

Drought Annex

State of Texas Emergency Management Plan

April 2014

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Introduction

This document is an annex to the *State of Texas Emergency Management Plan*, which responds to state and federal laws, policies, doctrine and guidelines as described below.

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In responding to federal emergency response doctrine and, specifically, the National Response Framework (NRF), the State of Texas Emergency Management Plan (State Plan) takes into account the needs of the whole community of citizens likely to be affected by an incident or event that requires a state-level coordinated response.

The State Plan complies with Homeland Security Presidential Directive 5 (HSPD-5) "Management of Domestic Incidents" and Presidential Policy Directive 8 (PPD-8) "National Preparedness," the "National Preparedness Goal," and Texas Executive Order RP40, which mandates the adoption of the National Incident Management System (NIMS) as the "declared State standard for incident management."

The State Plan is composed of a Basic Plan, functional annexes, and hazard annexes. The State Plan responds to **Texas Government Code, Section 418.042**, which directs the Texas Division of Emergency Management (TDEM) to "prepare and keep current a comprehensive state emergency plan." The plan outlines the "coordination of federal, state, and local emergency management activities."

Further, this annex sets forth cross-agency coordination responsibilities as agreed to by Emergency Management Council (EMC) agency representatives in response to their mandate, **Texas Government Code, Section 418.013**, to "assist the division [TDEM] in identifying, mobilizing, and deploying state resources to respond to major emergencies and disasters throughout the state." The State Plan is designed to integrate with other state agency or entity plans and annexes when they are included as subordinate appendices or attachments to the State Plan.

All sections of the plan contain links to related information. For an explanation of the acronyms, abbreviations, and terms in this document, refer to the State of Texas Acronyms and Terms (STAT) Book, which can be found online at [[unformatted url](#)].

This document is intended to provide guidance and is not prescriptive or comprehensive. Use judgment and discretion to determine the most appropriate actions at the time of an incident.

Overview and Purpose

Successful drought response operations assist with the rapid restoration of essential functions while protecting residents from drought impacts. This planning document defines a standardized statewide approach to response operations for drought.

Goal

Establish a framework for the state of Texas to conduct an effective, coordinated and timely response to drought that minimizes potential negative impacts.

Objectives

- Define the drought hazard and provide an overview of drought characteristics, types, definitions, stages of severity and impacts.
- Identify methods of data collection and analysis to help with early drought detection and determine drought severity.
- Define drought indicators that help determine when statewide drought response activities should begin or end and take appropriate actions.
- Define decision making, information sharing and coordination strategies and explain how local, state, federal and private entities coordinate when responding to drought.
- Provide assignments of responsibilities for key stakeholders.

Audience

- State Drought Preparedness Council and committee members
- State Emergency Management Council representatives
- Personnel assigned to the State Operations Center (SOC)
- Emergency management field personnel
- Decision makers serving drought prone areas
- Public/private water suppliers and utility providers
- Critical infrastructure, private sector partners, and non-governmental organizations

Planning Assumptions

- A jurisdiction may request additional assistance from Disaster District Committees (DDC) when the jurisdiction anticipates a depletion of resources, identifies a gap in resources or exhausts resources.
- If resources or information cannot be provided by the Disaster District Committee (DDC), the DDC Chairperson will send a State of Texas Assistance Request (STAR) to the State Operations Center (SOC) for resolution.
- Assistance may be sought from other states and the federal government.
- Early drought detection and ongoing coordination are critically important in the monitoring and assessment and response and recovery phases and may lessen drought impacts.
- Certain water systems are required by Title 30 of the Texas Administrative Code Chapter 288.30 to have drought contingency plans and water conservation plans.

- Preparedness, response, recovery and mitigation operations may occur simultaneously during a drought.
- Public and private water systems may or may not enforce the contingency stages of their drought plans during times of drought.
- Local governments and water suppliers are responsible for managing their water systems to ensure an adequate and safe water supply.
- Drought may be widespread and affect agriculture, public health and safety, ecological systems, municipal water supplies and critical infrastructure such as transportation systems, the state power grid and chemical plants and refineries.
- Hospitals, assisted living centers and other medical facilities have plans to maintain mandatory minimum potable water supplies in emergency situations.
- Severe and prolonged drought conditions may affect the capability of utility providers to ensure a steady potable water supply and reliable power generation.
- Drought may cause low reservoir levels, which can affect the ability of water suppliers to access water and treat drinking water to acceptable standards.
- Drought monitoring and assessment data is evaluated at various levels, including county and watershed levels.
- Water resources may be stressed during drought periods by a number of factors including an increase in population, unseasonably low precipitation, evaporation and groundwater extraction.
- The state may not provide bulk water to a water system during a prolonged outage due to drought.

Defining the Hazard

This section provides an overview of drought characteristics, definitions, timelines and impacts.

Drought hazards include depleted water supplies, wildfires and cascading impacts to critical infrastructure and key resources (CIKR). Impacts of these hazards vary greatly, depending on a drought’s duration, intensity and geographic area. Although drought is slow-moving, it has proven to be extremely costly and may stress the response capabilities of affected local jurisdictions.

Drought is not considered a distinct incident and therefore does not linearly follow the traditional four phases of emergency management, namely mitigation, preparedness, response and recovery. Many drought response operations coincide with what have traditionally been classified as mitigation or long term recovery activities, such as establishing secondary water supplies, conservation efforts or drought assistance projects. This makes drought extremely difficult to respond to, as drought impacts may necessitate long-term commodity distribution and mass care measures. Because droughts may linger for years at a time, it is imperative that drought response be comprehensive and proactive to avoid public water systems running out of water.



Figure 1 Lake EV Spence 2011 courtesy of TPWD

Types of Drought

Drought is typically defined as a persistent and abnormal moisture deficiency having adverse impacts on vegetation, animals and the human population. There are several definitions and types of drought¹ as listed in the table below.

| Drought Type | Description |
|--|--|
| Meteorological and Climatologic | Meteorological drought occurs when there is abnormally low precipitation over a specified period of time. The standards for drought conditions are based on regional climatology. Normally, meteorological measurements are the first indicators of drought. |
| Socioeconomic | Socioeconomic drought occurs when the demand for an economic good – such as water, food grains, fish and energy – exceeds supply due to a weather-related water supply shortfall. |

¹ For more information, refer to [Types of Drought](#) on the National Drought Mitigation Center.

| Drought Type | Description |
|---------------------|--|
| Agricultural | Agricultural drought occurs when there is inadequate precipitation or soil moisture to sustain crops, livestock and forage production systems. The water deficit results in significant damage and economic loss to plant or animal agriculture. |
| Hydrological | Hydrological drought occurs when there are deficiencies in surface and subsurface water supplies, as measured by stream flow, lake, reservoir, snowpack and groundwater levels. |

Drought Stages

There are five stages of drought, which incorporate all the types of drought previously mentioned. Drought stages in Texas correlate with the severity levels of the United States Drought Monitor. These are summarized below.

| Stage | Impacts |
|--|---|
| D0 – Normal Conditions to Abnormally Dry | <ul style="list-style-type: none"> ▪ Emerging drought conditions ▪ Short-term dryness ▪ Planting and growing slows in pastures ▪ Fire risk average or above average; high rangeland fire danger ▪ Lingering water deficits ▪ Pastures or crops not fully recovered when emerging from drought conditions ▪ Official drought not declared |
| D1 – Agricultural or Moderate Drought | <ul style="list-style-type: none"> ▪ Some damage to crops ▪ Low levels of pastures, streams, reservoirs or wells ▪ High fire risk; burn bans may be in effect ▪ Some developing or imminent water shortages developing ▪ Drought preparedness council declares drought |
| D2 – Severe Drought | <ul style="list-style-type: none"> ▪ Crop or pasture losses likely ▪ Fire risk very high; burn band in effect ▪ Water systems reporting to TCEQ of potentially having less than 180 days of potable water remaining ▪ Mandatory and/or voluntary water restrictions imposed ▪ Threats to CIKR include energy and agricultural sectors ▪ Emergency water threshold met ▪ Drought disaster may or may not be declared by the governor ▪ USDA Secretarial drought disaster declarations in effect for farmers and ranchers |
| D3 – Extreme Drought Emergency Conditions | <ul style="list-style-type: none"> ▪ Major crop/pasture losses ▪ Extreme fire danger; burn bans in effect ▪ Multiple systems on 180 day high priority list ▪ Mandatory and/or voluntary water restrictions imposed ▪ Significant threat to CIKR sectors/potential national impacts ▪ Drought disaster is declared by proclamation of the governor |

| Stage | Impacts |
|-------|---------|
|-------|---------|

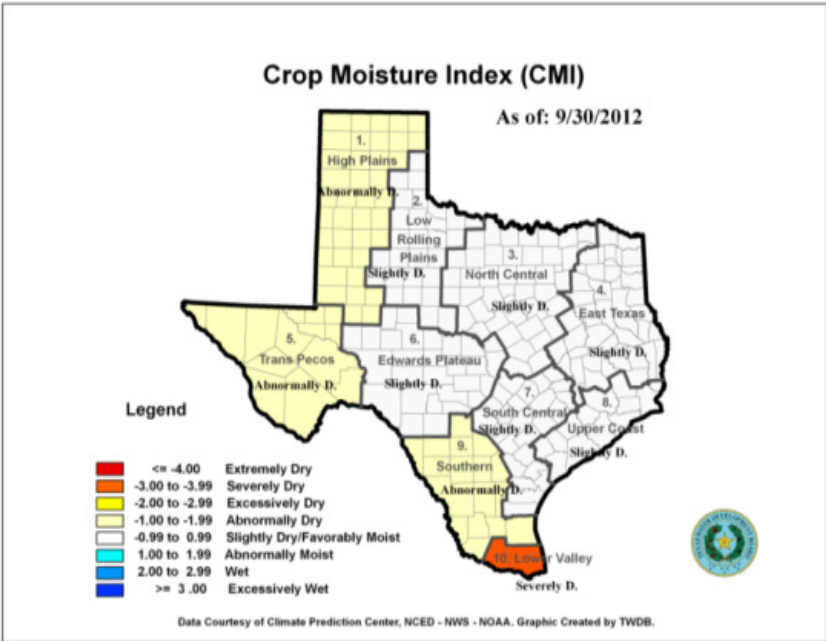
| | |
|--|--|
| <p>D4 – Exceptional Drought Disaster Conditions</p> | <ul style="list-style-type: none"> ▪ Devastating widespread crop/pasture losses ▪ Exceptional fire risk; burn bans in effect ▪ Continued water restrictions imposed ▪ Multiple systems on 180 high priority list ▪ Extraordinary shortages of water in reservoirs, groundwater storage, streams and wells, creating water supply emergencies and a threat to public health and safety ▪ CIKR threats are present with cascading nationwide implications ▪ Drought disaster proclamation ongoing |
|--|--|

Drought Indices

There are six indices that decision-makers use to assess the impact of a drought. Expert judgment and data analysis are required to fully understand each index. Each index is summarized below, followed by a table that compares the indices, identifies the severity indices levels and provides a general framework. The indices by themselves do not initiate response actions.²

Crop Moisture Index

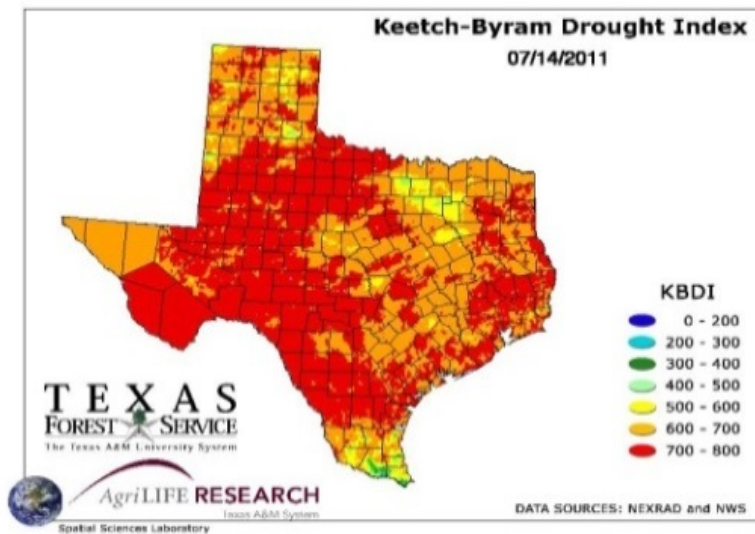
The Crop Moisture Index (CMI) is used to monitor week-to-week crop conditions across major crop-producing regions. The CMI reflects moisture supply and is based on a climate division’s weekly mean temperature, weekly total precipitation, and the previous week’s CMI. The CMI responds rapidly to changing conditions, and CMI maps can be used to compare moisture conditions at different locations. The CMI reflects moisture supply and is not used to assess long-term droughts. An example is shown on the right.



² For more information, all [Drought Indices](#) can be found on Water Data for Texas website.

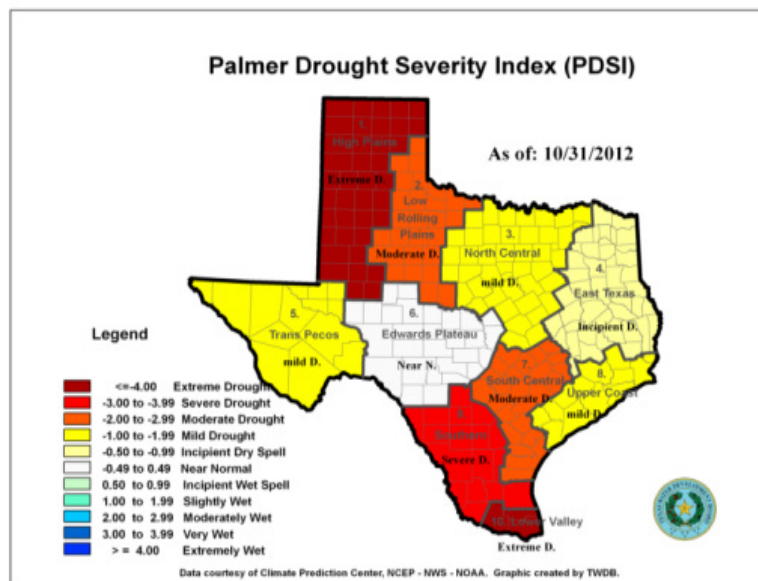
Keetch-Byram Drought Index

The Keetch-Byram Drought Index (KBDI) is used to determine forest fire potential. The index is based on daily water balance, temperature, precipitation and soil moisture. The index is interpolated manually by experts at TFS for counties across the state. An example is shown on the left.



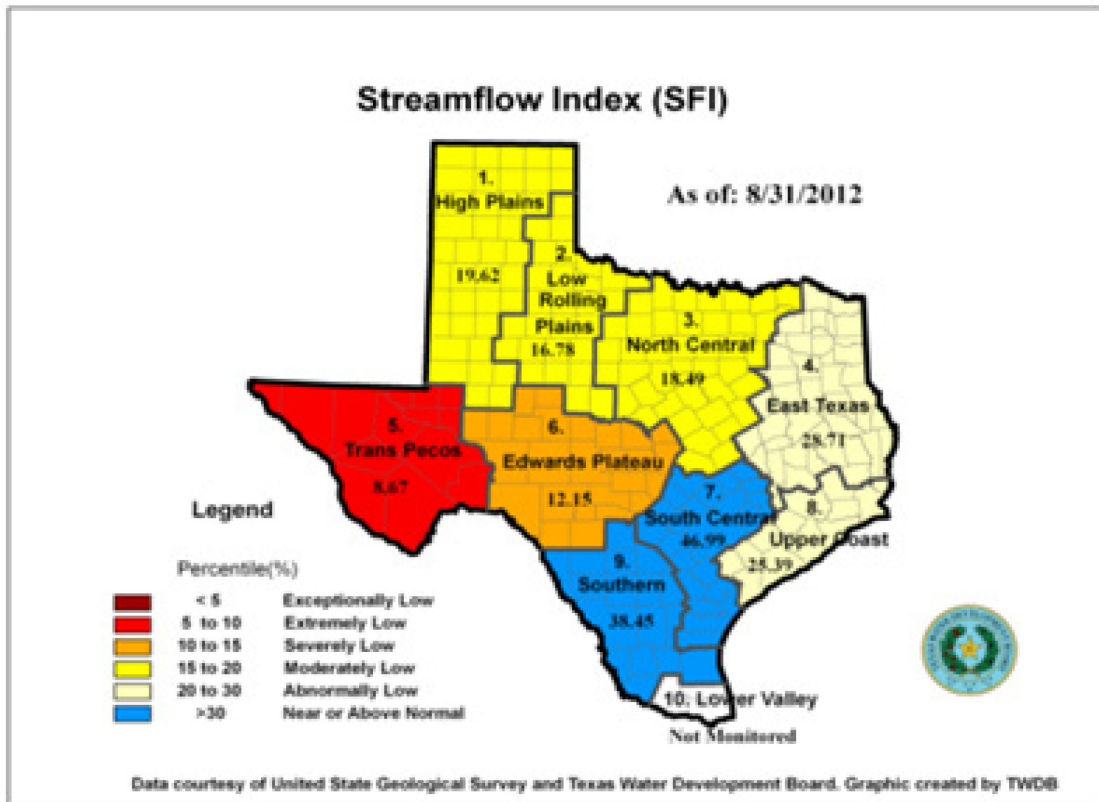
Palmer Drought Severity Index

The Palmer Drought Severity Index (PDSI) is primarily used to reflect long-term drought, most accurately for non-irrigated cropland. The PSDI incorporates soil moisture and uses temperature precipitation data to calculate water supply and demand. The PDSI is calculated weekly and monthly. An example is shown on the left.



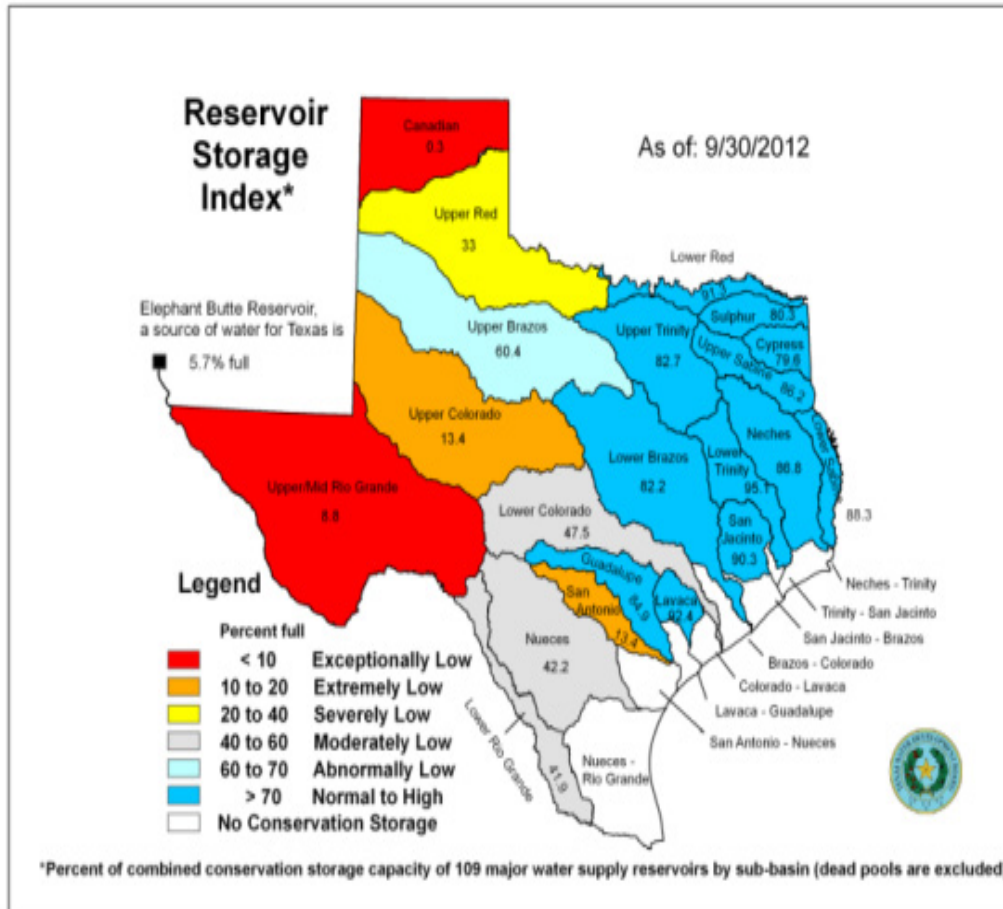
Reservoir Storage Index

The Reservoir Storage Index (RSI) is used to display how much combined water is available in the state's major water supply reservoirs divided by river basins. The RSI compares current data from active United State Geological Survey (USGS) and United States Army Corps of Engineers (USACE) gauges at 109 major water supply reservoirs or lakes with their normal storage or "conservation storage capacity", e.g. the volume between dead pool elevation and the conservation pool elevation. The RSI is expressed as a percentage. An example is on the right.



Streamflow Index

The stream flow Index (SFI) is also used to measure drought conditions and water quality and helps with calculating impact estimates. The SFI averages daily gauging and stream flow data collected from the 29 stream stations across the state. An example of the calculated SFI is shown on the left.³

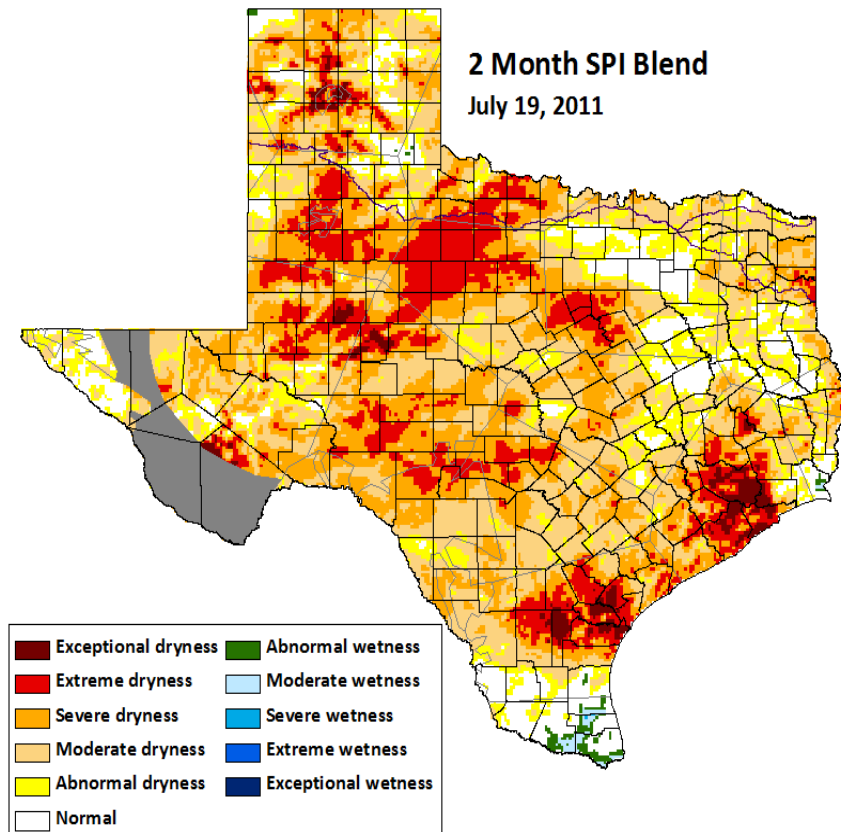


³ For more information on how the SFI is calculated, refer to the [National Streamflow Information Program](#) on the USGS website.

Standard Precipitation Index

The Standard Precipitation Index (SPI) is used to determine whether drought exists. It measures the precipitation departure from "normal" over multiple time periods displaying short versus long term drought trends.

Drought exists when the SPI is negative and is considered "intense" when the SPI is -1.0 or lower. Drought ends when the SPI becomes positive. Each drought therefore has a duration defined by its beginning and end, and intensity for each month that the drought continues. An example of a 2 month short term SPI blend is shown above.



Quantified Indices

The table, below, shows the six drought indices' range within the corresponding drought severity category. These indices are intended to provide a general framework and help define triggered response actions. The Drought Preparedness Council analyzes and interprets this information on at least a monthly to assist with timely decision-making.

Normal to No Drought

| Index | Measurement |
|-------|-------------------------------|
| CMI | 2 to 3+ (Excessively Wet/Wet) |

| Index | Measurement |
|-------------|--|
| KBDI | 0-300 units |
| PDSI | -0.99 to >4.00 |
| RSI | > = 70 (Normal to High) |
| SFI | > = 30 (Normal to High) |
| SPI | -0.50 to +2.0 and above (Near Normal to Exceptionally Moist) |

D0 – Abnormally Dry

| Index | Measurement |
|-------------|---|
| CMI | -0.99 to 1.99 (Slightly Dry/Favorably Moist/Abnormally Moist) |
| KBDI | 300-400 units |
| PDSI | -0.50 to 0.49 (Incipient Dry Spell/Near Normal) |
| RSI | 60-70% (Abnormally Low) |
| SFI | 20-30% (Abnormally Low) |
| SPI | -0.79 to -.99 (Abnormally Dry) |

D1 – Moderate Drought

| Index | Measurement |
|-------------|---------------------------------|
| CMI | -1.0 to -1.99 (Abnormally Dry) |
| KBDI | 400-500 units |
| PDSI | -1.0 to -1.99 (Mild Drought) |
| RSI | 40-60% (Moderately Low) |
| SFI | 15-20% (Moderately Low) |
| SPI | -1.29 to -0.80 (Moderately Dry) |

D2 – Severe Drought

| Index | Measurement |
|-------------|-----------------------------------|
| CMI | -2.0 to -2.99 (Excessively Dry) |
| KBDI | 500-600 units |
| PDSI | -2.00 to -2.99 (Moderate Drought) |
| RSI | 20-40% (Severely Low) |
| SFI | 10-15% (Severely Low) |
| SPI | -1.59 to -1.30 (Severely Dry) |

D3 – Extreme Drought

| Index | Measurement |
|-------------|--------------------------------|
| CMI | -3.0 to -3.99 (Severely Dry) |
| KBDI | 600-700 units |
| PDSI | -3.0 to -3.99 (Severe Drought) |
| RSI | 10-20% (Extremely Low) |
| SFI | 5-10% (Extremely Low) |
| SPI | -1.99 to -1.60 (Extremely Dry) |

D4 – Exceptional Drought

| Index | Measurement |
|-------------|------------------------------------|
| CMI | < = -4.0 (Extremely Dry) |
| KBDI | 700-800 units |
| PDSI | < = -4.0 (Extreme Drought) |
| RSI | 0-10% (Exceptionally Low) |
| SFI | < 5% (Exceptionally Low) |
| SPI | -2.0 and below (Exceptionally Dry) |

Other Products

In addition to the six indices, the DPC considers the U.S. Drought Monitor, U.S. Seasonal Drought Outlook Map, the AgriLife agricultural index and other products from the National Oceanic and Atmospheric Administration Climate Prediction Center. Together these products provide current drought data, short and medium term climate forecast projections and acute impacts to the agricultural industry.

U.S. Drought Monitor

The U.S. Drought Monitor illustrates how local, regional, and national experts monitor current drought conditions. It is based upon multiple drought indicators, including various indices, outlooks, field reports, expert opinion and news accounts. The Office of the State Climatologist holds a weekly meeting with experts from across the state to gather the most comprehensive and accurate reflection of statewide drought conditions for publication in the U.S. Drought Monitor.

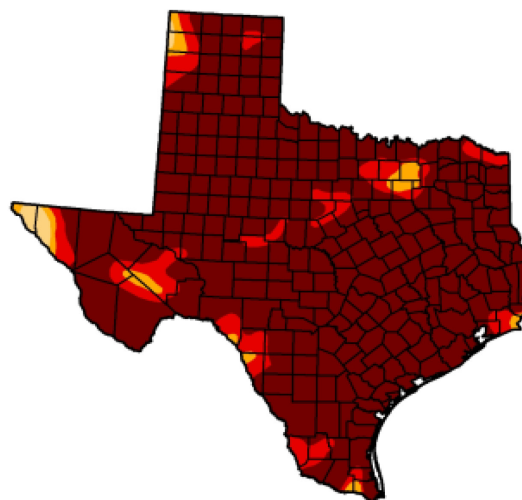
The U.S. Drought Monitor summary map identifies general drought areas, labeling droughts by intensity.⁴

U.S. Drought Monitor

Texas

October 4, 2011
Valid 7 a.m. EST

| | Drought Conditions (Percent Area) | | | | | |
|---|-----------------------------------|--------|--------|-------|-------|-------|
| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
| Current | 0.00 | 100.00 | 100.00 | 99.16 | 96.99 | 87.99 |
| Last Week (09/27/2011 map) | 0.00 | 100.00 | 100.00 | 99.16 | 96.65 | 85.75 |
| 3 Months Ago (07/05/2011 map) | 2.41 | 97.59 | 95.73 | 94.39 | 90.21 | 71.30 |
| Start of Calendar Year (12/28/2010 map) | 7.89 | 92.11 | 69.43 | 37.46 | 9.59 | 0.00 |
| Start of Water Year (09/27/2011 map) | 0.00 | 100.00 | 100.00 | 99.16 | 96.65 | 85.75 |
| One Year Ago (09/28/2010 map) | 75.57 | 24.43 | 2.43 | 0.99 | 0.00 | 0.00 |



Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



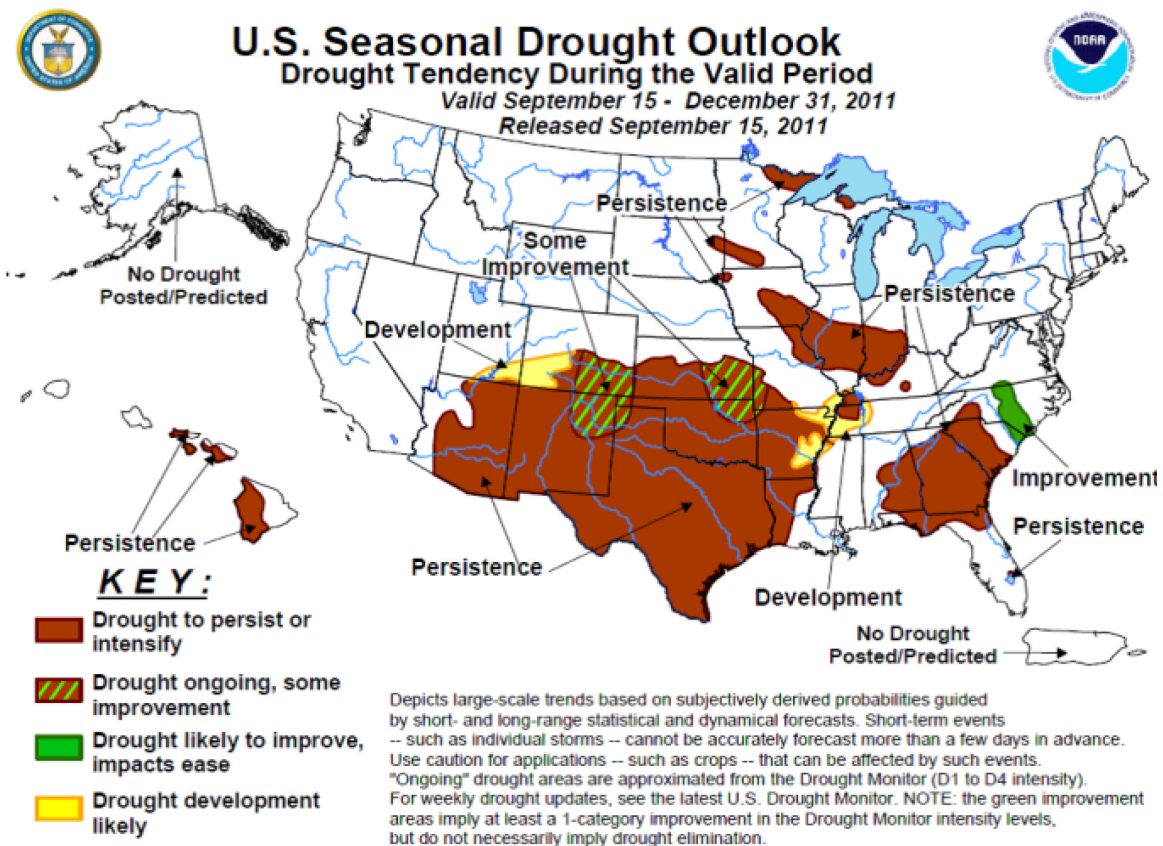
Released Thursday, October 6, 2011

⁴ For more information, refer to the National Weather Service [Climate Prediction Center](http://www.cpc.ncep.noaa.gov) on the NOAA website.

U.S. Seasonal Drought Outlook Map

The U.S. Seasonal Drought Outlook shows forecasted probabilities for ongoing drought in areas depicted in the U.S. Drought Monitor, as well as indicating where new drought may develop. It shows general, large-scale trends.

The Seasonal Drought Outlook takes into consideration current drought conditions, precipitation forecasts and projections, soil moisture models, seasonal climate anomalies such as the El Niño-Southern Oscillation and other models.



Texas A&M AgriLife Extension Service Agriculture Index

An agricultural index is developed and maintained by Texas A&M AgriLife Extension Service (AgriLife), in collaboration with United States Department of Agriculture National Agricultural Statistics Service (USDA-NASS), to assess current agricultural conditions. Representatives from AgriLife analyze and report on significant agricultural impacts across the state, including crops, livestock and pasture and range conditions. This index weighs in with the six drought indices listed above and a monthly report is submitted to the DPC for analysis.⁵

⁵ For more information, refer to the [State Drought Preparedness Council](#) on Texas Department of Public Safety website.

Impacts

Drought impacts the state in numerous ways, affecting the economy, population and ecosystems. Different parts of the state may experience different drought severity levels at different times. The various impacts of drought are summarized below.

Depleted Water Supply

One of drought's most harmful effects is the depletion of available potable water supplies for human consumption. High temperatures, extreme evaporation rates, and lack of replenishing rainfall can rapidly deplete reservoirs and affect groundwater aquifers. When water levels in a reservoir fall too low it can become impossible to treat water to acceptable standards due to bacteria, high salinity, and other total dissolved solids, making the remaining water unusable for human consumption. Additionally, low water levels and poor stream flow threaten wildlife and delicate ecological systems.



Figure 2 Toledo Bend Reservoir after 2011 drought courtesy of TCEQ.

As primary water sources become unavailable, water suppliers may need to turn to groundwater to supplement their water resources. However, groundwater in some areas may require substantial and often expensive treatment such as reverse osmosis, microfiltration or other methods to ensure the water is safe for human consumption. As water levels in aquifers are often not constant, recharge rates and excessive withdrawal from the water table can lead to groundwater resources being unreliable as a long-term secondary source of potable water. Other innovative water technologies are also being explored to extend and augment existing water supplies, such as desalination and water reuse methods.

Wildfires

Extended periods of warm and dry conditions may lead to an environment favorable for wildfires. Wildfires that occur during prolonged drought conditions pose an imminent threat to public health and safety as dead and drying vegetation provide high risk fuels and increased temperatures lead to depleted soil moisture creating prime conditions for more intensely burning and severe wildfires.



Figure 3 Bastrop State Park Fire 2011 courtesy of TPWD.

When the KBDI exceeds 500, Texas A&M Forest Service recommends the imposition of county burn bans. Depleted water supplies may also negatively impact the response capabilities of firefighters to combat wildfires in drought stressed areas.↗

Agriculture

More than 132 million acres in Texas are dedicated to production of agricultural crops, forages or livestock with a farm gate value in excess of \$25 billion. Drought effects on agriculture are often the most acute and the first to develop. Dry vegetation, lack of irrigation water and depleted stock tanks can completely decimate entire crops and herds of livestock. In 2011 alone, Texas has suffered \$7.62 billion dollars in agricultural losses due to drought.⁶ In turn, the long-term effects of agricultural drought adversely affect the state's economy associated industries, communities and consumers in the form of higher commodity prices and possible food shortages.



Figure 4 Corn Crop in Burleson County, TX 2011.

Energy

There can be significant impacts on the energy sector during a drought. Power plants, including nuclear facilities, rely almost entirely on surface water for cooling purposes and may become extremely vulnerable in drought conditions (Stillwell, et al. April 2009). As water becomes unavailable, or when it is available but too hot,

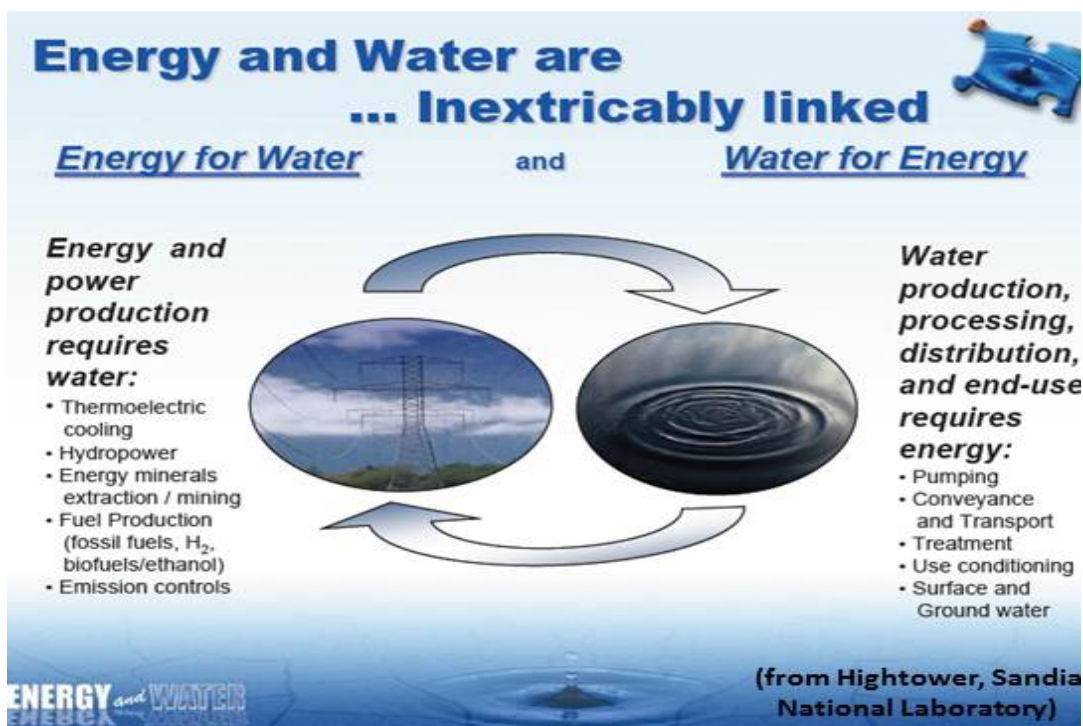
↗ For more information on wildfires in the state of Texas, refer to the **State Wildland Fire Annex**.

⁶ For more information, refer to Fannin, Blair. "[Texas Agricultural Drought Losses Reach Record \\$5.2 Billion.](#)" *Texas A&M University, AgriLife Today*, 2011.

power plants may be forced to close or reduce output, which can affect their ability to provide reliable energy generation.

At the same time that the supply of electricity may decrease, increased temperatures drive the demand for electricity to cool homes and businesses.⁷ This can threaten the power grid as well as have devastating public health and safety consequences including heat exhaustion and heat stroke and potential for carbon monoxide poisoning from extended or improper use of backup generators.

A major component of the state's economy is the oil and gas industry. Water plays a vital role in ensuring methods of extracting, recovering and conveying supplies of energy producing commodities go uninterrupted. In times of prolonged and severe drought, the ability to produce and distribute these energy sources may be affected incurring state and nationwide cascading effects. The link between energy and water is depicted in the above graphic.



⁷ For more information, refer to [Today in Energy](#) on the U.S. Energy Information Administration website.

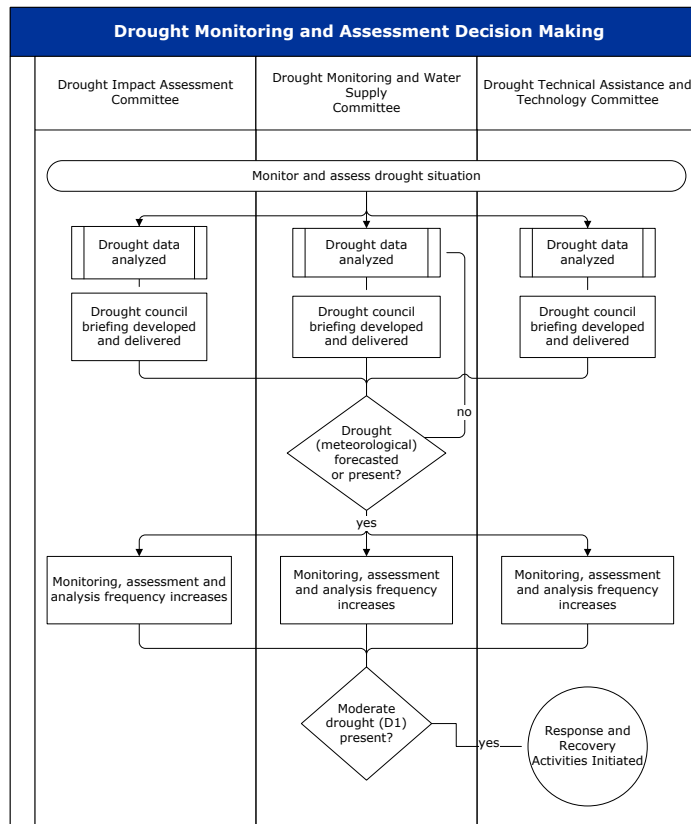
Decision-Making

This section identifies decision-making activities that result in drought response activities by state partners.

The Drought Preparedness Council (DPC) approaches coordination and decision-making in two phases: monitoring and assessment; and response and recovery. These phases complement the existing framework set forth by the Texas legislature and the State Emergency Management Plan, allowing for a streamlined, comprehensive approach to drought management.

Monitoring and Assessment

Monitoring and assessment operations allow for the timely dissemination of information between agencies and decision makers. The DPC uses the six drought indices and other methodologies as described in the Defining the Hazard section as their primary sources of information. The DPC analyzes and interprets this information, weighting the indices and ultimately assigning a drought severity level. Having access to real-time analysis of this information allows the state to take a proactive approach to emerging drought conditions. Accurate information helps to identify activities that can mitigate drought impacts.



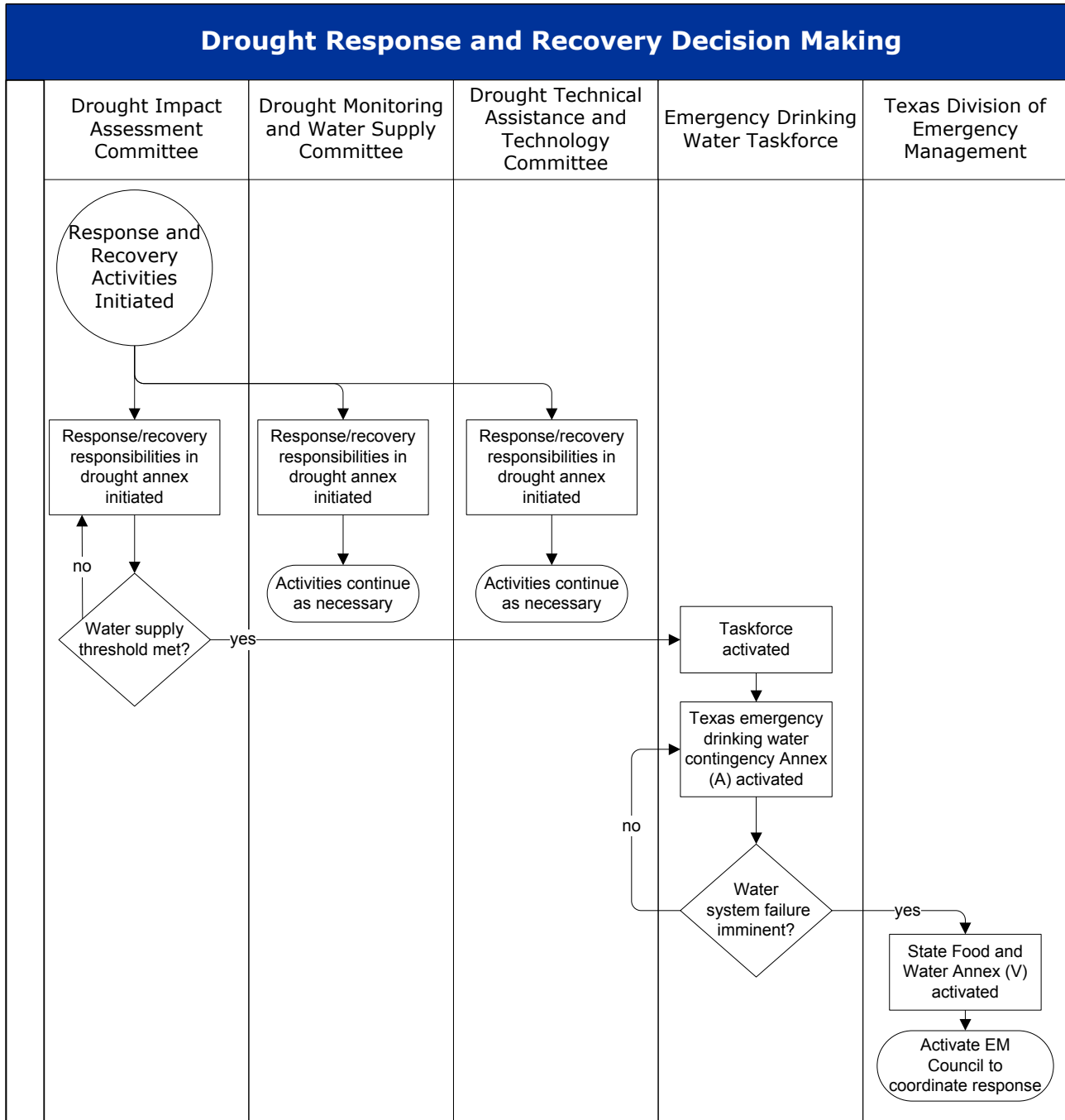
Response and Recovery

A comprehensive state drought response requires thorough analysis of available data by the DPC as well as a council declaration of drought. The council advises the State Drought Manager of such conditions and initiates coordination for state response and recovery activities through the DPC, DPC subcommittees and coordinating members. Recovery actions may begin simultaneously with response activities.

The DPC provides constant recommendations for response and recovery actions because actions are dependent on timing, location, extent, water supply conditions and other subjective considerations. The DPC notifies partner agencies when an activation trigger has been met. Activation of the state drought response and

recovery functions outlined in this document may be triggered in the following situations:

- Moderate/Agricultural drought conditions are identified and threaten to intensify or persist according to the six drought indices and US Drought Monitor, as interpreted by the DPC.
- The Governor or State Drought Manager directs activation.
- The DPC considers other factors and makes a recommendation for drought response and recovery actions to begin or continue.



The following table outlines potential actions taken at specific drought severity stages during statewide response and recovery operations.

| Stage | Potential Actions |
|-----------|---|
| D0 | <p>The following actions may occur under normal to abnormally dry conditions:</p> <ul style="list-style-type: none"> ▪ Drought Preparedness Council (DPC) monitors and assesses situation. ▪ DPC consults National Weather Service (NWS), State Climatologist, and others to discuss weather and climate trends. ▪ DPC reviews county level data for drought emergence. ▪ DPC issues monthly Drought Situation Report. ▪ DPC reviews lessons learned from previous drought periods. ▪ DPC has not declared an official drought. |
| D1 | <p>The following actions may occur under agricultural or moderate drought:</p> <ul style="list-style-type: none"> ▪ DPC increases monitoring frequency. ▪ OSC and other entities assess climatologic data for indications that meteorological or climatologic drought is present and forecasted to persist. ▪ TDA and AgriLife assess the scope and intensity of drought impacts on agricultural conditions for indications that drought will persist or intensify. ▪ TDA and AgriLife initiate USDA Secretarial Disaster Designation process. ▪ DPC transitions to response phase. ▪ Water suppliers are requested to implement voluntary water-use restrictions. ▪ DPC declares an official drought. |
| D2 | <p>The following actions may occur under severe drought:</p> <ul style="list-style-type: none"> ▪ Emergency Drinking Water Task Force activated for systems identified as potentially having less than 180 days of water remaining. ▪ TCEQ establishes a 180 day High Priority List to track and offer assistance to water systems on High Priority list that have been severely impacted by persistent drought conditions. ▪ Water suppliers implement voluntary or mandatory water-use restrictions. ▪ TDA and AgriLife offer assistance and advice to farmers and ranchers affected. ▪ State Drought Manager may ask Governor for a Disaster Proclamation for drought. ▪ DPC engages private sector partners concerning threats to CIKR such as energy, petrochemical, and other sectors as needed. ▪ Governor may issue a drought disaster proclamation. ▪ USDA Secretarial drought disaster declarations are in effect for farmers and ranchers. |
| D3 | <p>The following actions may occur under extreme drought emergency conditions:</p> <ul style="list-style-type: none"> ▪ Emergency Drinking Water Task Force meets on a weekly basis (or more frequently as needed) to offer support to water systems identified as potentially having 180 days or less of water remaining. ▪ State agencies may waive certain state regulations in response to public water supply emergencies with a gubernatorial drought disaster proclamation. ▪ Water suppliers implement voluntary or mandatory water-use restrictions. ▪ DPC agencies may increase drought education and outreach to affected regions. ▪ Drought JIC may be initiated for information sharing. |

Stage**Potential Actions**

- DPC may promote increased outreach activities and provide workshops and technical assistance to water systems.
 - DPC may engage in increased federal and private sector involvement considering impacts to CIKR.
 - Governor declares a drought disaster by proclamation identifying every affected county in the state.
-

D4 The following actions may occur under exceptional drought disaster conditions:

- Affected water suppliers implement mandatory water-use restrictions.
 - State Drought Manager, in coordination with the State Operations Center, may activate Food and Water Annex (V) of the State Emergency Management Plan to provide short-term support to water supply emergencies.
 - Drought Technical Assistance and Technology Committee provides recommendations for counties to remain or to be taken off of the Governor's Drought Disaster Proclamation every 30 days.
 - State Drought Manager, in coordination with the State Operations Center, may activate the Mass Care Annex (C) of the State Emergency Management Plan.
 - DPC will forward all requests for state assistance not able to be filled by the DPC through established emergency management system channels.
 - State may request federal or interstate assistance through established emergency protocols.
-

Concept of Operations

The state may be required to perform several interrelated emergency functions in response to a drought. This section summarizes each function and highlights drought-specific considerations.

The state’s planned response to drought involves numerous government agencies, nongovernmental and voluntary organizations, private sector, critical infrastructure and key resources stakeholders and other partners.

These entities work closely together to monitor emerging threats, coordinate resources to respond to local needs, and assist with long-term recovery.

As mandated by Texas Government Code 418, the Texas Division of Emergency Management (TDEM) is responsible for preparing and maintaining the State of Texas Emergency Management Plan (State Plan). TDEM designates a lead entity to support the planning process for each functional or hazard annex that comprises the State Plan. A lead entity has significant responsibility, resources and capability for this function. Texas Division of Emergency Management (TDEM) is designated the lead entity to assist in this planning effort. Additional support entities are included in the planning effort and provide their knowledge about capabilities, coordination and resources for the annex.

Drought Response Functions

The following table shows the core emergency functions used in response to a drought with possible notification times for activation (a = advisory), for directing resources to prepare to activate (b = alert), for moving resources in support of response operations (c = activation) and for when resources begin to respond (d = onsite/operational).

The drought severity stages (D0-D4) correspond to the Advisory, Alert, Activation and Start of Operations for drought response functions. Drought incidents can be extremely slow-moving and may occur over the course of months or even years. Drought forecasting may be conducted months in advance while the state is still in “normal” conditions. Due to the uncertainty of drought conditions and the fact that different parts of the state experience differing severity stages, especially water supply emergencies, this timeframe may require immediate or delayed activations of the functions outlined in this section. Timelines in this planning document are expected to be inexact and are shown here only to provide a frame of reference.

| Emergency Function (Annex) | Normal Conditions | Abnormally Dry/Emerging Drought Conditions | Moderate Drought | Severe Drought | Extreme Drought | Exceptional Drought/Disaster |
|------------------------------------|-------------------|--|------------------|----------------|-----------------|---------------------------------|
| | Normal | D0 | D1 | D2 | D3 | D4 |
| Emergency Management (N) | d | d | d | d | d | d |
| Public Information (I) | d | d | d | d | d | d |
| Resource Support (M) | c | d | d | d | d | d |
| Animals/Agriculture (O) | b | d | d | d | d | d |
| Firefighting (F) | a | d | d | d | d | d |
| Recovery (J) | a | a | b | d | d | d |
| Energy (L) | a | a | b | c | d | d |
| Public Works/Engineering (K) | a | a | b | c | d | d |
| Volunteer/Donations Management (T) | a | a | b | c | d | d |
| Food & Water (V) | a | a | a | b | c | d |
| Health & Medical (H) | a | a | a | b | c | d |
| Shelter/Mass Care (C) | a | a | a | b | c | d |

Drought-specific considerations for each function are described on the following pages. More comprehensive information on any function outlined in this hazard annex may be found in the corresponding functional annex within the State of Texas Emergency Management Plan by following the links provided.

Emergency Management

The Texas Division of Emergency Management (TDEM) coordinates statewide emergency response and facilitates the State Drought Preparedness Council (DPC) the overarching body dedicated to providing monitoring and assessment and response and recovery efforts for the state. The Chief of TDEM is the State Drought Manager and as such chairs the DPC and is responsible for coordinating statewide drought response activities.

The State Drought Preparedness Council

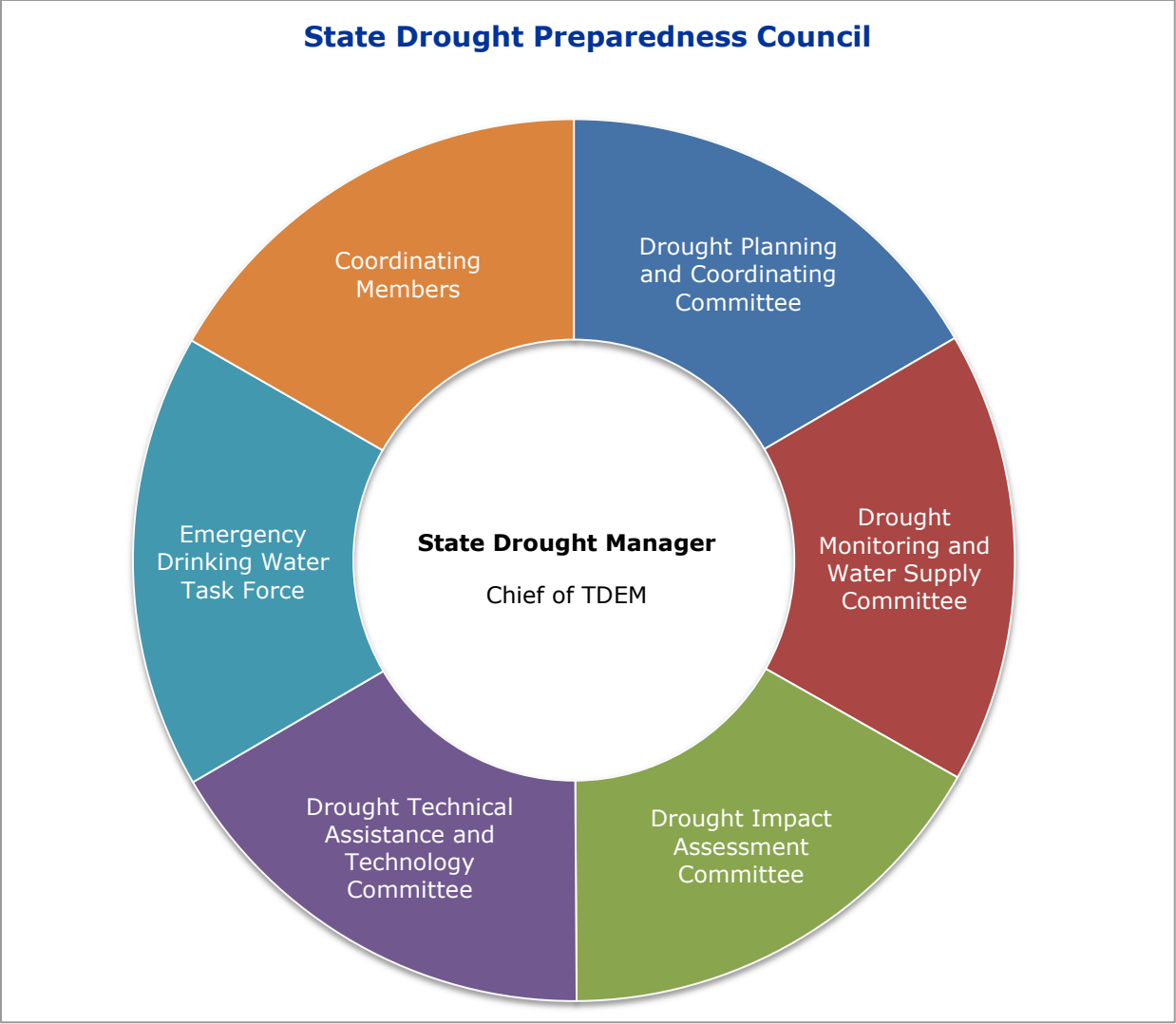
The Drought Preparedness Council meets at least on a monthly basis, regardless of drought conditions, to monitor and assess drought and support a robust and comprehensive response to drought. Council responsibilities are to:

- Assess and report drought monitoring and water supply conditions.
- Advise the governor on severe drought conditions.

- Recommend specific provisions for a defined state response to drought-related disasters.
- Ensure effective coordination among state, local, federal, tribal and private sector entities in drought response activities.
- Report to the state legislature regarding significant drought conditions.

The council includes local, regional, state, federal, academic partners, any personnel or agency designated by the governor and liaises with other partners as appropriate. The DPC is comprised of the following legislatively designated and gubernatorial appointed state agencies and members:

- Electric Reliability Council of Texas (ERCOT)
- Individual members appointed by the Governor
- Office of the Governor-Department of Economic Development and Tourism (EDT)
- Office of the State Climatologist (OSC)
- Public Utility Commission (PUC)
- Texas A&M AgriLife Extension Service (AgriLife)
- Texas A&M Forest Service (TFS)
- Texas Alliance of Groundwater Districts (TAGD)
- Texas Commission on Environmental Quality (TCEQ)
- Texas Department of Agriculture (TDA)
- Texas Department of Housing and Community Affairs (TDHCA)
- Texas Department of State Health Services (DSHS)
- Texas Department of Transportation (TxDOT)
- Texas Department of Public Safety- Texas Division of Emergency Management (TDEM)
- Texas Parks and Wildlife Department (TPWD)
- Texas State Soil and Water Conservation Board (TSSWCB)
- Texas Water Development Board (TWDB)



Coordinating Members

Coordinating members, though not an official part of the DPC, are an essential component of the council. These members may be federal agency partners, non-governmental agencies, volunteer organizations, public entities and academic community partners; they help provide an inclusive perspective on the effects of drought.

Federal Agency Partners

The DPC acts as the state’s liaison with federal agencies promoting coordination at all levels of government in order to ensure a robust and comprehensive response effort to drought emergencies.

These partners include, but are not limited to:

- Federal Emergency Management Agency (FEMA)

- National Oceanic and Atmospheric Administration (NOAA) to include the National Weather Service (NWS) and National Integrated Drought Information System (NIDIS)
- United States Army Corps of Engineers (USACE)
- United States Bureau of Reclamation (USBR)
- United States Department of Agriculture (USDA) to include the Farm Service Agency (FSA)
- United States Department of Housing and Urban Development (HUD)
- United States Geological Survey (USGS)

Other Entities

The DPC coordinates with other entities, including public agencies, volunteer organizations and academic institutions to support a diverse planning and coordinating body offering critical perspectives to drought response and water management. These partners include but are not limited to:

- Texas Military Forces (TxMF)
- Health and Human Services Commission (HHSC)
- National Voluntary Organizations Active in Disasters (NVOAD)
- Texas River Authorities
- University of Texas Center for Space Research (UTCSR)
- University of Texas Jackson School of Geosciences
- Southern Climate Impacts Planning Program (SCIIPP) members

The DPC coordinates the state's drought response through four committees, and one specialized task force. Coordinating members serve the council by offering a whole community approach to drought planning and response.

Drought Impact Assessment Committee

The Drought Impact Assessment committee is chaired by TCEQ and coordinates information about statewide drought impacts across all sectors as well as appropriate mitigation and response actions. This committee is made up of agencies that have specific expertise to monitor and analyze the onset of drought and forecasted water supply, water use and water demand issues. This committee provides informed recommendations to the DPC, State Drought Manager, legislature and the governor to determine whether drought exists or is imminent. This committee also provides recommendations to reduce existing or potential impacts to the state's water supply, economy, industry, public health, energy, agricultural and natural resources sectors.

Drought Monitoring and Water Supply Committee

The Drought Monitoring and Water Supply Committee is chaired by the TWDB. The committee informs the DPC of climatologic, meteorological and hydrological drought conditions through the reporting of current and forecasted weather conditions and the six drought indices. The committee provides an analysis of the current drought indices, highlights improvements or degradations, and assesses water supply conditions.

Drought Technical Assistance and Technology Committee

The Drought Technical Assistance and Technology Committee is chaired by TWDB. TWDB, TCEQ, TDEM and the OSC analyze drought data, coordinate with regional water planning groups on drought issues and make recommendations for a county to either remain or be taken off a governor's drought disaster proclamation. The committee collaborates with academics and other partners to identify potential alternative and innovative water management solutions.

Emergency Drinking Water Task Force

Co-chaired by TDEM and TCEQ, the Emergency Drinking Water Task Force tracks water systems that have been identified as potentially having 180 days or less of potable water. The committee provides support to local water systems' efforts to secure dependable sources of water, locate funding resources, provide technical assistance, and assist with applying for grants or loans. Committee partners coordinate technical and financial assistance and outreach for contingency planning to drought impacted areas.

Drought Planning and Coordination Committee

The Drought Planning and Coordinating Committee is chaired by TDEM and conducts drought response planning and is responsible for providing updates to the State Drought Annex. This committee is comprised of all designated DPC agencies, as well as all other coordinating member agencies and recommends specific revisions for a defined state response to a drought disaster.

This image shows the various agencies of the DPC and their roles in the various committees on which they serve. To view this information in a table, for state agencies only, see the Agency/Organization Responsibilities section.

| | | | | | | | | |
|------------------------------------|---|---|---------------------------|-----------------------|-------------------|----------------------|--------------------------|----------------------|
| Committee Chair | C | | Planning and Coordination | Monitoring and Supply | Impact Assessment | Technical Assistance | Emergency Drinking Water | Coordinating Members |
| Committee Member | M | | | | | | | |
| State Drought Preparedness Council | | | | | | | | |
| Federal Agency Partners | | | | | | | | |
| Other Entities | | | | | | | | |
| AgriLife | M | | M | | | | | |
| DSHS | M | | M | | | | | |
| EDT | M | | M | | | | | |
| ERCOT | M | | M | | | | | |
| Governor Appointee | M | | | | | | | |
| HHSC | M | | | | | | M | |
| OSC | M | M | | M | | | | |
| PUC | M | | M | | | | | |
| TAGD | M | | M | | | | | |
| TCEQ | M | M | C | M | M | | | |
| TDA | M | | M | | M | | | |
| TDEM | C | | M | M | C | | | |
| TDHCA | M | | M | | | | | |
| TFS | M | | M | | | | | |
| TPWD | M | | M | M | | | | |
| TSSWCB | M | | M | | | | | |
| TWDB | M | C | M | C | M | | | |
| TxDOT | M | | M | | | | | |
| FEMA | | | | | | | M | |
| HUD | | | | | | | M | |
| NOAA | | | | | | | M | |
| USACE | | M | | | | | M | |
| USBR | | | | | | | M | |
| USDA | | | | | | | M | |
| USGS | | | | | | | M | |
| Texas River Authorities | M | | | | | | M | |
| TXMF | M | | | | | | M | |
| UT - Jackson School of Geosciences | M | | | | M | | M | |
| UTCSR | M | | | | M | | M | |
| VOAD (National & TX) | M | | | | | | M | |

Coordination Process

In periods of drought, the effectiveness of response hinges on timely and effective coordination among decision-makers, state agencies, tribal and federal partners, private stakeholders and the whole of community.

As with all disasters, drought response begins at the local level. At the local level, drought may be identified by: the county judge, mayor, utility providers, extension agents, or other officials such as the emergency management coordinator (EMC). Cities, counties or water suppliers may enact the various stages of their drought contingency or water conservation plans. The local water supplier, by law, notifies TCEQ when a local drought exist requiring mandated water restrictions or the water supply is expected to potentially be exhausted in 180 days or less.

In turn, TCEQ reports the local drought conditions to the Drought Preparedness Council. The council, its subcommittees and the State Drought Manager then take a number of actions as follows.

The Drought Preparedness Council and its members work together to:

- Review and disseminate official agency-specific drought-related information for use by the press, radio, web, television and social media.
- Participate in conference calls, meetings and workshops coordinated by TDEM, where new information is shared and drought response strategies are developed.
- Participate in weekly conference calls run by the state climatologist, who gathers statewide input for the US Drought Monitor.
- Hold emergency drought planning workshops across the state to engage local stakeholders.

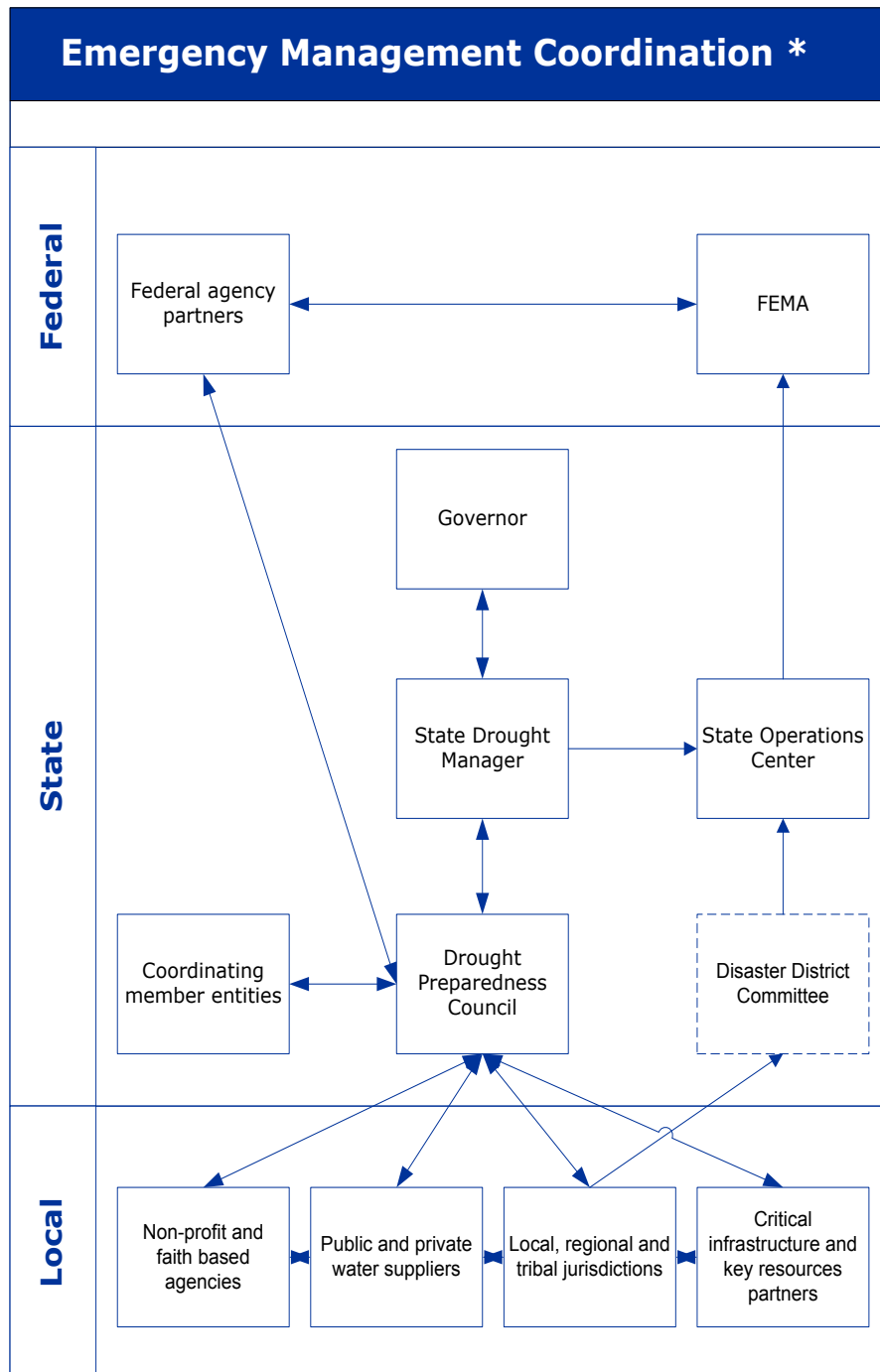
The Emergency Drinking Water Task Force provides support to water suppliers identified as potentially having 180 days or less of water. If this task force exhausts its ability to provide support, the task force makes a recommendation to the DPC to seek support from the State Operations Center (SOC). In turn, the SOC may:

- Activate the Food and Water Annex (V) and coordinate with identified state partners to provide short-term emergency drinking water.
- Request assistance from FEMA when state resources are exhausted.

The Technology and Technical Assistance Subcommittee considers whether to recommend that the governor issue a Drought Proclamation to add (or remove) a county. The subcommittee coordinates with TDEM's Recovery Section when developing recommendations.

The DPC's State Drought Manager provides routine updates to the governor and state legislators. In addition, the State Drought Manager may pass along the Technology and Technical Assistance Subcommittee's recommendation to issue or remove a Drought Proclamation.

In addition to the coordination mechanism described here, it is possible that a local jurisdiction, after exhausting all local resources, may go directly to the Disaster District Committee (DDC) for assistance per the traditional emergency management request process. When the DDC exhausts local resources, the DDC would submit requests to the SOC. In turn, when state resources are exhausted, the SOC would request support from FEMA, including a possible Presidential Disaster Declaration.



*This graphic represents coordination, not logistical processes for resource support. For resource request or STAR processes, please see the Resource Support section of this document.

Coordination Tools

The DPC uses a number of tools to gather and analyze data and reports. Together these help provide a common operating picture, allowing responders at all levels to make effective, consistent and timely decisions.

The following table provides a descriptive overview of each coordination tool.

| Tool | Description |
|---|--|
| Drought Council Meetings | Drought council meetings are held every month regardless of drought conditions and are facilitated by TDEM. <ul style="list-style-type: none"> ▪ All subcommittees report on drought impacts affecting the different sectors. ▪ The state climatologist provides weather data and forecasting. ▪ Council shares any pertinent information and fulfills any requests from the governor, legislature, or State Drought Manager. |
| Situation Report | TDEM compiles a monthly situation report to summarize current drought conditions and impacts, which is sent to the drought council, stakeholders, and is posted online. <ul style="list-style-type: none"> ▪ Explains the nature of the current threat. ▪ Describes current and forecasted situation. ▪ Specifies degradations or improvements from the previous month's conditions. |
| Emergency Drinking Water Task Force Meetings | The task force is chaired by TDEM and co-chaired by TCEQ and meets weekly during emergency and disaster drought conditions when the threshold of a water system self-reporting as potentially having 180 days or less of available water and: <ul style="list-style-type: none"> ▪ Coordinates support for water systems that are placed on TCEQ's High Priority list. Provides updates on status of water systems projects. |
| Joint Information Center | Texas A&M AgriLife Extension Service may activate a joint information center that: <ul style="list-style-type: none"> ▪ Shares information between state agencies and coordinates public information releases. ▪ Meets weekly via conference call as recommended by the DPC. |
| Drought End of Year Report | Texas Division of Emergency Management publishes a drought End of Year report that: <ul style="list-style-type: none"> ▪ Summarizes the state's drought conditions and actions taken by the DPC over the past one year period. |
| Drought Biennial Report | Texas Division of Emergency Management publishes a drought biennial report due to the Texas State Legislature on January 15 of every odd numbered year that: <ul style="list-style-type: none"> ▪ Summarizes the state's drought conditions and actions taken by the DPC over the previous two years. |

| Tool | Description |
|---------------------------|---|
| DPC Correspondence | When appropriate, the DPC sends official letters to drinking water suppliers, county judges, mayors and private sector partners providing notification of drought impacts, legislative changes and other drought related information. |

Public Information

Although drought is a slow moving incident, public information on forecasted or persistent drought conditions and impacts is extremely vital. The release of timely, consistent and effective public information helps all Texans understand threats, potential impacts, available services, funding options and timelines for response and recovery.

DPC agencies and organizations with community relations, government relations and public affairs duties share responsibility for disseminating information to the public and the media during a drought. Public information must be accessible to the whole of community, including persons with disabilities or functional and access needs. Having the public fully aware of drought conditions, and water supply levels is instrumental in enacting drought contingency planning and enacting water conservation measures.

During a drought, a variety of accessible public messages are disseminated by various state agencies with the Texas A&M AgriLife Extension Service serving as the primary agency for a Statewide Drought Joint Information Center (JIC).

The checklist below outlines tasks carried out in support of the public information function.

Drought Public Information Checklist

| Phase | Agency | Activity |
|----------------------|----------|--|
| D0 or Greater | TDA | Maintains information online about drought impacts to the agricultural sector and the hay hotline to assist farmers and ranchers in locating hay. |
| D1 or Greater | AgriLife | <ul style="list-style-type: none"> ▪ Activates A&M AgriLife Communications radio, TV and online resources to support and assist with the dissemination of public information and education to County EMCs, local VOADs, rural and urban communities and businesses about current and forecasted drought disaster conditions⁸. <ul style="list-style-type: none"> ▪ Uses Extension Disaster Education Network (EDEN) community outreach |

⁸ For more information, refer to [Texas Extension Disaster Education Network \(EDEN\)](#) on the Texas A&M AgriLife Extension website.

| Phase | Agency | Activity |
|----------------------|------------|---|
| | | <ul style="list-style-type: none"> materials through VOADs. Activates Drought JIC to serve as a clearinghouse for drought messaging information sharing and identify assistance programs available. |
| D2 or Greater | TxDPS-TDEM | Publishes the monthly Drought Situation Report on the TDEM website |
| | TCEQ | Conducts outreach and workshops to local water suppliers, local jurisdictions, and other partners. |
| | TWDB | Publishes water conservation strategies and materials. |
| | TDA | Provides reports and publications on drought information. Conducts public information campaigns showing drought impacts. |
| | OSC | Conducts outreach and workshops and provides current information to the public on drought, drought prediction, and climate variability. |
| D3 or Greater | DSHS | Delivers public health risk messaging tied to drought conditions. |

The public information function falls under the Emergency Support Function (ESF) for External Affairs. [↗](#)

Resource Support

During a drought, the Drought Preparedness Council, the Emergency Drinking Water Task Force, the Texas Water/Wastewater Agency Response Network (TXWARN) and the Texas Water Infrastructure Coordination Committee (TWICC) all assist with resource coordination and deployment as needed. Public and private water systems look to these sources to obtain resources to complete water projects such as interconnections, well field exploration, rehabilitating old wells, construction of desalination and water treatment plants.

In the event a drought is so severe that these groups cannot achieve resource coordination, traditional emergency management channels for resource requests and fulfillment take effect as described in the next section beginning with the local jurisdiction declaring a local emergency.

[↗](#) For more information on the ESF for External Affairs, refer to the **State Public Information Annex (I)**.

The Resource Request Process

Resources are provided primarily by local jurisdictions. If a jurisdiction has unmet resource needs, it may try to obtain the resource from the following entities:

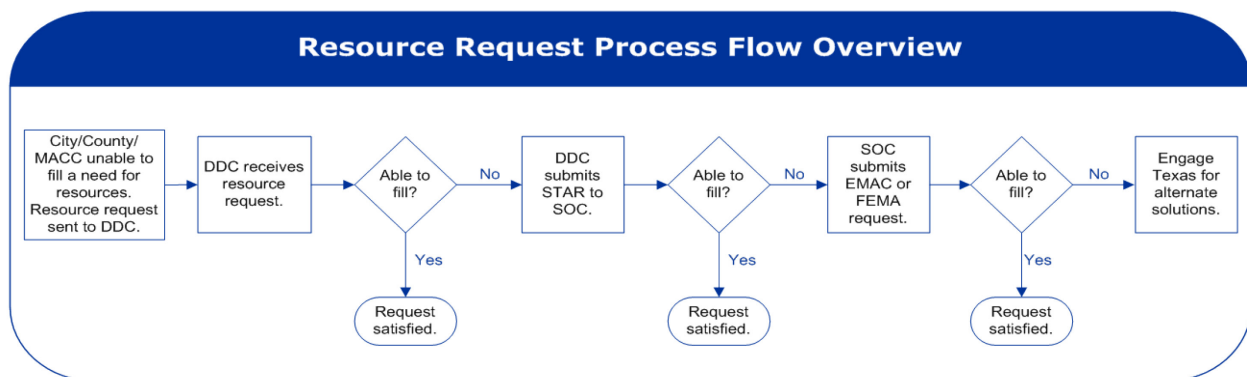
- Local nongovernmental or faith-based organizations.
- Local contracts or private-sector partnerships.
- Mutual aid agreements with nearby jurisdictions.
- Pre-designated regional response teams or resources.
- A regional multi-agency coordination center (MACC).
- The Disaster District Committee (DDC).

When a DDC receives a request for state assistance, the DDC provides the resource if it is available. If the resource is not available, the DDC submits a resource request to the SOC using a State of Texas Assistance Request (STAR) form.

The state may request assistance from EMAC member states or territories, federal support agencies and external partners. ↗

Federal assistance relies on specific requests and priorities made by the state and becomes available once the state receives a presidential disaster declaration.

Although state and local governments have a wide variety of emergency response assets, emergency contracts are available to provide certain specialized emergency response equipment, supplies and services.



Resource Support Checklist

The checklist below outlines tasks carried out in support of the resource support function during a drought incident.

↗ For more information on assistance from EMAC members procedures, refer to the **State Logistics and Resource Management Annex (M)**.

Drought Resource Support Checklist

| Phase | Agency | Activity |
|----------------------|--------------|---|
| D1 – D4 | TxDPS - TDEM | Coordinates with local jurisdictions and Disaster Districts to pre-identify RSA, DSA, CSA and POD locations and resource shortfalls. |
| D3 or Greater | TxDPS - TDEM | <ul style="list-style-type: none"> ▪ Alerts partner agencies and contract vendors to prepare for activation of state contracts for: ▪ HHSC for water and ice. ▪ Portable restrooms, hand-washing stations and shower trailers. ▪ Pre-approved bulk water haulers. |
| | TCEQ | Identifies state pre-approved bulk water haulers. |

Mass Care

An extreme prolonged drought may create a need for mass care services. These services may include the provision of temporary shelter and feeding. The mass care function falls under the ESF for mass care, housing and human services. [↗](#)

Food and Water

The state of Texas may not be able to provide bulk potable water for an indeterminate amount of time due to drought emergencies. Emergent responses to drought induced water shortages are addressed in the section on emergency drinking water. [↗](#) Short-term, temporary and immediate responses to emergency food, water and ice requirements cross several ESFs and are addressed in another annex, [↗](#) where they are described in detail.

Health and Medical Services

Low water quality, extreme temperatures and possible power interruptions may all adversely affect public health, behavioral health and may affect the ability for medical institutions to function at acceptable standards. The primary agency for state support of these response efforts is the Texas Department of State Health Services.

Public Health Risk Communication

DSHS develops public health risk messages for the public in conjunction with appropriate Drought Council members.

[↗](#) For more information on the ESF for mass care, housing and human services, refer to the **State Mass Care Annex (C)**.

[↗](#) For more information on drought induced water shortages, refer to the **Emergency Drinking Water Attachment**.

[↗](#) For more information on short-term, temporary and immediate response requirements for food, water and ice, refer to the **State Food and Water Annex (V)**.

Medical Services

DSHS coordinates and provides information to medical facilities that may be affected due to water shortages and poor water quality.

Drought Public Health and Medical Checklist

| Phase | Agency | Activity |
|---------------|--------|--|
| D3 or Greater | DSHS | <ul style="list-style-type: none">Conducts health and medical assessments in communities affected by drought conditions.Assists local governments in providing health and medical information to the public.Coordinates support to medical facilities affected by drought. |

The Public Health and Medical Services function falls under the Emergency Support Function (ESF) for Public Health and Medical Services. [↗](#)

Animals and Agriculture

The livestock industry is a key segment of the state's economy, as Texas exports more than \$1.5 billion in animals and animal products annually. Drought impacts to animals and agriculture are, by far, the most devastating to this industry and may have far reaching economic impacts within the state and across the nation.

An extreme or exceptional drought can cause a dramatic reduction in livestock herds, widespread loss of crops in the state and hay may be in very short supply as livestock feeding increases, and dry conditions reduce hay production. Ranchers may not have sufficient water in wells or stock ponds and their livelihoods and those in nearby communities can be threatened. The USDA may activate Secretarial Drought Disaster Declarations that activate federal assistance programs.

Drought Animal and Agriculture Checklist

| Phase | Agency | Activity |
|---------|--------|---|
| D0 – D4 | TDA | <ul style="list-style-type: none">Provides public information and educational materials in response to drought and available recovery programs to farmers and ranchers.Activates hay hotlineMaintains updated drought information on its website to assist farmers, ranchers, and agribusinesses. |

[↗](#) For more information on the ESF for public health and medical services, refer to the **State Public Health and Medical Services Annex (H)**.

| Phase | Agency | Activity |
|-------|----------|--|
| | AgriLife | <ul style="list-style-type: none"> Provides public information and educational materials in response to drought and available recovery programs to farmers and ranchers. Provides assistance, advice and outreach to farmers and ranchers. Maintains a state of readiness among food, agricultural, and environmental safety specialists and county agents to support public information and education addressing mitigation, economic loss, damage assessment, and recovery. |

The animals and agriculture function falls under the ESF for agriculture and natural resources. [↗](#)

Firefighting

Extreme and prolonged drought conditions can create a perfect storm of dead vegetation, dry soil, high temperatures, low precipitation and strained water availability to create a dangerous fire risk. Fire forecasting and burn ban notifications are vital during drought periods to prepare for and mitigate against devastating wildfires.

The checklist below outlines tasks carried out in support of the firefighting function.

Drought Firefighting Checklist

| Phase | Agency | Activity |
|----------------|--------|---|
| D0 – D4 | TFS | <ul style="list-style-type: none"> Provides fire forecasting and tree health assessments. Identifies which counties are under a burn ban. |
| D3 – D4 | TFS | Conducts tree removal operations. |

The firefighting function falls under the Emergency Support Function (ESF) for firefighting. [↗](#)

[↗](#) For more information on the ESF for agriculture and natural resources, refer to the **State Animals, Agriculture, and Food and Feed Annex (O)**.

Energy

Water and power are inextricably linked in the state of Texas. ERCOT coordinates with power companies and tracks drought ravaged areas and power generating facilities that may be affected.

The checklist below outlines tasks carried out in support of the energy function.

Drought Energy Checklist

| Phase | Agency | Activity |
|---------------|--------|--|
| D2 or Greater | ERCOT | Monitors for shortfalls in generation capacity due to increased demand and limited water availability. |

The energy function falls under the Emergency Support Function (ESF) for energy. [↗](#)

Public Works and Utilities

Damage from severe drought can cause critical public works and utility infrastructure components to be out of service for extended periods of time. Disruption of services impacts the ability of key businesses to re-open and communities to function.

The checklist below outlines tasks carried out in support of the public works and utilities function.

Drought Public Works and Utilities Checklist

| Phase | Agency | Activity |
|---------------|--------|--|
| D2 or Greater | TCEQ | Provides technical assistance to local governments and water and wastewater utilities. |
| | TxDOT | Assesses damages and repairs state highways. |

The public works and engineering function falls under the Emergency Support Function (ESF) for public works and engineering. [↗](#)

Volunteer and Donations Management

TDEM is responsible for coordinating state volunteer and donations management functions. TDEM collaborates with National Voluntary Organizations Active in Disasters (NVOAD)s and other non-governmental agencies to develop community

[↗](#) For more information on the ESF for firefighting, refer to the **State Firefighting Annex (F)**.

[↗](#) For more information on the ESF for energy, refer to the **State Energy Annex (L)**.

[↗](#) For more information on the ESF for public works and engineering, refer to the **State Public Works and Engineering Annex (K)**.

outreach programs, decision- making aids and water saving strategies. The checklist below outlines tasks carried out in support of the volunteer and donations management function.

Drought Volunteer and Donations Management Checklist

| Phase | Agency | Activity |
|----------------------|--------------|--|
| D3 or Greater | TxDPS - TDEM | <ul style="list-style-type: none"> Reviews volunteer and donations plans for forecasted impacted jurisdictions. Collaborates with NVOADs and other non-governmental agencies to develop drought response strategies. Communicates with non-governmental/faith-based groups for donations management of bottled water and other commodities. |

The volunteer and donations management function falls under the Emergency Support Function (ESF) for external affairs.[↗](#)

Recovery

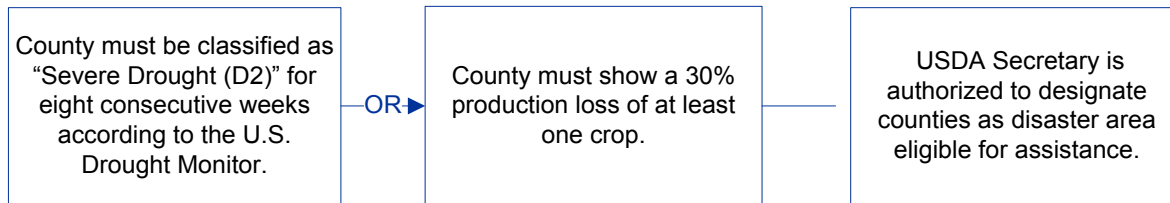
Planning for the recovery phase overlaps all drought monitoring, assessment and response operations. TDEM’s Recovery Section administers drought disaster proclamation recommendations from the DPC to the governor’s office every thirty days during a declared drought. In addition, the US Secretary of Agriculture is authorized to designate counties as disaster areas and make emergency loans to producers suffering losses in those counties and adjoining counties. These disaster designations are also used by the Farm Service Agency (FSA) as a requirement for disaster loan eligibility.

USDA Secretarial Drought Disaster Declaration Process

Drought declarations by the U.S. Department of Agriculture (USDA) occur after significant economic damage has been done by drought. The USDA uses the U.S. Drought Monitor as a tool to nearly automatically provide a disaster designation. Despite the automatic trigger, the state governor or Indian Tribal Council always has the ability to request a Secretarial Disaster Designation as needed. Producers may apply for low-interest emergency (EM) loans in counties named as primary or contiguous under a disaster designation.

The Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency (EM) loans to producers suffering losses in those counties and in counties that are contiguous to a designated county.⁹

[↗](#) For more information on the ESF for external affairs, refer to the **State Volunteer and Donations Management Annex (T)**.



Presidential Disaster Declaration

The Stafford Act (§401) requires that: "All requests for a declaration by the President that a major disaster exists shall be made by the Governor of the affected state." TDEM prepares the declaration request for the governor's office, which then makes the request through FEMA Region VI. Tribal groups are exempted from this requirement. The checklist below outlines tasks carried out in support of the recovery function.¹⁰

Drought Recovery Checklist

| Phase | Agency | Activity |
|----------------|--------------|--|
| D2 – D4 | AgriLife | Provides information on available recovery programs. |
| | TDA | <ul style="list-style-type: none"> Tracks USDA secretarial drought disaster declarations in the state. Administers USDA Community Development Block Grant funds. Maintains Drought Resource Information Packet (DRIP) on website. |
| | TxDPS - TDEM | <ul style="list-style-type: none"> Drafts governor drought disaster proclamation recommendation in coordination with the DPC. Updates every thirty days as recommended by Council. Updates available drought assistance program information. |

The recovery function falls under the Emergency Support Function (ESF) for long-term community recovery.[↗](#)

⁹ For more information, refer to [Disaster Designation Process](#) in U.S. Department of Agriculture Federal Register Volume 77.

¹⁰ For more information, refer to [Robert T. Stafford Disaster Relief and Emergency Assistance Act, Sec. 401](#) in the FEMA website.

[↗](#) For more information on the ESF for long-term community recovery, refer to the **State Recovery Annex (J)**.

Summary of Responsibilities

This section specifies the responsibilities of stakeholders with capabilities during drought preparedness, response and recovery.

All state Drought Preparedness Council (DPC) agencies and organizations that support drought response are responsible for the tasks listed below.

Agency Checklist

Use the following checklist to ensure all EMC responsibilities are addressed.

| Phase | Task |
|---------------------|--|
| Preparedness | <ul style="list-style-type: none">▪ Determine staff requirements.▪ Identify specific personnel who can fill extended emergency duty positions in the state operations center (SOC), agency emergency operation centers (EOCs), state medical operations center (SMOC), Disaster District emergency operations center, multi-agency coordination centers (MACCs), the Joint Field Office (JFO), field command posts, traffic control and/or reentry points. Ensure that the number of personnel identified is adequate.▪ Train representatives in accordance with National Incident Management System (NIMS) requirements and ensure that these representatives are made aware of the capabilities of their parent organization to provide assistance and support and be prepared to provide recommendations.▪ Ensure appropriate action guides and standard operating guides are developed and maintained.▪ Develop and maintain contact lists and notification procedures.▪ Develop lists of agency resources and update these lists at least quarterly; when these resources are paid for with federal funds, enter them into the Texas Regional Response Network (TRRN).▪ Develop and maintain procedures for identifying, locating, committing, deploying and accounting for agency emergency support resources. |
| Response | <ul style="list-style-type: none">▪ Assist with fulfilling intrastate and interstate mutual aid when possible.▪ Provide situational and operational status reports in accordance with existing procedures and/or as requested by the primary agency.▪ Support and coordinate accessibility and functional needs support services.▪ Capture costs associated with losses from |

| Phase | Task |
|-------|------|
|-------|------|

drought.

Agency/Organization Responsibilities

Some agencies provide personnel and/or equipment, while other agencies offer knowledge and expertise in working with response agencies, the vendor community, commercial organizations or associations that supply or restore services.

The following tables show stakeholder responsibilities organized by drought phase. Stakeholders are listed in alphabetical order.

Electric Reliability Council of Texas (ERCOT)

| Phase | ERCOT Responsibilities |
|----------------------------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Monitor and evaluate risk to electric generator availability in ERCOT due to drought effects on cooling water rights and supply. ▪ Keep the ERCOT Board informed of water supply issues. ▪ Communicate with at-risk generators regarding mitigation measures and contingency plans if drought affects their cooling water requirements. ▪ Provide timely information to the PUC and TCEQ regarding electric generator cooling water needs and risks to reliability of the ERCOT system if drought affects those needs. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ If the reliability of the ERCOT system is at risk, support necessary mitigation measures, including regulatory variances as appropriate. ▪ Implement existing emergency operation plans if needed to maintain reliability of the ERCOT system. |

Health and Human Services Commission (HHSC)

| Phase | HHSC Responsibilities |
|----------------------------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Planning and Coordinating Committee Member ▪ Coordinating member |
| Monitoring and Assessment | Serve as primary agency to coordinate Food and Water ESF 11 activities. |

Office of the Governor - Department of Economic Development and Tourism (EDT)

| Phase | EDT Responsibilities |
|----------------------------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Report, in collaboration with the local economic development organizations, on drought impacts to the state's economic growth and tourism industries. ▪ Monitor the aggregate influence that drought conditions have on the ability to attract new and expanding businesses to the state. ▪ Assess the influence that drought conditions have on the creation of new jobs and capital investment being made in the state. |

Office of the State Climatologist (OSC)

| Phase | OSC Responsibilities |
|----------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Monitoring and Water Supply Committee Member ▪ Planning and Coordinating Committee Member ▪ Technical Assistance and Technology Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Provide and interpret drought forecasts and long-term outlooks. ▪ Coordinate statewide input to the US Drought Monitor. ▪ Provide current information to the public on drought conditions, drought prediction, and climate variability. ▪ Provide forecasting and real time information surrounding current or emerging drought conditions using a Texas- specific modified and blended Standard Precipitation Index (SPI) and other monitoring products. ▪ Provide county- level interpretation of US Drought Monitor Map and United States Seasonal Drought Outlook Map. ▪ Analyze and interpret short and long term meteorological and climate data. |
| Response and Recovery | Develop drought severity level designations for every county in Texas according to the "D" levels of the US Drought Monitor. |

Public Utility Commission (PUC)

| Phase | PUC Responsibilities |
|------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |

Texas A&M AgriLife Extension Service (AgriLife)

| Phase | AgriLife Responsibilities |
|----------------------------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Monitor and report on emerging agricultural drought conditions affecting the state’s agricultural industry according to the Agricultural Assessment Index. ▪ Identify if agricultural drought conditions will persist or intensify. ▪ Meet with USDA and other entities to share drought information and identify trends. ▪ Share information with farmers and ranchers. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Activate and maintain the statewide Drought Joint Information Center (JIC). ▪ Coordinate and monitor USDA Secretarial drought disaster declarations. ▪ Track and tabulate statewide agricultural losses. ▪ Communications personnel network with local media and manage educational programs to disseminate information to local communities. ▪ Distribute water conservation resource materials and demonstration capabilities in the areas of household consumption, landscape maintenance and for livestock (municipal, industrial and agricultural) uses. ▪ Use groundwater well expertise to assist in emergency efforts to develop alternative water resources. ▪ Maintain website with drought activity and farmer and rancher assistance information. |

Texas A&M Forest Service (TFS)

| Phase | TFS Responsibilities |
|----------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Interpret fire forecasting and assess wildfire risk for the state on both a long and short term basis. ▪ Monitor and report on tree health conditions. ▪ Update and maintain a map of statewide burn bans currently in effect. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Provide continual updates on burn bans and active wildfires that may affect stressed water supplies. ▪ Report on real-time fire forecasting models. ▪ Provide tree removal and tree health assessments. |

Texas Alliance of Groundwater District (TAGD)

| Phase | TAGD Responsibilities |
|----------------------------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Coordinate with groundwater districts to share information and develop groundwater management plans. ▪ Compile reports on groundwater conditions. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Contact the local groundwater conservation district of affected jurisdictions and coordinate efforts with that district to ensure response activities work within the districts rules and regulations. ▪ Report on the drought contingency plan activations of each affected district. |

Texas Commission of Environmental Quality (TCEQ)

| Phase | TCEQ Responsibilities |
|----------------------------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Emergency Drinking Water Task Force Member ▪ Impact Assessment Committee Chair ▪ Monitoring and Water Supply Committee Member ▪ Planning and Coordinating Committee Member ▪ Technical Assistance and Technology Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Maintain a database of public water suppliers including water source, service area, population, system capacity and water quantity and water quality measures. ▪ Maintain a watch list of community water systems that have implemented voluntary or mandatory water use restrictions. ▪ Help public water systems prepare required Drought Contingency Plans. ▪ Assist major surface water users' preparation of required Water Conservation Plans. ▪ Use the Water Availability Models (WAM) for Texas river basins to protect existing water rights and environmental flow standards as well as provide information for applicants for new or amended water rights. WAMs include information on water rights, water uses, and naturalized stream flows. The models account for all water rights that use state surface water in each river basin and are based on the priority doctrine. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Update and report on the High Priority list (a list maintained by TCEQ to track water systems that have self-identified as potentially having 180 days or less of potable water available) and Watch List (a list maintained by TCEQ to track water systems suffering from drought conditions, but still maintaining greater than 180 days of potable water available) for affected water systems. |

| Phase | TCEQ Responsibilities |
|-------|--|
| | <ul style="list-style-type: none"> ▪ Administer an expedited review of proposed system upgrades and alternative water supplies for drought-impacted public water systems. ▪ Assist with identifying water supply alternatives and potential system interconnections. ▪ Provide financial, managerial and technical (FMT) assistance for public water and wastewater systems in exploring alternative sources of water for non-potable uses (reuse), consolidation practices and other options. ▪ Administer an expedited review of drought-related water rights applications. ▪ Respond to consumer calls regarding water outages and drought-related problems. ▪ Monitor water quality parameters for drought related degradation. ▪ Coordinate drought outreach workshops for public water systems. ▪ Meet weekly to share agency information and report on agency activities. ▪ Facilitate the Emergency Drinking Water Taskforce. |

Texas Department of Agriculture (TDA)

| Phase | TDA Responsibilities |
|----------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Emergency Drinking Water Task Force Member ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Provide updates on current drought impacts to the agricultural industry. ▪ Keep the agricultural industry and public informed of the latest drought information and any assistance available through press releases, the TDA web site, and the Disaster Resource Information Packet (DRIP). ▪ Coordinate and plan for the acquisition of hay resources. ▪ Conduct educational drought and water efficiency programs. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Coordinate with the Emergency Drinking Water Task Force ▪ Liaise with federal agencies and other partners to provide support for ranchers and farmers. ▪ Maintain the hay hotline and hay waiver information ▪ Maintain TDA website with current federal farmer and rancher assistance information. ▪ Administer Community Development Block Grant (CDBG) funds for cities and counties named in a state or federal disaster declaration to obtain or fortify existing sources of potable water. |

Texas Department of Housing and Community Affairs (TDHCA)

| Phase | TDHCA Responsibilities |
|----------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | Monitor and evaluate drought impacts on housing needs and rural areas across the state. |

Texas Department of Public Safety (TxDPS) - Texas Division of Emergency Management (TDEM)

| Phase | TDEM Responsibilities |
|----------------------------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Emergency Drinking Water Task Force Chair ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Chair ▪ Technical Assistance and Technology Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Facilitate monthly DPC meetings for information sharing amongst agencies. ▪ Publish monthly Situation Reports from the DPC on TDEM's website as a mechanism to supply timely and accurate assessments of drought impacts to state, local and federal partners and the whole community. ▪ Publish a Biennial Report to the State Legislature, due January 15th of every odd numbered year, relaying DPC activities and accomplishments. ▪ Provide outreach to local jurisdictions to share drought information via workshops, seminars and conferences. ▪ Network with local, state, federal and private partners to promulgate drought information sharing. ▪ Provide training and exercises as part of the state preparedness program focusing on the preparing of emergency management coordinators to respond to drought disasters. ▪ Coordinate with federal agencies as well as local and regional partners to develop drought planning and decision aids. ▪ Develop, maintain and distribute this annex. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Coordinate short-term, immediate responses to potential public water supply emergencies through the various emergency support functions as identified in the State Emergency Management Plan. ▪ Coordinate emergency drinking water response actions in locating alternate sources of water. ▪ Meet with local jurisdictions experiencing a potential water shortage emergency. ▪ Ensure federal agencies are kept current of the response situation. ▪ Organize public information, public outreach and drought |

| Phase | TDEM Responsibilities |
|-------|---|
| | <p>education incorporating the whole of community.</p> <ul style="list-style-type: none"> ▪ Participates in Joint Information Center (JIC) and Joint Information System (JIS) activities. ▪ Encourage all state entities to promote voluntary water conservation ▪ Coordinate with the Public Utilities Commission (PUC) and the Electric Reliability Council of Texas (ERCOT) to identify power susceptibilities due to water shortages. ▪ Notify and engage private sector partners of current drought conditions and assess drought impacts on critical infrastructure and key resources to develop strategic response planning. ▪ Compile categories of drought related costs for the State ▪ Administer governor declared Drought Disaster Proclamation Recommendations. |

Texas Department of State Health Services (DSHS)

| Phase | DSHS Responsibilities |
|----------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Formulate recommendations on water requirements for human consumption and general sanitation. ▪ Conduct surveillance for human health impacts from drought. ▪ Develop health risk reduction messages for distribution to the public. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Collaborate with TCEQ on water quality issues upon request. ▪ Monitor the operational status of health care facilities in impacted areas. |

Texas Department of Transportation (TxDOT)

| Phase | TxDOT Responsibilities |
|----------------------------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Conduct environmental impact analysis for transportation projects. ▪ Conduct erosion control activities for roadways and special projects. ▪ Monitor and reports on road conditions and projects due to drought conditions. |
| Response and | <ul style="list-style-type: none"> ▪ Repair and maintain state highways and infrastructure damaged |

| Phase | TxDOT Responsibilities |
|-----------------|--|
| Recovery | <p>by drought conditions.</p> <ul style="list-style-type: none"> ▪ Administer the mowing and bailing of hay on the right-of-way to support agriculture. ▪ Issue permits and waivers for overweight vehicles involved in responding to drought-related emergency situations. ▪ Issue emergency and regular utility permits and approve temporary waivers for above ground water lines as appropriate. ▪ Assist in finding methods for transporting and distributing water during periods of emergency. ▪ Provide support to maintain recovery activities for drought-related emergencies. ▪ Capture costs associated with losses from drought. ▪ Cease all non-emergency roadway maintenance operations requiring large quantities of water. |

Texas Military Forces (TXMF)

| Phase | TXMF Responsibilities |
|------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Planning and Coordinating Committee Member ▪ Coordinating Member |
| Response and Recovery | <p>Provide bulk water transportation and bulk water purification capability estimates to the state in response operations addressing water shortages in accordance with ESF 6 Mass Care.</p> |

Texas Parks and Wildlife Department (TPWD)

| Phase | TPWD Responsibilities |
|----------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member ▪ Technical Assistance and Technology Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Conduct routine freshwater and coastal habitat assessments to determine the status of commercially, recreationally, and ecologically important species; determine the success of on-going management strategies and develop new strategies. ▪ Investigate fish kills, pollution, and harmful algal blooms in well-coordinated efforts with other appropriate state and federal agencies. ▪ Monitor the condition of habitat and key wildlife species throughout the state. ▪ Provide guidance and information to landowners and the general public on best management tools to cope with drought conditions |

| Phase | TPWD Responsibilities |
|------------------------------|---|
| | and impacts on wildlife. |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Provide access via state parks and other department holdings to sources of water to meet the water demands of municipalities and other water users. ▪ Provide information via website and media releases on the effects of drought on fish and wildlife resources and outdoor recreational opportunities, tips on how to help wildlife during drought, the status of harmful algal blooms, and fishery-related health advisories and closures. ▪ Work with other agencies and academics in rescue and recovery efforts to provide refuge for species of concern that are threatened by conditions resulting from extreme drought, such as insufficient stream flow and loss of habitat. ▪ Develop plans for reintroduction of species once conditions become more favorable. ▪ Restocks sport fisheries as determined from results of fishery surveys. ▪ Provide access to water in state parks for use in fire control. |

Texas River Authorities

| Phase | Texas River Authorities Responsibilities |
|------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Planning and Coordinating Committee Member ▪ Coordinating Member |

Texas State Soil and Water Conservation Board (TSSWCB)

| Phase | TSSWCB Responsibilities |
|----------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Impact Assessment Committee Member ▪ Planning and Coordinating Committee Member |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Work with landowners, farmers, and ranchers to develop resource management plans that include water conservation and drought mitigation practices. ▪ Implement practices to increase irrigation efficiency through water quality and conservation programs. |
| Response and Recovery | Administer the Texas Water Supply Enhancement Program, through local soil and water conservation districts, to enhance state water resources. |

Texas Water Development Board (TWDB)

| Phase | TWDB Responsibilities |
|----------------------------------|--|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Emergency Drinking Water Task Force Member ▪ Impact Assessment Committee Member ▪ Monitoring and Water Supply Committee Chair ▪ Planning and Coordinating Committee Member ▪ Technical Assistance and Technology Committee C |
| Monitoring and Assessment | <ul style="list-style-type: none"> ▪ Publish current reservoir storage observations, drought indices information and forecasts available at: http://waterdatafortexas.org/reservoirs/statewide. ▪ Monitor and interpret hydrologic conditions, major water storage reservoirs and aquifers in the state using six indices ▪ Publish the monthly Texas Water Conditions Report available at: http://www.twdb.state.tx.us/surfacewater/conditions/report/index.asp |
| Response and Recovery | <ul style="list-style-type: none"> ▪ Provide financial and technical assistance to water suppliers. ▪ Assist with providing technical assistance to water utilities and water authorities. ▪ Provide loans and loan forgiveness to local entities for water supply projects, water quality projects, flood control projects, agricultural water conservation projects, and groundwater districts. ▪ Assist in identifying alternative sources, transportation, and distribution of water. ▪ Assist in conducting a needs assessment, determining appropriate methods for financing emergency drinking water operations, and researching and evaluating innovative water technologies. ▪ Provide financial assistance to plan, provide and conserve water resources through grants and loans for regional planning, water supply projects and agricultural water conservation programs. |

Texas Voluntary Organizations Active in Disasters (VOAD)

| Phase | VOAD Responsibilities |
|------------|---|
| All | <ul style="list-style-type: none"> ▪ Drought Preparedness Council ▪ Planning and Coordinating Committee Member ▪ Coordinating Member |

Authority

Strategic planning guidance and authorities governing the enactment and implementation of this annex are summarized below.

The following table presents specific sources, their relevance to this document, and hyperlinks to their online location.

| Source | Relevance | Link |
|---|---|---|
| Texas Government Code Chapter 418.042 | Describes provisions to be kept current by TDEM in the comprehensive state emergency management plan. | http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.418.htm#418.050 |
| Texas Water Code Title 2. Water Administration Subtitle C. Water development | Directs TDEM, through the State Drought Manager, and the drought preparedness council to develop and implement a comprehensive state drought preparedness plan for mitigating the effects of drought in the state and periodically update the plan. The plan is to be separate from the State Water Plan. | http://www.statutes.legis.state.tx.us/Docs/WA/htm/WA.16.htm |
| House Bill 2660 | Establishes the State Drought Preparedness Council, designates the state agencies that serve on the council, names the chief of TDEM as the state drought manager and outlines the overall responsibilities of the council. | http://www.legis.state.tx.us/tlodocs/76R/analysis/html/HB02660E.htm |
| SB 662 | Identifies the members of the Drought Preparedness Council. | http://www.legis.state.tx.us/tlodocs/83R/analysis/html/SB00662I.HTM |

Record of Changes

This section describes changes made to this document: when they were made, what they were and who authorized them.

TDEM authorizes and issues changes to this document until such time as it is superseded. This document and all attachments are living documents. Council member representatives are responsible for participating in plan reviews and are required to provide information concerning capability changes that impact their emergency management responsibilities. TDEM coordinates the plan updating process and maintains the plan after receiving feedback and updates from partner agencies.

Lead and support agencies must ensure all records necessary for emergency management operations are obtainable and that duplicate records are held at alternate locations.

Use this table to record the following information:

- Change number, in sequence, beginning with 1
- Date change was made to the document
- Description of change and rationale if applicable
- Initials of person who made the change

| Number | Date | Description | Initials |
|--------|----------|---|----------|
| 1 | 12/15/16 | Removed references to Attachment 1. | WP |
| 2 | 12/19/16 | Updated introduction page, cover, added new assumptions, deleted the "Using this Document" section, deleted the preface page, added new introduction page, added new paragraph into CONOPS, added new language to the "exhausted all resources", deleted the Maintenance Page, deleted the Reference Page and move appendices to the end of the document. | DA |
| 3 | 01/29/17 | Updated template style (color, title page, bullets). | DA |

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This section provides a list of organizations and individuals who contributed to the development of this document.

This annex could not have been developed without the participation and collaboration of representatives from multiple organizations.

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