The 2017 State Water Plan & Joint Groundwater Planning

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Updated July, 2016
The following presentation is based upon professional research and analysis within the scope of the Texas Water Development Board’s statutory responsibilities and priorities but, unless specifically noted, does not necessarily reflect official Board positions or decisions.
State water planning

1961

1968

1984

1990

1992

1997

2002

2007

2012

“top down”

“bottom up”

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Why do we plan?
Planning (in a nutshell)

• How much are we going to need?
• How much do we have now?
• Do we have enough?
• If we don’t, what do we need to do to get more?
• How much will it cost?
Regional water planning process

**Statutory interests:**
- Public
- Counties
- Municipalities
- Industries
- Agriculture
- Environment
- Small businesses
- Electric-generating utilities
- River authorities
- Water districts
- Water utilities
- Groundwater management areas
How do we plan?

- Project future population and water demand
- Quantify existing water supplies
- Identify surpluses and needs (potential shortages)
- Evaluate and recommend water management strategies
- Make policy recommendations
- Adopt the plan
- Prioritize recommended projects
Projected Texas population (millions)
Projected population growth in Texas counties
Water Demands
Water Supply

• To meet water demands:
  – Water Availability
  – Existing Water Supply

• Surface water supply
  – Water availability models

• Groundwater supply
  – Joint groundwater planning
Desired Future Conditions

• The desired, quantified condition of groundwater resources (such as water levels, water quality, spring flows, or volumes) at a specified time or times in the future or in perpetuity.

• For “relevant” aquifers

• Broad Policy Goal
  – Drawdown (most)
  – Spring flow (a few)
  – Storage volumes (High Plains)

• Updated at least every 5 years (due in 2016)
Resulting Groundwater Availability

Policy + Science = Groundwater Availability

Desired Future Conditions + GAM or other tool = Modeled Available Groundwater

Goal: informed decisions
Projected water demand vs existing water supplies (millions of acre-feet)
Projected water demand vs existing water supplies
(millions of acre-feet)
Projected water demand vs existing water supplies
(millions of acre-feet)

(demand met by existing supply)

need
Water needs (potential shortages) by water use category (acre-feet)
Recommended water management strategies (millions of acre-feet)

- 2020: 3.4
- 2030: 4.6
- 2040: 6.0
- 2050: 6.8
- 2060: 7.6
- 2070: 8.5

Water supply
Demand management
Strategies by water resource in 2070

- Demand management: 30.3%
- Reuse: 14.2%
- Groundwater: 9.6%
- Seawater: 1.4%
- Surface water: 44.5%
Share of strategies by type in 2070

- Other surface water: 30.5%
- Irrigation conservation: 15.7%
- New major reservoir: 13.0%
- Municipal conservation: 9.6%
- Indirect reuse: 7.6%
- Groundwater wells & other: 7.4%
- Other direct reuse: 4.4%
- Other conservation: 2.4%
- Drought management: 2.7%
- Aquifer storage & recovery: 1.8%
- Seawater desalination: 1.4%
- Groundwater desalination: 1.3%
- Direct potable reuse: 1.0%
- Conjunctive use: 0.8%
- Other strategies: 0.6%
- Other strategies: 0.6%

Categories: Demand management, Water supply
Cost of not implementing the plan

$73 billion lost annual income - 2020

$151 billion lost annual income - 2070

lost jobs: 424,000 - 2020

lost jobs: 1.3 million - 2070
Strategies, projects, and cost of the plan

5,500 strategies

2,500 projects

Capital cost of $63 billion
State water plan database and the interactive state water plan website
January 23-25, 2017
AT&T Conference Center,
Austin, Texas
Hosted by the TWDB

WaterForTexas.twdb.texas.gov