination and Guidelines

EID's drought response should be managed by participants in the District's Drought Response Team (DRT), which should include department heads and/or their appointed representative and the General Manager. The DRT will coordinate with other agencies in the county and region through a Drought Interagency Coordination Committee (DICC) managed by the El Dorado County Water Agency. Responding to a drought in El Dorado County should include a number of tactics and agencies, so this multi-level management team with function-specific responsibilities is an important planning device for collaborative and comprehensive drought event management.

2.1 Drought Response Team

The Drought Preparedness Plan emphasized the importance of a DRT for inter-District drought management. Initially, the DRT should be made up of staff representing the following functions.

- Engineering and Operations
- Finance and Customer Services
- Legal
- Public Outreach
- Recreation and Property
- Water Efficiency

This list may be narrowed down due to staff availability and specific needs, as different functions may not be necessary in all situations nor at all times.

Role and Responsibilities

The DRT will be responsible for monitoring the activities of the District with regard to general drought management, including issues of timing, policy, public relations, financial solvency, customer education, facility operations, environmental considerations, and public health. The EID Board of Directors should be updated by the General Manager and/or staff at regular and special board meetings. During cases of extreme drought, updates may occur more often by e-mail or by phone, consistent with the requirements of the Ralph M. Brown Open Meetings Act.

The DRT should meet periodically during normal water supply conditions to discuss updates and other important ongoing considerations. The group would meet more often as drought events occur and worsen, perhaps once per week or even once per day in extreme cases. A DRT meeting may be requested by any member, but should be facilitated and convened jointly by the Customer Services and Water Operations Managers or as designated by the General Manager.

Another important component of the DRT function during the early stages of drought is to make preparations for subsequent stages, including an examination of staff levels, financial resources, water waste enforcement staff resources, and areas of collaboration among other agencies in the region. It is also important for the DRT to recognize that some of the activities recommended by this Plan may not be possible at current staffing levels and with current financial resources.

2.2 Drought Monitoring and Modeling

While County-wide strategies and mechanisms can be discussed by the DICC, monitoring of individual water supplies and drought conditions are the responsibility of each water purveyor. Within EID, drought monitoring will be the combined task of engineering and operations. It is important that staff use the sources of information and drought tools available to them to ensure adequate monitoring. Because drought is the leading hazard of economic loss in the United States each year, monitoring regional and long-term trends within the United States will enable EID to be better prepared for drought. Local drought conditions can change very quickly, but if staff frequently monitors the climatic conditions that cause hydrologic drought, EID will be better equipped to manage District-wide concerns.

Drought Tools

Therefore, the two main tools appropriate to meet these goals of drought monitoring are as follows.

1) **National Drought Monitor** – This tool is available on a weekly basis as an email update, and consists of a map of the United States, a corresponding narrative of drought conditions, and weekly predictions of future conditions. This information is also available through the U.S. government's drought portal at the following website address. http://www.drought.gov/portal/server.pt/community/drought_indicators/us_drought_monitor

   The drought portal also includes several indices and corresponding maps, including long term meteorological conditions, standardized precipitation, drought severity, surface water supply, soil moisture conditions, and crop moisture for short-term droughts.

2) **Supply Remaining Index (SRI Model)** – This tool was initially developed during the County-wide process of drought preparedness planning, and then further refined by EID. The SRI Model calculates a supply remaining index and yields a multi-colored "dashboard" display, which indicates the current drought stage. The tool is an Excel file that uses current and real-time data, including EID reservoir levels, the water year type as determined by the California Department of Water Resources, and the ENSO[1] cycle from the National Oceanic and Atmospheric Administration's Climate Prediction Center.

Both tools provide important considerations in the monitoring of possible drought events, and should be used collaboratively by engineering and operations staff, with the findings discussed at the periodic DRT meetings. In the end though, staff experience and knowledge regarding the District's water supply system will always be an important component of the DRT analysis.

2.3 Interagency Coordination

The County's Drought Interagency Coordination Committee includes regional partners and water purveyors. The team would meet monthly during a drought to discuss the issues of water supply and demand, conjunctive use, and environmental needs. EID staff should attend these coordination meetings, as designated by the General Manager.

MONITORING – Communication among agencies of their drought indicator status would allow each agency to understand the current conditions of the other water purveyors.

PUBLIC OUTREACH – Development of drought education tools, plus collaboration on public education and outreach, provides efficiency and consistency within the region.

[1] ENSO is "El Niño Southern Oscillation," which is an episode of oceanic cycles used to predict whether the Pacific Ocean will be in a La Niña or El Niño cycle – warm or cold episodes – that can influence weather patterns such as heavy precipitation or drought conditions in California and the western United States.

RESOURCE SHARING – Collaboration resources, including: staff, grant funding, monitoring tools, infrastructure, water, and educational outreach tools; would allow agencies to support each other efforts in the community.

2.4 Drought Guidelines and Definitions

There are a number of circumstances during a drought in which the District would be required to make and implement decisions that are not solely based upon water supply availability, such as how long to stay in a drought stage, and how demand reductions should be quantified. It is also important to clearly define in advance the base periods that will be employed for each user class during the drought event.

Overall Guidelines

Below is a list of drought guidelines developed to assist staff in managing the drought event.

1) The District will strive to stay within each stage of drought for a complete billing cycle (at least 2 months) for the equitable implementation of drought rates and effective public outreach.
2) Drought stage demand reductions will be quantified by output at the water treatment plants during all stages; however, in Stages 3 and 4 meter reads may also be necessary to determine compliance with individual allocations and reduction targets.
3) This Drought Action Plan should be reviewed and updated every 5 years (or as needed) due to changes in water supplies, operations, expected water demands or other relevant factors.

Base Period Definitions

Below is a list of base period definitions developed to assist staff with the implementation of conservation measures during the drought event.

1) The base period for single-family residential customers is defined as the District-wide average consumption per household – calculated using a three-year average of the consumption data for **all** single-family residential customers, divided by the total number of residential customers.
2) The base period for multi-family residential customers is defined as the District-wide average consumption per dwelling unit – calculated using a three-year average of the consumption data for **all** multi-family residential customers, divided by the total number of dwelling units.
3) The base period for commercial, industrial, and institutional customers, with meters serving both building and landscape, is defined as the three-year average of the **individual** customer's consumption data.
4) The base period for landscape irrigation only customers is defined as the three-year average of the **individual** customer's consumption data.
5) The base period for agricultural customers is defined by the District's Irrigation Management Services (IMS) program – calculated using the onsite crop moisture measurements applied in the crop model, and the resulting irrigation recommendation for the **specific site**.
6) The base period for the remaining small farm and agricultural customers is defined as the five-year average of the **individual** customer's consumption data.

Early Actions

CROSS TRAINING – It is important that ongoing staff training be conducted before a drought occurs, as staffing may be necessary for the enforcement of water waste prohibition, enforcement of mandatory or prohibited conservation measures, and answering questions related to recycled water use. Staff ordinarily responsible for other duties may be temporarily reassigned to implement these drought-response activities.

BOARD UPDATES – The Board should be kept appraised of all drought monitoring and predicted water shortages. It is the responsibility of the General Manager to decide the best method for these updates.

PUBLIC OUTREACH TO ID 97 OWNERS – This updated Drought Action Plan modifies the drought stages and responses referred to in the Improvement District No. 97 Interim Agreement, which sets limits and minimum aesthetic flows in Clear Creek from Jenkinson Lake releases. Pursuant to the Interim Agreement, the District needs to "meet and confer" with the ID 97 interested parties to amend paragraph 10 of the agreement, which should now reference the modified drought stages and titles used in this updated Drought Action Plan.

- Background. The *4-Stage Water Supply Matrix and Water Shortage Response Measures* – a copy of which can be found in Appendix D of the 2008 Drought Preparedness Plan – was in effect when the ID 97 Interim Agreement was adopted by the Board of Directors in 2005. Pursuant to this agreement, the flow rate in Clear Creek is reduced as the drought stages progress, from a maximum of 3 cubic-feet per second (cfs) down to a minimum of 1 cfs. When drought is imminent, notifications are to be sent to the ID 97 property owners that Clear Creek flows may be reduced with the drought stages.

3.0 Ongoing Activities

This Drought Action Plan addresses water management and customer service activities that would be modified during drought conditions. In this section, ***Ongoing Actions*** are defined as activities that are performed on a regular basis, even in non-drought conditions, that might change in the face of a drought being declared. Throughout the District, there are a number of ongoing activities related to drought management. It will be the responsibility of the DRT members to ensure that these activities continue to occur in their respective areas during non-drought conditions, in order to be ready for a declaration of drought. The following sub-sections refer to staff functions rather than departments, and include a brief description of these functions and their ongoing actions as they pertain to a drought.

3.1 Engineering and Operations

The primary responsibility of engineering and operations staff is to ensure the continued integrity of infrastructure throughout the District's service area, in addition to actively monitoring and modeling potential drought conditions. Operations staff must also stay abreast of changes during drought conditions, such as lower pressures, increased sewer pipeline blockages, lower reservoir levels, changes in demand patterns, and other potential impacts. The environmental staff contributions to the District's drought preparedness occur mostly prior to a drought event while conducting environmental reviews and permit preparation for proposed projects.

Ongoing Actions

1) Track regional weather predictions and monitor reservoir levels in conjunction with the dashboard drought risk assessment.
2) Gather information on drought management from other agencies.
3) Track scientific studies and reports documenting the effects of extended drought conditions on listed species.
4) Incorporate the results of various drought supply analyses and modeling when analyzing the environmental effects of proposed projects.
5) Examine the District's infrastructure for leakage, and reduce losses where cost-effective.
6) Pursue the development of drought impact avoidance projects, if needed.
7) Investigate potential reservoir re-operation, and consider long-term adjustments to reservoir release rules.
8) Consider the environmental effects of long-term draw-down of reservoirs, such as air quality, soil/sedimentation, water quality, temperature, and other conditions that may affect the District's ability to provide treated water.
9) Work with the County Water Agency and the El Dorado Water and Power Authority to facilitate additional water supply projects, if needed.
10) Collaborate with regional water management groups, such as the Regional Water Authority (RWA), and the Cosumnes, American, Bear, and Yuba Rivers group (CABY).
11) Maintain interagency coordination, primarily through the DICC, but also through participation in federal, state, and/or regional drought task forces.

Ongoing Actions

3.2 Finance and Customer Services

The primary responsibility of finance staff is to keep the District solvent when faced with the increased costs and potential for reduced revenues associated with a drought condition in the watershed. Along with other District employees, staff must be able to look into the future to assess possible staffing needs and potential sources of cost to the District. On the other side, finance staff must also be able to identify possible sources of income, or at the very least, a method of financing the additional efforts associated with managing drought.

Ongoing Actions

1) Establish procedures for implementing the drought rates.
2) Inform the public regarding potential drought rates -*with public outreach*.
3) Establish a "drought contingency fund" for the expenses related to drought administration.
4) Enforce the water waste prohibition regulation - *with legal and water efficiency*.
5) Educate customers on how to read their water meters in order to determine their own monthly usage during times of demand restrictions -*with public outreach*.
6) Assist community members whose wells have gone dry due to drought conditions, to access drinking water through bulk water stations and key cards - *with public outreach*.

3.3 Legal

The primary responsibility of administration and legal staff is to ensure that customer service continues as planned-for in drought conditions and that EID's actions are legal and defensible. It is important that the administration and legal staff be appraised of policy and planning activities with regard to water supply, regional activities, and inter-agency planning.

Ongoing Actions

1) Ensure the District follows applicable state law when declaring drought conditions, and include citations to pertinent legal authority in drought-related Board actions.
2) Continue to enforce the water waste prohibition regulation - *with water efficiency*.
3) Examine possible legal implications of dry reservoirs and canals during drought conditions, and associated liability at recreational lakes - *with recreation and property*.
4) Examine the District's Board Policies and Administrative Regulations for potential changes and/or additions for better drought management.
5) Investigate all dry-year water supply options such as water transfers, conjunctive use, and groundwater banking - *with engineering and operations*.
6) Track legislation relating to drought, especially as it pertains to financing drought management, water transfers, and ground-water banking.
7) Urge county and city planners to consider the drought stages when implementing development and future planning scenarios.
8) Collaborate with regional water management groups, such as the Regional Water Authority (RWA); and the Cosumnes, American, Bear, and Yuba Rivers group (CABY) - *with engineering and operations*.

3.4 Public Outreach

The efforts of public outreach staff are integral to the implementation a successful Plan and management of a drought event. Public education is the most important activity when a drought does occur, because demand management will not be successful if customers are not adequately informed regarding the water situation and the requirements of the purveyor. The most important time for public outreach and education is at the beginning of Stage 1.

Ongoing Actions

1) Educate customers regarding water saving devices and practices - *with water efficiency*.
2) Educate customers regarding on the overall challenges of providing a reliable water supply in a semi-arid climate, as this will make imposition of drought rates more understandable.
3) Educate customers regarding drought stages through bill inserts or a printed message on the bill, an article in the bi-monthly newsletter, e-mail messages, social media, drought website, Rapid Notify automated telephone messages, direct mail post cards, and newspaper advertisements - *with water efficiency*.
4) Inform customers about potential drought rates - *with finance and customer services*.
5) Develop a webpage for "Drought Stage" information, including an easy-to-understand explanation of when a drought is called and when a drought has ended - *with water efficiency*.
6) Educate customers on how to read their water meters in order to determine their own monthly usage during times of demand restrictions - *with finance and customer services*.
7) Work with the DICC to educate community members, whose wells have gone dry due to drought conditions, about the availability of drinking water through bulk water stations with key card access - *with customer services*.

3.5 Recreation and Property

The challenges and responsibilities of recreation and property staff in the face of a drought are quite different from those of other EID functions. The primary concerns with recreation and property are the liabilities associated with water attractions in low water level conditions. These can vary from exposed rocks in reservoirs to increased danger of fires resulting from recreational use in campgrounds and day use areas. In addition, property staff can be involved with the siting and development of drought mitigation implementation projects.

Ongoing Actions

1) Consider alternative recreational strategies/opportunities for dry years.
2) Identify sensitive areas and outline management plans for these areas in dry years.
3) Examine possible legal implications of dry reservoirs and canals during drought conditions, and associated liability at recreational lakes - *with legal*.
4) Ensure adequate protection against catastrophic fires through vegetation management and homeowner education (adjacent to District facilities).
5) Inform customers of the mooring facility policy during drought.
6) Work with regional partners to identify areas of greatest fire risk.

3.6 Water Efficiency

Water efficiency staff should work closely with public outreach staff, as the activities required to meet water supply constraints are usually through the implementation of water efficiency practices or devices. Because there are ongoing mandated activities, a drought event will increase the number of tasks for which water efficiency staff are responsible. The Drought Preparedness Plan stipulated a number of water conservation actions, some of which are activities *required* of customers, such as not filling swimming pools; while some are simply *guidelines* for customers to help them save water.

Agricultural demands are an important consideration during drought events. The District's Irrigation Management Service (IMS) program is not required for agricultural customers, but staff should encourage participation in the IMS program prior to a drought, including the education of landowners with regard to individual drought planning. A total of 2,000 acre-feet of water is estimated to be saved each year by the IMS program, as verified by the State Water Resources Control Board in 1986.[2]

Ongoing Actions

1) Identify and pursue drought assistance grants available for water efficiency programs.
2) Enforce the water waste prohibition regulation - *with legal and customer services.*
3) Offer water efficiency rebate programs and complimentary water surveys as staff, budget, and grant funding allows.
4) Continue to implement the California Urban Water Conservation Council's Best Management Practices, as applicable and as required by the U. S. Bureau of Reclamation.
5) Maintain the IMS program for commercial agriculture customers.
6) Educate customers regarding drought stages through bill inserts or a printed message on the bill, an article in the bi-monthly newsletter, e-mail messages, and newspaper advertisements - *with public outreach.*
7) Develop a webpage for "Drought Stage" information, including an easy-to-understand explanation of when a drought is called and when a drought has ended - *with public outreach.*

[2] Source: EID's Water Supply Master Plan, Administrative Draft, December 2001, Pages 3-36 and 3-38. As part of the South Fork American River (SOFAR) water rights permitting process, the 2,000 acre-feet of IMS program water savings was verified in 1986 by the SWRCB; and later acknowledged in an SWRCB letter dated January 1989.

4.0 Stage 1 – Water Alert

A drought Stage 1 is considered a water alert, where water supplies are only slightly restricted. The response actions are intended to initiate public awareness of a possible water shortage in the near future, and to encourage water efficiency practices. Stage 1 actions target up to a 15 percent demand reduction through the implementation of voluntary measures. The following ***New Actions*** outlined in this section are activities that must be performed during this stage of a drought declaration.

At the beginning of a dry season there is no certainty as to whether the conditions will persist into a full drought. Accordingly, the initial phase of conservation is voluntary on the part of the customer, and the use of recycled water continues as normal. Staff should implement an outreach program to educate customers regarding the status of District water supplies, and the predicted water shortage; however, the education should be done without alarming customers as there is not yet a true emergency. This outreach can be complemented by the actions of the Department of Water Resources and the Regional Water Authority. To avoid confusion though, it is important to educate our customers that due to the District's multiple water sources and integrated infrastructure, the rest of the region and the state might be worse off than the District. Raising public awareness therefore represents one of the most important components of this Plan.

4.1 Engineering and Operations

New Actions

1) Monitor reservoir levels in coordination with dashboard drought risk assessment on a monthly basis.
2) Alert ditch customers of potential cutbacks, reminding them Item No. A-8 of their ditch application for service, and reduce potable water releases from valve blow-offs, if possible - *with customer services.*
3) Alert the Improvement District No. 97 property owners listed on the current County assessment roll of the water alert declaration, reminding them of paragraph 10 of the 2005 Interim Agreement for ID 97 and possible accommodations to decrease the releases to Clear Creek should the drought conditions continue - *with legal.*
4) Monitor water demands weekly at the water treatment plants to assess the amount of water savings accomplished and forecast end-of-year carryover storage needs.
5) Identify areas of low pressure, both present and projected, and communicate this to local fire protection agencies.
6) Increase monitoring for water theft.
7) Refer to the draft ditch operations guidelines in Appendix E of the Drought Preparedness Plan for further information on ditch management during a drought.
8) Alert regulatory agencies to the possibility of decreased stream flow.
9) Examine Deer Creek discharge requirements; and assess the need to work with stakeholders and the State Water Resources Control Board to temporarily reduce flows due to extraordinary circumstances.

4.2 Finance and Customer Services

New Actions

1) Implement the Stage 1 drought rates as approved by Board action.
    a) Add 15% drought surcharge to commodity rates only.
    b) Apply to current water rates on all user classes.
2) Implement a project code or charge number for use by all employees to track time and expenses for all drought-related activities.
3) Alert ditch customers of potential cutbacks and remind them of Item No. A-8 of their ditch application for service - *with engineering and operations*.
4) Identify baseline and target levels of water usage per user class - *with water efficiency*.
5) Request assistance in programming and obtaining database information appropriate to the drought stage, customer requests, and cutback priorities.

4.3 Legal

New Actions

1) When determined appropriate by the DRT, prepare materials for the declaration of a water alert for approval by the Board of Directors, consistent with applicable state law -*with engineering and operations*.
2) Alert the Improvement District No. 97 property owners listed on the current County assessment roll of the water alert declaration, reminding them of paragraph 10 of the 2005 Interim Agreement for ID 97 and possible accommodations to decrease the releases to Clear Creek should the drought conditions continue - *with engineering and operations*.
3) Track legislation relating to drought, especially as pertains to the management of water transfers/ground-water banking, and financing drought management.

4.4 Public Outreach

New Actions

1) Create educational information regarding the stage of drought, what is expected from customers, and the consequences if demand reduction goals are not met.
2) Ensure that customers are aware that drought conditions may worsen quickly, causing rapid progression through the drought stages.
3) Educate recycled water users and community leaders on the consequences of ceasing potable water supplementation during a drought Stage 4.
4) Ensure that the public is aware of the water waste regulation and all associated penalties - *with water efficiency*.
5) Work with local and regional newspapers to secure op-ed space as-needed for public information and water supply/drought education.
6) Maintain drought information on website, and update throughout the drought.
7) Strongly encourage local restaurants to post "serve if requested" messages via poster, table tent signage, in menus, or other means in their establishment - *with water efficiency*.

4.5 Recreation and Property

New Actions

1) Implement new mooring facility policy when warranted by low lake levels.

4.6 Water Efficiency

New Actions

1) Increase patrols for water waste, and enforce Administrative Regulation (AR) 1041, Water Waste Prohibition, as currently amended and incorporated by reference.
2) Increase educational efforts regarding water efficiency practices - *with public outreach*.
3) Identify base period and target levels of water usage per user class - *with customer services*.
4) Strongly encourage local restaurants to post "serve if requested" messages via poster, table tent signage, in menus, or other means in their establishment - *with public outreach*.
5) Voluntary: Request customer compliance with these water saving guidelines.
    a) Apply irrigation water during evening and early morning hours only (7 PM to 10 AM);
    b) Use weather information to regulate irrigation;
    c) Inspect irrigation system for leaks and then repair or replace;
    d) Adjust sprinkler run times to avoid runoff; and
    e) Do not refill a swimming pool that has been drained.

5.0 Stage 2 – Water Warning

Drought Stage 2 action items are intended to increase public understanding of worsening water supply conditions, encourage community-oriented voluntary conservation measures, enforce some conservation measures and implement mandatory water use reduction measures to decrease "normal" demand by up to 30 percent. Stage 2 activities include a continuation of activities described under Stage 1 and new actions. The achievement of the water use reduction goal is measured by overall performance of the entire customer population, based on EID production meters at the three main potable water treatment plants. It is important to note that user category demand reduction goals are not by individual customer, but are the goal for the customer category.

At the point of calling a Stage 2 Drought, the dashboard indicator alerts the DRT that the drought will continue and worsen; and customers are asked to contribute to a system-wide demand reduction of up to 30%. The major emphasis by public outreach and customer service is to elevate customer awareness of the supply situation and encourage continued savings to achieve the 30% demand reduction goal.

5.1 Engineering and Operations

New Actions

1) Assess the need for a temporary change in the point of diversion for water taken from Folsom Reservoir to further upstream on the South Fork of the American River, possibly to supplement Sly Park's Jenkinson Lake through the Hazel Creek Tunnel - *with legal*.
2) Examine the risk of solids loading, line blocks, and other low-flow hazards, and then take appropriate action.
3) Monitor reservoir levels in coordination with dashboard drought risk assessment.
4) Provide 30-days written notice to all Improvement District No. 97 property owners listed on the current County assessment roll, notifying them of the water warning declaration and the planned decrease of releases into Clear Creek; and take to the Board for approval or ratification at the first available regular Board meeting - *with legal*.
    a) After the 30-day notification period, decrease releases into Clear Creek to no more than 2.0 cfs.
5) Begin examination of source water quality for increasingly concentrated pollutants and higher temperatures.
6) Monitor water demands weekly at the water treatment plant to assess the amount of water savings accomplished.
7) Refrain from releasing water from valve blow-offs.
8) Review all regulatory requirements relating to water quality and stream flow; and investigate how the District might be affected by these regulations in case of extreme drought.
9) Monitor source water quality for increasingly concentrated pollutants and higher temperatures.

5.2 Finance and Customer Services

New Actions

1) Implement the Stage 2 drought rates as approved by Board action.
    a) Add 30% drought surcharge to commodity rates only.
    b) Apply to water rates in effect prior to drought declaration, and on all user classes.
2) Continue to monitor income based on customer deliveries and the financial solvency of the drought management activities.
3) Assess the fiscal consequences and present need for a larger drought management staff, particularly of temporary workers.
4) Consider adding customer service representatives to help with answering phones, assisting in customer questions regarding drought restrictions, and possibly extending hours later into the evening.

5.3 Legal

New Actions

1) When determined appropriate by the DRT, prepare materials for the declaration of a water warning for approval by the Board of Directors, consistent with applicable state law -*with engineering and operations*.
2) Assess the need for a temporary change in the point of diversion for water taken from Folsom Reservoir to further upstream on the South Fork of the American River, possibly to supplement Sly Park's Jenkinson Lake through the Hazel Creek Tunnel - *with engineering and operations*.
3) Provide 30-days written notice to all Improvement District No. 97 property owners listed on the current County assessment roll, notifying them of the water warning declaration and the planned decrease of releases into Clear Creek; and take to the Board for approval or ratification at the first available regular Board meeting - *with engineering and operations*.
4) Review options for Area-of-Origin water rights.
5) Seek exceptions to U. S. Bureau of Reclamation contract shortage criteria, if needed.

5.4 Public Outreach

New Actions

1) Send monthly notification postcards to all customers, and email messages to those customers providing email addresses, informing them of mandatory watering restrictions and other conservation requirements in effect.
2) Launch a monthly Rapid Notify automated telephone message informing customers of mandatory watering restrictions and other conservation requirements in effect.
3) Work with regional partners to spread the word about drought and fire danger.
4) Secure an op-ed space in local and regional newspapers for an essay on water supply and use restriction in El Dorado County.
5) Continue to update the Drought Stage website link, including weekly updates on community demand response.

6) Assist the City of Placerville with water use reduction targets - *with water efficiency*.

5.5 Recreation and Property

New Actions

1) Urge caution and educate visitors within the District's recreational areas due to elevated fire danger.

5.6 Water Efficiency

New Actions

1) Coordinate with the Sacramento region through RWA membership, especially water purveyors with a common border, in order to coordinate educational efforts to better reach customers.
2) Identify the top 10% of residential and CII[3] users, and target these customers with water efficiency outreach -*with customer services*.
3) Voluntary: Inform all customers of the targeted 70% of base usage during a Stage 2 drought with public outreach.
4) Voluntary: Ask customers to refrain from using District-supplied water for these purposes - *with public outreach*.
    a) Watering new or replacement turf.
    b) Irrigating new agricultural plantings.
    c) Using potable water to hose off pavement, sidewalks, or driveways.
    d) Filling any new swimming pool.
    e) Serving glasses of drinking water automatically at dining establishments.
    f) Using water from a fire hydrant – except for fighting fires, essential water quality uses, and toxic clean-up purposes.
5) Offer assistance to the City of Placerville to help meet their water use reduction targets - *with engineering and operations*.
6) Mandatory: Watering restrictions are in place as shown below. All outside irrigation, potable and recycled—including garden, lawn, landscape, pasture, parks, golf courses*, school grounds, and public grounds—shall ONLY occur according to the following schedule:
    a) Outdoor irrigation is limited to the hours of 7:00 PM and 10:00 AM.
    b) Irrigation systems must be turned off during rain events.
    c) Watering days are based on street addresses.
    d) Once-a-week watering is allowed from November 16 to April 15 on Sundays for customers with addresses ending in even numbers (0, 2, 4, 6, 8) and on Saturdays for customers with addresses ending in odd numbers (1, 3, 5, 7, 9).
    e) Twice-a-week watering is allowed from April 16 to June 15 and September 16 to November 15 on Wednesdays and Sundays for customers with addresses ending in

[3] CII is defined as all commercial, industrial, and institutional customers; which includes businesses, schools, community service districts, owner associations, churches, and public buildings and grounds.

even numbers and Tuesdays and Saturdays for customers with addresses ending in odd numbers.

f) Three-times-a-week watering is allowed from June 16 to September 15 on Sundays, Wednesdays, and Fridays for customers with addresses ending in even numbers and Tuesdays, Thursdays, and Saturdays for customers with addresses ending in odd numbers.

g) Exemptions are allowed for non-residential customers if a detailed conservation plan is submitted to the District that demonstrates a minimum 30% water savings over customer's previous 3-year average usage.

7) Mandatory: Agricultural metered irrigation customers who do not participate in the Irrigation Management Services program must submit a detailed conservation plan to the District that demonstrates minimum 30% water savings over customer's previous 3-year average usage.

6.0 Stage 3 – Water Crisis

The objective of Drought Stage 3 actions are to reduce District-wide water demand by up to 50% through effective and consistent public outreach, enforce extensive restrictions of water use, and implement water rationing. Protection of water supply for public health and safety purposes is the primary objective during Stage 3 drought conditions. This stage of drought will require much more staff time for policy enforcement with the public, and much greater inter-agency coordination. Because of the mandatory restrictions, emergency management agency notification is required, and public outreach and education will be key in achieving the water savings goal in Stage 3.

6.1 Engineering and Operations

New Actions

1) If needed, implement a temporary change in the point of diversion for water taken from Folsom Reservoir to further upstream on the South Fork of the American River, possibly to supplement Sly Park's Jenkinson Lake through the Hazel Creek Tunnel - *with legal.*

2) As needed, implement and monitor emergency water distribution.

3) EID's Director of Operations is responsible for notifying the El Dorado County Emergency Management Agency (EMA) of any mandatory requirements for water use reduction.

   a) Staff should consider the escalation of emergency management at the beginning of this stage.

4) Also contact the County's EMA regarding fire protection directives that are being implemented within the county.

5) Provide 30-days written notice to all Improvement District No. 97 property owners listed on the current County assessment roll, notifying them of the water crisis declaration, and of the planned decrease of releases into Clear Creek; and take to the Board for approval or ratification at the first available regular Board meeting - *with legal.*

   a) After the 30-day notification period, decrease releases into Clear Creek to no more than 1.5 cfs.

6) Prohibited: Use of EID potable water for construction use.

6.2 Finance and Customer Services

New Actions

1) Implement the Stage 3 drought rates as approved by Board action on March 26, 2012.
    a) Add 50% drought surcharge to commodity rates only.
    b) Apply to water rates in effect prior to drought declaration, and on all user classes.

6.3 Legal

New Actions

1) When determined appropriate by the DRT, prepare materials for the declaration of a water crisis for approval by the Board of Directors, consistent with applicable state law - *with engineering and operations*.
2) If needed, implement a temporary change in the point of diversion for water taken from Folsom Reservoir to further upstream on the South Fork of the American River, possibly to supplement Sly Park's Jenkinson Lake through the Hazel Creek Tunnel - *with engineering and operations*.
3) Provide 30-days written notice to all Improvement District No. 97 property owners listed on the current County assessment roll, notifying them of the water crisis declaration, and of the planned decrease of releases into Clear Creek; and take to the Board for approval or ratification at the first available regular Board meeting - *with engineering and operations*.

6.4 Public Outreach

New Actions

1) Secure an op-ed and/or advertising space in local and regional newspapers to publicize mandatory water restrictions within the service area of the District.

6.5 Recreation and Property

New Actions

1) Remain alert to fire danger and water pressure considerations at outlying facilities; coordinate with other agencies to ensure a consistent public message.
2) Protect identified sensitive areas from overuse in extreme dry periods.
3) Limit or restrict filming within the District's recreational areas due to severe fire danger.

6.6 Water Efficiency

New Actions

Inform customers of these **mandatory** conservation measures in Stage 3 - *with public outreach*.

1) Prohibited: Filling empty swimming pools with District-supplied potable water.
2) Prohibited: Washing of vehicles (automobiles, recreational vehicles, trailers, etc.) and boats, or hosing off driveways/pavement with District-supplied potable water.
3) Prohibited: Filling or re-filling ponds, lakes, and other non-irrigation water features with District-supplied potable water.

4) Mandatory: Watering restrictions are in place as shown below. All outside irrigation, potable and recycled—including garden, lawn, landscape, pasture, parks, golf courses*, school grounds, and public grounds—shall ONLY occur according to the following schedule:
    a. Outdoor irrigation is limited to the hours of 7:00 PM and 10:00 AM.
    b. Irrigation systems must be turned off during rain events.
    c. Watering days are based on street addresses.
    d. Once-a-week watering is allowed from November 16 to April 15 on Sundays for customers with addresses ending in even numbers (0, 2, 4, 6, 8) and on Saturdays for customers with addresses ending in odd numbers (1, 3, 5, 7, 9).
    e. Twice-a-week watering is allowed from April 16 to June 15 and September 16 to November 15 on Wednesdays and Sundays for customers with addresses ending in even numbers and Tuesdays and Saturdays for customers with addresses ending in odd numbers.
    f. Three-times-a-week watering is allowed from June 16 to September 15 on Sundays, Wednesdays, and Fridays for customers with addresses ending in even numbers and Tuesdays, Thursdays, and Saturdays for customers with addresses ending in odd numbers.
5) Exemptions are allowed for non-residential customers if a detailed conservation plan is submitted to the District that demonstrates a minimum 30% water savings over customer's previous 3-year average usage.
6) Prohibited: Use of EID potable water for construction use.
7) Prohibited: IMS customers are not to use more water than recommended by the IMS program schedule.
8) Mandatory: Agricultural metered irrigation customers who do not participate in the Irrigation Management Services program must submit a detailed conservation plan to the District that demonstrates minimum 30% water savings over customer's previous 3-year average usage.
9) Prohibited: Mist systems.
10) Enforce the water waste prohibition regulation with the help of City and County law enforcement, if needed; and coordinate operational safety with HR-Safety/Security staff.

7.0 Stage 4 – Water Emergency

The objective of Drought Stage 4 actions are to further reduce water demands in order to achieve a greater than 50% reduction, which may be accomplished through effective and consistent public outreach, enforcement of extensive restrictions on water use, and the implementation of water rationing. Protection of the remaining water supply for public health and safety purposes is the District's primary objective during Stage 4 drought conditions. This stage of drought will require considerable staff time for enforcement, and much greater inter-agency coordination. Because of the mandatory restrictions, public outreach and education are key to meeting the water savings goals.

7.1 Engineering and Operations

New Actions

1) If needed, implement a temporary change in the point of diversion for water taken from Folsom Reservoir to further upstream on the South Fork of the American River, possibly to supplement Sly Park's Jenkinson Lake through the Hazel Creek Tunnel

2) EID's Director of Operations is responsible for notifying the El Dorado County Emergency Management Agency of mandatory water use reduction requirements.

3) Continue to coordinate with the County Emergency Management Agency regarding any fire protection directives that are being implemented within the county.

4) Provide 30-days written notice to all Improvement District No. 97 property owners listed on the current County assessment roll, notifying them of the water emergency declaration, and of the planned decrease of releases into Clear Creek; and take to the Board for approval or ratification at the first available regular Board meeting - *with legal*.

    a) Decrease releases into Clear Creek to no more than 1.0 cfs.

5) Suspend potable supplementation to the recycled water system.

7.2 Finance and Customer Services

New Actions

1) None at this time.

7.3 Legal

New Actions

1) When determined appropriate by the DRT, prepare materials for the declaration of a water emergency for approval by the Board of Directors, consistent with applicable state law - *with engineering and operations*.

2) If needed, implement a temporary change in the point of diversion for water taken from Folsom Reservoir to further upstream on the South Fork of the American River, possibly to supplement Sly Park's Jenkinson Lake through the Hazel Creek Tunnel - *with engineering and operations*.

3) Provide 30-days written notice to all Improvement District No. 97 property owners listed on the current County assessment roll, notifying them of the water emergency declaration, and of the planned decrease of releases into Clear Creek; and take to the Board for approval or ratification at the first available regular Board meeting - *with engineering and operations*.

7.4 Public Outreach

New Actions

1) Secure an op-ed and/or advertising space in local and regional newspapers to publicize mandatory water restrictions within the water service area of the District.

2) Use authorized email addresses and the "Rapid Notify" mass notification system as necessary to advise customers of water use restrictions or other drought alerts.

7.5 Recreation and Property

New Actions

1) Remain alert to fire danger and water pressure considerations at outlying facilities; coordinate with other agencies to ensure consistent public message.

2) Protect identified sensitive areas from overuse in extreme dry periods.

3) Restrict filming within the District's recreational areas due to extreme fire danger.

7.6 Water Efficiency

New Actions

1) Prohibited: Automatic sprinklers for the irrigation of existing turf, ornamental plants, garden or landscaped areas.
    a) Watering may ONLY occur by hand-held hose with shut-off nozzle or by a drip irrigation system.
2) Mandatory: Single-family residential meters serving detached homes are granted a 553 cubic-foot **per resident allotment** per bimonthly billing cycle for "health and safety," which is 68 gallons per person per day.[4]
    a) Allotments can be increased for additional residents and health-related issues.
3) Mandatory: Multi-family residential meters serving multiple units are granted a 471 cubic-foot **per resident allotment** per bimonthly billing cycle for "health and safety," which is 58 gallons per person per day.[5]
    a) Allotments can be increased for additional residents and health-related issues.
4) Mandatory: Recreational Turf non-IMS Ag and Small Farm customers must **reduce their usage** by 65%, based upon their usage during the same billing cycle in the base period.
5) Mandatory: IMS agricultural meters must **reduce their usage** by 40%, based upon their usage during the same billing cycle in the base period. IMS customers have already restricted use through weekly soil moisture data sampling and comply with irrigation schedule.
6) Allowed: Vital healthcare and public safety uses are exempt.
7) Mandatory: Commercial, Industrial & Institutional (CII): Reduce by 65%.

8.0 Post-Drought Actions

8.1 The End of a Drought

Coming out of a drought can occur quickly or slowly, depending on the weather and the storage accumulated with any precipitation. It is very important to make clear to the public that one good storm will not reverse weeks or months of dry weather. The conditions that end a drought require the filling of reservoirs, which usually occurs over time. Precipitation that occurs during the deepest of droughts can potentially put the District in a less severe stage of drought. If this occurs, and the DRT determines the present situation and probable future indicate a lessening of the drought, staff may recommend reducing the drought stage to the previous stage.

In the event that the drought severity lessens, it must be made explicitly clear to the public which stage the District has moved to, why the change was made, and what the measurements are based upon. Effective public education will minimize conflicts with regard to fines for mandatory cutbacks, and for health and safety concerns. In addition, a lessening of drought severity must be communicated clearly to all staff, especially those with regular public interaction.

[4] Source: Urban Drought Guidebook, 2008 Updated Edition; prepared by the State of California, Department of Water Resources, Office of Water Use Efficiency and Transfers; pages 61 and 193.

[5] Source: CA DWR Urban Drought Guidebook, 2008 Updated Edition; page 61.

- There are several scenarios that would lead the District to either declare the end of a drought or announce a less severe drought stage, including but not limited to, the following three cases.

  1) **Significant rainfall and snowpack** – While it is highly unlikely for one storm to end drought conditions, it is possible that a series of storms over a several-week period could fill Jenkinson Lake and replenish snowpack that could fill the Project 184 reservoirs in the spring. This scenario would assure staff that the drought has ended, and that a return to "normal" conditions is a responsible decision.

  2) **Significant rainfall but no snow** – It is also possible that Jenkinson Lake could fill from a series of storms, but little snowpack accumulates due to warm temperatures. In this scenario, there would be little snowpack to keep Jenkinson Lake full into the summer, and the Project 184 reservoirs may not fill. In this case, the water supply is not secure for the next year, and staff may recommend a less severe drought stage rather than a return to "normal" conditions.

  3) **Average rainfall and snowpack** – Another scenario could be the occurrence of a "normal" water year, with average precipitation and snowpack, following weeks or months of drought. These conditions may not fill the reservoirs adequately to assure staff that ending a drought declaration is the appropriate action. In this case, the drought stage may be lessened or stay the same, as it is important to remember that a year of average precipitation may not immediately result in "normal" conditions.

In any case, declaring the end of a drought depends in large part upon the judgment of staff, but the Supply Remaining Index tool (SRI Model) can also be used to make this determination. Refer to Section 2.2, Drought Monitoring and Modeling for more information on the SRI Model.

While this Drought Action Plan serves as a blueprint for actions in each stage of drought, it is not a rigid prescription for when and how to call a drought, or what actions to take in response. Those decisions must be made by informed and experienced staff, based upon the situation at the time, and approved by the Board of Directors.

8.2 Lessons Learned

When a drought is completely over, and District operations are back to normal, it is important to review what worked, what did not work, and how the overall drought response can be improved. The first step must be an examination of the stages, objectives, and response actions. Did the ongoing and new actions in this Plan work? Was there public confusion? If so, why? Did the mandatory actions cause problems due to uncertainty in implementation or ambiguity in description? A discussion among all DRT members and implementing staff is imperative to get a complete picture on these questions. Likewise, it may be important to repeat the same process with the County's Drought Interagency Coordination Committee, and to involve customers in the dialogue as well.

8.3 Financial Analysis

The District should analyze the financial considerations following a drought, which is an important way to gauge the success of drought management activities. A detailed financial assessment of both the costs and revenue incurred during a drought are important.

- Below are two scenarios of drought finances, along with their impacts on the District.

  1) **Costs to the District** – When the drought Stage 1 was declared, a charge number should have been established for all new drought activities, including: permanent staff time,

temporary worker time, special materials, and other costs associated with drought management. All costs associated with the drought must be charged to this number in order to completely account for the additional costs incurred during drought. It is important to know these costs, as the knowledge will assist the District in gauging the adequacy of the drought surcharges.

2) **Revenues for the District** – A drought surcharge has been added to the existing rates in order to compensate for decreased water usage by customers due to conservation requests and restrictions. Finance staff should analyze how the additional revenue from the "drought rates" balanced-out against the additional costs to the District. The drought revenue should have compensated for the water conserved and covered the additional drought costs.

8.4 Report to the Board

The concluding task in any drought management effort is the final report to the Board, especially summarizing the costs and revenues described above. Because the Board reports directly to the population served by the District, it is important for the Board members to be able to convey to their constituents the successes of the District's drought management. This report may also be released to all District customers, as successful drought management is not possible without customer involvement, cooperation, and support.