

EL DORADO IRRIGATION DISTRICT DROUGHT PREPAREDNESS PLAN

DROUGHT ACTION PLAN

This Drought Action Plan is a summary of drought stages and actions that are described, along with their development, in detail, in the balance of this Drought Preparedness Plan (Plan). This section is meant to be available as a stand-alone resource and reference.

El Dorado Irrigation District (EID) drought stage water supply conditions, objectives, and response actions including water use reduction targets, are summarized in Table 1. The Plan involves an introductory Stage 1 drought response during which all customers are informed of drought and total customer demand reduction is targeted for 15 percent. At Stage 2, water use decisions initially continue to be entrusted to the customer as long as the overall water use reduction goal of up to 30 percent is met; this is a voluntary/honor system approach. If this voluntary phase of Stage 2 fails, then a Stage 2 mandatory phase is initiated. In Stage 3, a strict allotment approach is implemented with a stiff penalty rate and a total demand reduction goal of up to 50 percent. Each of these stages and actions are further described in this section.

Table 1. Drought Preparedness Plan Summary			
Water supply conditions	Drought stage	Objective	Response actions
Normal 0% Total Supply Reduction	Drought Stage Zero - Ongoing Conservation. Water waste prohibition in effect.	Public awareness	Normal actions
Slightly Restricted Water Supplies (below normal) Up to 15% Total Supply Reduction	Drought Stage 1 – Introductory Stage. Voluntary reductions in use	Initiate public awareness of predicted water shortage and encourage conservation	Encourage voluntary measures to decrease “normal” demand up to 15%
Moderately Restricted Water Supplies Up to 30% Total Supply Reduction	Drought Stage 2 – Voluntary Phase for water use reductions and potential subsequent Mandatory Phase with restrictions on use.	Increase public understanding of worsening water supply conditions, encourage voluntary conservation measures, and enforce some mandatory conservation measures	Encourage some voluntary measures and enforce mandatory measures and implement water rationing to decrease “normal” demand up to 30% Drought surcharge enacted (potential in-house trigger and board action)
Severely Restricted Water Supplies Up to 50% Total Supply Reduction	Drought Stage 3 – Mandatory restrictions (severe prohibitions) on use	Ensure that water use is limited to health and safety purposes	Enforce extensive restrictions on water use and implement water rationing to decrease demand up to 50% of “normal” demand

Ongoing Drought Preparedness Plan Implementation Actions

Ongoing Plan implementation actions will be implemented both during periods of non-drought and drought. These activities can be characterized as proactive actions that prepare for drought through monitoring, public outreach, and resource management practices.

Policy and Regulation

1. Review and update Plan every 5 years or as needed based on new supply, operational changes, or change in expected water demand.
2. Enforce water waste prohibition.
3. Continue conservation policies, including water-efficient plumbing retrofits.
4. Continue and advance Irrigation Management System (IMS) program.
5. Review and refine rate stabilization policy relating to drought impacts every 5 years.
6. Understand and comply with legal and regulatory requirements for drought management.
7. Suggest Domestic Irrigation customers have a water conservation plan on file with EID and update this plan every 5 years.
8. Suggest Agricultural Metered Irrigation (AMI) customers not participating in the IMS program to have a water conservation plan on file with EID and update this plan every 5 years.
9. Small Farms must submit a water conservation plan during the account certification to qualify for the Small Farm rate. The plan must be updated every 3 years during the re-certification process.

Monitoring

1. Run Drought Status Supply Remaining Index (SRI) model quarterly to assess drought status with updated demand and supply information. SRI Trigger Plan sequence shown in Figure 1. El Niño Southern Oscillation (ENSO) climate cycle episode is a secondary indicator.
2. Monitor system demands for consistency with SRI model assumptions.

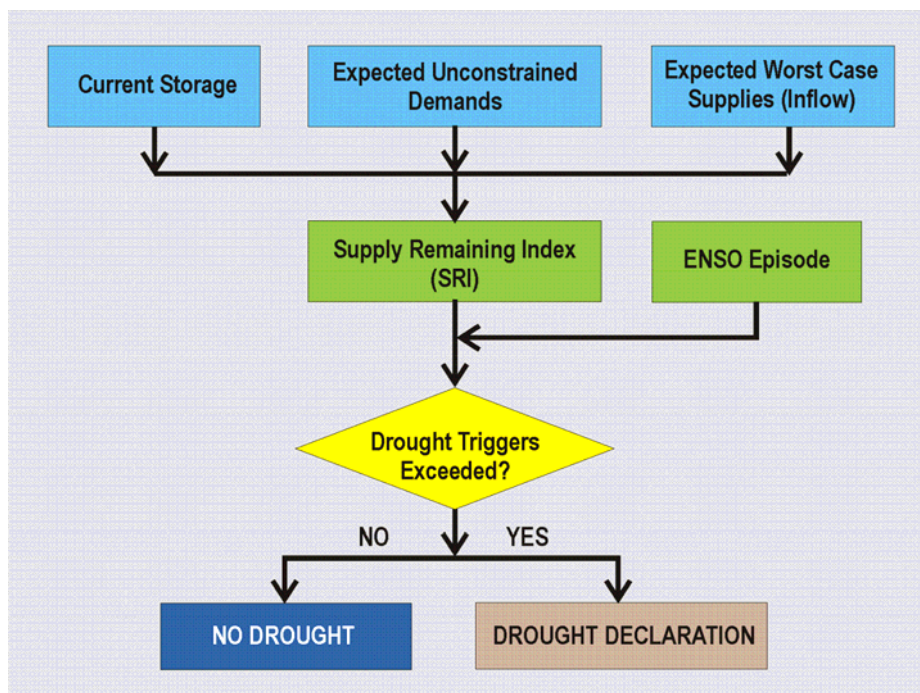


Figure 1. Drought Status SRI Trigger Plan Flow Chart

The EID SRI trigger plan is summarized in Table 2 and described below.

Table 2. SRI Trigger Plan Summary Table				
Month	ENSO	SRI	Last month's stage	This month's stage
May	Any	<0.6	0	1
		<=0.75	1,2,3	Last month's stage
June - Sept	Any	<0.10	2	3
	<0.35*	<0.12	0,1,2	2
	<0.35*	<0.12	3	3
Any	Any	>0.75	0,1,2,3	0

* the ENSO average of three previous months must be less than 0.35

- If it's May and SRI is less than 0.6 go to Stage 1 (if in Stage 0); if already in drought and SRI is less than 0.75, stay at the stage from the month before.
- In June through September, if SRI is less than 0.10 and the previous month was in a Stage 2 drought, then go to Stage 3.
- In June through September, if the SRI is less than 0.12 and the average previous three months ENSO is less than 0.35, then go to Stage 2; if the previous month was in Stage 3 drought, stay in Stage 3.
- In all months if SRI is greater than 0.75, there is no drought curtailment. This either continues a period of no drought or ends the drought response of the month before.
- In all other cases, the drought stage this month is the same as the previous month.

Public Outreach

1. Develop and maintain drought awareness and public education materials, tools, and protocol.
2. Continue water efficiency programs including limiting sidewalk washing and car washing without a shutoff nozzle; and fixing leaks within 72 hours.
3. Develop website link for "Drought Stage" information.

Resource Management

1. Maintain interagency coordination annually as shown in Figure 2. Figure 2 depicts the type and frequency of interagency coordination activities that will be pursued by the Drought Interagency Coordination Committee (DICC).
2. Confirm and maintain commitment of Drought Advisory Committee (DAC) members as shown in Figure 3. Figure 3 depicts the suggested interagency organizational structure.
3. Pursue development of potential drought impact avoidance projects.
 - PL101-514 supply
 - Additional water conservation
 - Water loss reduction
 - Groundwater banking
 - White Rock Diversion
 - Sly Park flashboards
 - Alder Creek Reservoir
 - Texas Hill Reservoir
 - Capps Crossing Reservoir
4. Establish and maintain trucking contracts for water hauling (annually).
5. Construct and maintain tap manifolds for emergency water distribution through hydrants.
6. Establish procedure by which residents on wells within EID service area apply for emergency relief.

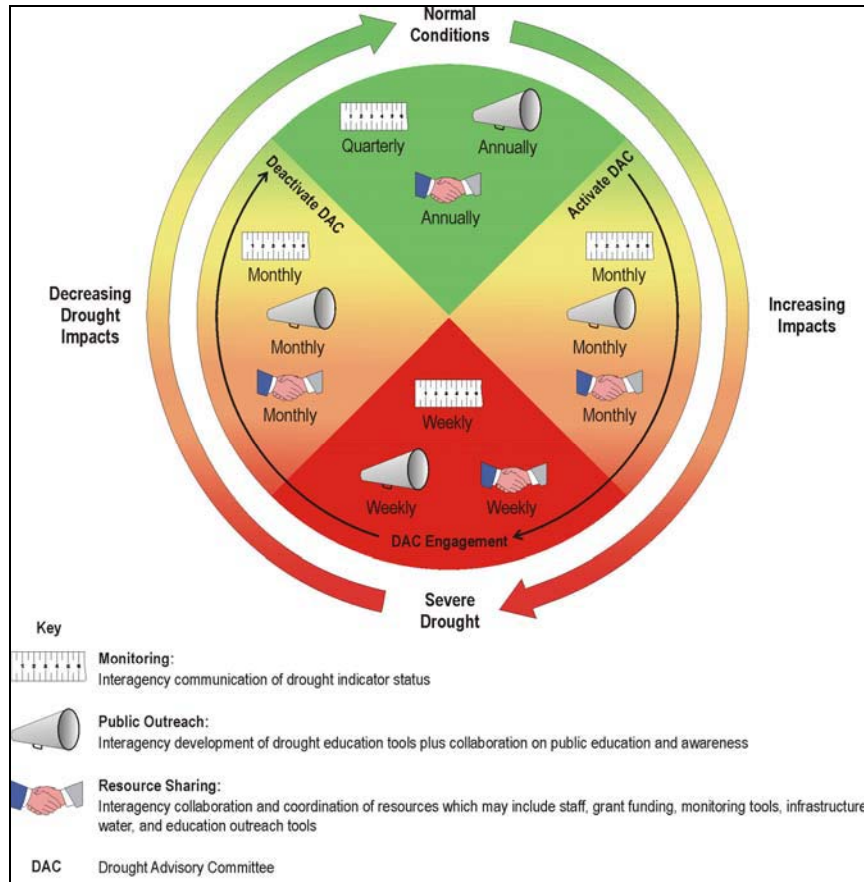


Figure 2. Drought Interagency Coordination Committee (DICC) Activities

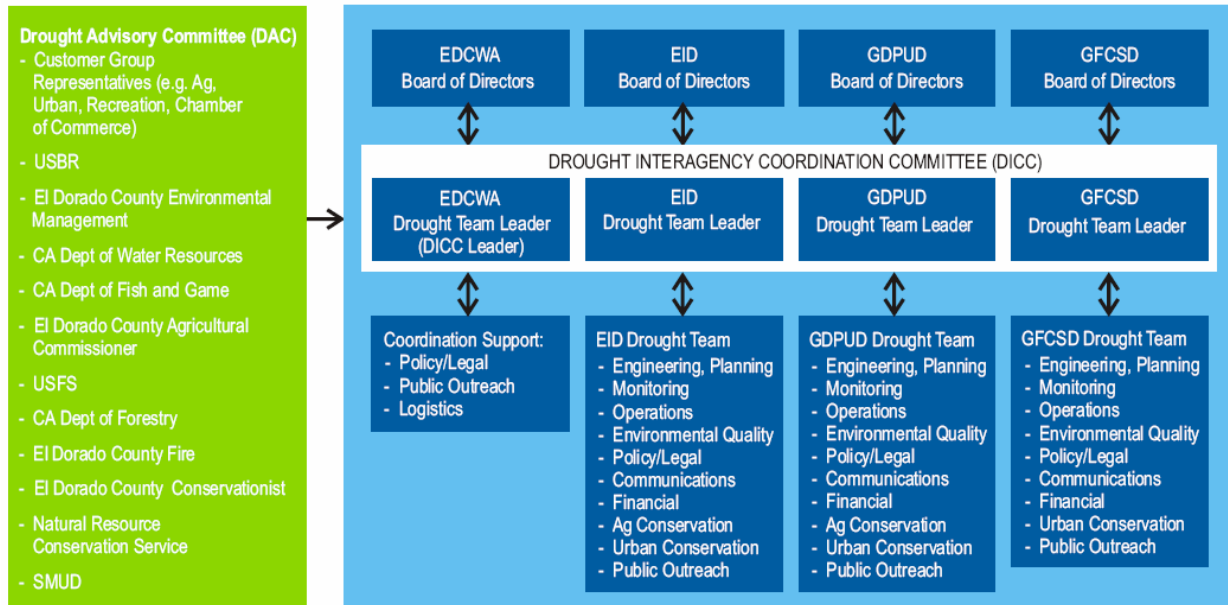


Figure 3. Drought Interagency Organization Structure

Drought Stage 1 Actions

Drought Stage 1 actions are intended to initiate public awareness of water shortages and encourage conservation. Stage 1 actions target up to 15 percent demand reduction through implementation of voluntary measures.

Policy and Regulation

1. Implement Stage 1 water shortage response measures. Customers are suggested to:
 - Apply irrigation water only during the evening and early morning hours (8 PM to 6 AM) to reduce evaporation losses.
 - Inspect all irrigation systems, repair leaks, and adjust spray heads to provide optimum coverage and eliminate avoidable over-spray.
 - Change the minutes of run-time for irrigation valves consistent with fluctuations in weather as determined by evapotranspiration (ET) data, obtained from EID or ET controllers.
 - Reduce minutes of run-time for each irrigation valve if water run-off (gutter flooding) is occurring.
 - Utilize water conservation incentive, rebate, and giveaway programs to replace high water-using plumbing fixtures and appliances with water efficient models.
 - Take advantage of the free information available from EID on how to use water efficiently, read a water meter, repair leaks, and irrigate efficiently.
 - Do not refill a swimming pool that had been drained.
 - Fix leaks.
 - Wash vehicles from a bucket. Use a hose equipped with a shutoff nozzle for a quick rinse (commercial car washes exempted).
2. Drought Team Leader provides monthly updates on drought status to EID management.
3. EID management provides monthly updates to Board.

Monitoring

1. Assess current drought stage monthly using Drought Status SRI Model with current demand and supply information.
2. Consider potential future hydrologic conditions in Drought Status SRI Model.
3. Monitor water demand monthly to assess water savings accomplished.

Public Outreach

1. Initiate community-oriented drought awareness with focus on community water use reduction goals and range of voluntary steps to accomplish savings.
2. Reacquaint customers with EID's Water Waste Prohibitions and introduce Stage 1 recommended water shortage response measures.
3. Provide monthly updates to public on current drought stage using the Drought Status SRI Model dashboard.
4. Provide monthly updates to public on community demand response status.

Resource Management

1. Monthly DICC meetings.
2. Confirm commitment by DAC members.

Drought Stage 2 Actions

Drought Stage 2 action items are intended to increase public understanding of worsening water supply conditions, encourage community-oriented voluntary conservation measures, enforce some mandatory conservation measures, and implement water use reduction measures to decrease “normal” demand by up to 30 percent. If the Stage 2 Voluntary Phase approach is not effective or becomes unfair to too many customers, then the Stage 2 Mandatory Phase will be implemented. Stage 2 activities include a continuation of activities described previously under Stage 1 and Ongoing actions. The achievement of the water use reduction goal is measured by overall performance of the entire customer population, based on EID production meters. It is important to note that user category demand reduction goals are not by individual customer, but are the goal for the customer category.

Policy and Regulation

1. Implement Stage 2 water shortage response measures, including a continuation of Stage 1 activities. The following are recommendations/restrictions to potable water customers.

- Indoor residential use (excluding irrigation only use) is targeted to approximately 70 percent of the amount used when no water use reduction is required.
- Any “irrigation only use” is targeted to approximately 55 percent of the amount used in the base year. (Higher demand reductions here to save water use in other areas that would force job cuts).
- Commercial, industrial and institutional use is targeted to approximately 80 percent of the amount used by the customer in base year.
- Restricted use of water from a fire hydrant - use limited to fighting fires, human consumption (hauling from designated sites allowed by persons whose wells have gone dry with EID Board approval), stock water, essential water quality flushing, and toxic clean-up purposes.
- No watering of any existing turf grass, ornamental plants, garden, landscaped area, tree, shrub or other plant except by hand held hose or container, drip irrigation system, or other approved EID conservation practice.
- No watering of new turf grass or replacement turf grass.
- No initial filling of any swimming pool.
- No automatic serving of drinking water at dining establishments except with patron request.

Restrictions for agricultural customers are as follows:

- Domestic Irrigation and AMI customers not participating in the IMS program, but have a water conservation plan on file with EID, will reduce water use by up to 15% of the base year or face financial penalty.
 - Domestic Irrigation and AMI customers not participating in the IMS program and do not have a water conservation plan on file with EID will reduce water use by up to 25% of the base year or face financial penalty.
 - Small Farm customers will reduce water use by up to 15% of the base year or face financial penalty.
 - New commercial crop plantings that are already in the ground will receive the full amount of water needed to ensure the survival of the crop.
 - New crops not already in the ground will not be irrigated using EID supplied water.
2. Drought Team Leader provides weekly updates on drought status to EID management.
3. EID management provides at least monthly updates to Board.

4. EID management provides the Board of Directors with an assessment of the need to enact a drought surcharge.

Monitoring

1. Assess current drought stage twice monthly using Drought Status SRI Model with current demand and supply information.
2. Consider potential future hydrologic conditions in Drought Status SRI Model.
3. Monitor water demand weekly to assess water savings accomplished under voluntary measuring.

Public Outreach

1. Accelerate community-oriented drought awareness with focus on community water use reduction goal and range of voluntary steps and mandatory requirements to accomplish savings.
2. Reinforce with customers the EID Water Waste Prohibitions and Stage 2 voluntary and mandatory recommended water shortage response measures.
3. Customers are informed that individual meter records will not be audited or fees levied if overall water use reduction goal is achieved.
4. Customers who can conserve more are strongly encouraged to help customers who would incur economic hardship if they met the water use reduction goal.
5. Provide weekly updates to public on current drought stage.
6. Provide weekly updates to public on community demand response status.

Resource Management

1. Weekly DICC meetings to coordinate on monitoring, public outreach, current status, and opportunities for resource sharing.
2. Enact participation by DAC members.

Drought Stage 3 Actions

The objective of Drought Stage 3 actions are to reduce water demand by up to 50 percent through effective and consistent public outreach, enforce extensive restrictions on 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.

Policy and Regulation

1. Implement Stage 3 water shortage response measures which includes enforcing Stage 1 and Stage 2 recommended water shortage response measures. The following are restrictions to potable water customers.
 - Residential meters serving single family detached homes are granted a 68 gallons per day per person allotment.
 - Residential meters, serving multiple units are granted up to 50 percent of the amount used by the customer during the corresponding billing period in the base year.
 - Irrigation only meters: 35 percent of the amount used by the customer during the corresponding billing period in the base year.
 - Meters serving any non-residential use: 60 percent of the amount used by the customer during the corresponding billing period in the base year. (Note: Vital healthcare and public safety use is set at 65 percent).

Agricultural customers will be affected as follows:

- Domestic Irrigation and AMI customers not participating in the IMS program, but who have a water conservation plan on file with EID, will reduce water use by 30% of the base year or face financial penalty.
 - Domestic Irrigation and AMI customers not participating in the IMS program and who do not have a water conservation plan on file with EID will reduce water use by 50% of the base year or face financial penalty.
 - Small Farm customers will reduce water use by 30% of the base year or face financial penalty.
 - IMS Agricultural customers must utilize IMS program or surcharge enacted.
2. Drought Team Leader provides weekly updates on drought status to EID management.
 3. EID management provides the Board of Directors with an assessment of the need to enact a drought surcharge.
 4. EID management to provide recommendation to the Board of Directors on increasing the frequency on residential meter reading to monthly for accelerated assessment of demand reduction.

Monitoring

1. Assess current drought stage monthly using Drought Status SRI Model with current demand and supply information.
2. Consider potential future hydrologic conditions in Drought Status SRI Model.
3. Monitor water demand weekly to assess water savings accomplished.

Public Outreach

1. Accelerate community-oriented drought awareness with focus on community water use reduction goals, range of voluntary steps, and mandatory requirements to accomplish savings.
2. Reinforce with customers the EID Water Waste Prohibitions and Stage 3 mandatory water shortage response measures.
3. Provide weekly updates to public on current drought stage.
4. Provide weekly updates to public on community demand response status.
5. Continue with procedure for customer reporting of water waste.

Resource Management

1. Weekly DICC meetings to coordinate on monitoring, public outreach, current status, and opportunities for resource sharing.
2. Continue participation by DAC members.
3. Coordinate and schedule water hauling as needed.
4. Implement and monitor tap manifolds for emergency water distribution through hydrants as needed.