Water for the People

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Drought Impact on Texas Surface Water
Based on USGS map issued June 30, 2015

Sources
NDMC
USDA
NOAA
TCEQ Office of Water

Drought Severity Index
- Nothing
- D0 - Abnormally Dry
- D1 - Drought - Moderate
- D2 - Drought - Severe
- D3 - Drought - Extreme
- D4 - Drought - Exceptional

Drought Monitor Dataset developed by the National Drought Mitigation Center (NDMC) and U.S. Department of Agriculture (USDA) and National Oceanic & Atmospheric Administration (NOAA)
Overview

- The State’s Long-Range Planning Process for Public Water Suppliers
- Impacts of the Drought on Water Supply
- New Drought Management Regulation
- New Financing Tools for Funding Water Supply Projects
Statewide Population Growth

![Bar chart showing historical and projected population growth in Texas from 1900 to 2060. The chart indicates a steady increase in population over time, with a significantly higher projected growth rate in the later years.]
State Water Plan

- Regional water planning was established in 1997 by Senate Bill 1
- State Water Plan is developed every 5 years by 16 Regional Water Groups
- Each Regional Water Plan assesses the projected 50-year demand of water supply in a region and identifies strategies to meet those demands
- Water use in Texas is projected to grow from 18 million acre-feet per year in 2010, to 22 million acre-feet per year in 2060
2012 SWP Recommended Water Management Strategies
Projected Water Demand by Type of Use
Water Management Strategies per 2012 SWP

- Water conservation
- Surface water strategies
- Groundwater supply strategies
- Water reuse strategies
- Other strategies
Water Conservation Strategies

Focus on efficiency of use and reduction of demands on existing water supplies

- Water-efficient appliances
- Public education programs
- Increased water efficiency in daily activities
- Limit turf/lawn irrigation
Impact of Conservation on Water Supplies

- Statewide, municipal conservation strategies are expected to result in approximately 650,000 acre-feet of “new” supply by 2060.

- Statewide, irrigation and other conservation strategies are projected to result in approximately 1.5 million acre-feet per year of additional supply by 2060.
Surface Water Strategies

- Proposed stream diversions
- New reservoirs
  - 26 new reservoirs recommended in 2012 SWP
  - Two permits issued by TCEQ in past two years
- New or expanded contracts and connection of currently developed supplies
- Operational changes in surface water management
Groundwater Strategies

Groundwater supply sources:

- New freshwater wells
- Increased production from existing wells
- Temporarily overdrafting aquifers to supplement supplies
- Desalination of brackish groundwater

These strategies are anticipated to add up to about 800,000 additional acre-feet per year by 2060
**Water Reuse Strategies**

**Direct Reuse**
- Treated effluent that never reaches a state watercourse – flange to flange
- Primarily used for irrigation and industrial supply

**Indirect Reuse**
- Treated effluent that is discharged into a state watercourse and then diverted downstream for reuse
- This water often treated and used for drinking water supplies
Other Strategies

- Conjunctive use of groundwater and surface water
- Weather modification
- Aquifer storage and recovery “ASR”
- Brush control
- Desalination
- Operational Changes/System Operations
The central role of drought management is to ensure the uninterrupted supply of water in an amount sufficient to satisfy essential human needs.
The Legislature has required all public water suppliers to adopt and implement drought contingency plans consistent with their approved regional water plans.
Drought Impacts on Groundwater Supply

- Finite resource
  Slow aquifer recharge rate

- Increased regulation
  Creation of new groundwater districts

- Desired future conditions designation
  Mandated by Texas Water Code Ch. 36
Water Use Restrictions

Locations of PWS systems enforcing water use restrictions because of drought

Total number of Community water systems affected: 1,118
Total number of active Community water systems in Texas: 4,630

Resolved: A public water supply that has corrected production capacity deficiencies, or drought conditions for mandatory water use restrictions have alleviated.

Watch - Voluntary: A public water supply that has reported problems with high water usage and production, but has not suffered a loss of distribution system pressure. Voluntary water use restrictions have been implemented.

Watch - Mandatory: A public water supply that has reported problems with high water usage and production, but has not suffered a loss of distribution system pressure. Mandatory water use restrictions have been implemented.
Economic Impacts of Water Shortages

The 2012 State Water Plan notes the impacts of failure to address projected water needs:

- Annual economic losses from not meeting water supply needs could result in a reduction in income across the State of approximately $11.9 billion annually.

- Failure to meet the State’s need for water could cost Texas businesses and employees as much as $115.7 billion annually by 2060, with over a million lost jobs.
Projections for Future Water Supply

By following the identified strategies in the 2012 State Water Plan, by 2060 the anticipated annual water supply would increase significantly:

- Municipal conservation – 650,000 acre-feet
- Groundwater strategies – 800,000 acre-feet
- Build all reservoir projects – 1.5 million acre-feet
- Implement surface water strategies – 3 million acre-feet
Regulatory Drought Management Tools

- TCEQ’s Recent Drought Rules
- Doctrine of Prior Appropriation
- Texas Water Code § 11.053 and the Drought Rules
- The Appeal of Texas Farm Bureau v. TCEQ
Prior Appropriation

“First in time is first in right”

Senior water right holders are given preference to water over holders of rights who received their water rights later in time
The rules adopted in 2012 provide TCEQ with the authority to:

- temporarily suspend or adjust water rights during a drought or emergency shortage of water in order to allow a senior water rights holder to obtain water

- exclude certain junior priority water rights users from curtailment or suspension orders when, in the judgment of TCEQ, such exclusion is necessary to protect human health and safety
The Legislature authorized TCEQ to temporarily suspend or adjust water rights during periods of drought, under specific limitations.

**Texas Water Code § 11.053**

The Drought Rules

Allow TCEQ to enforce a senior “call” on surface water against junior users upstream, while exempting from curtailment cities, other public water suppliers, and power generators who hold junior rights.
In 2012, Dow made a call due to low flows in the Brazos River. TCEQ issued an order suspending upstream diversions, but exempted certain municipal and power generation junior rights from the call.

The Texas Farm Bureau and others filed suit seeking a judgment that the Drought Rules were invalid.

The courts (so far) ruled that the Drought Rules violated the priority rights of senior water rights holders.
Appeal of Texas Farm Bureau v. TCEQ

TCEQ appealed, but the 13th Court of Appeals affirmed the judgment of the District Court that declared the Drought Rules invalid.

The Court held that TCEQ lacked authority to adopt its Drought Rules through either TWC § 11.053 or its police powers and general authority.

TCEQ has filed notice of appeal to the Texas Supreme Court.
Financing Tools for Water Supply Projects

In 2013, the 83rd Legislature passed House Bill 4

- Restructured the Texas Water Development Board
- Created State Water Implementation Fund (SWIFT) to fund and implement the State Water Plan
- $27 billion for SWP water supply projects
- Not less than 20% of SWIFT financial assistance to fund water conservation and reuse projects
- 10% of funds for projects in agricultural areas
Questions?

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