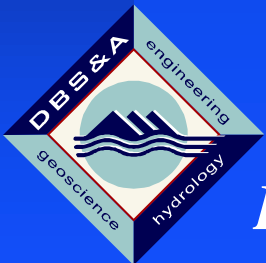


# *“GMA 12 DFC Panel”*

*Andrew Donnelly*

*Senior Hydrogeologist*

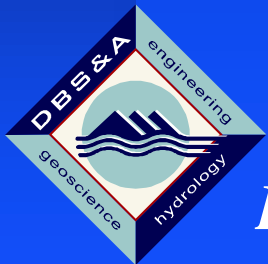
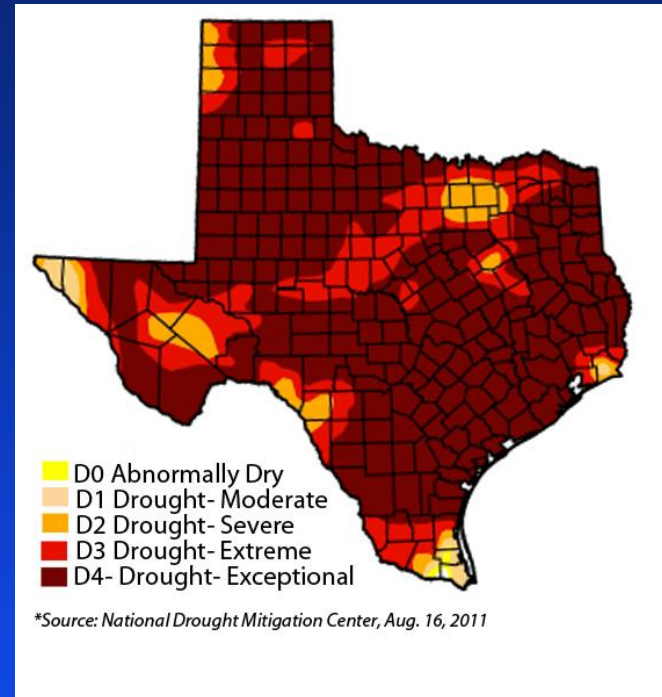
*Daniel B. Stephens and Associates*



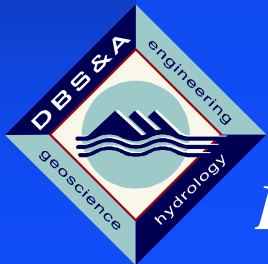
*Daniel B. Stephens & Associates, Inc.*

# Water Planning

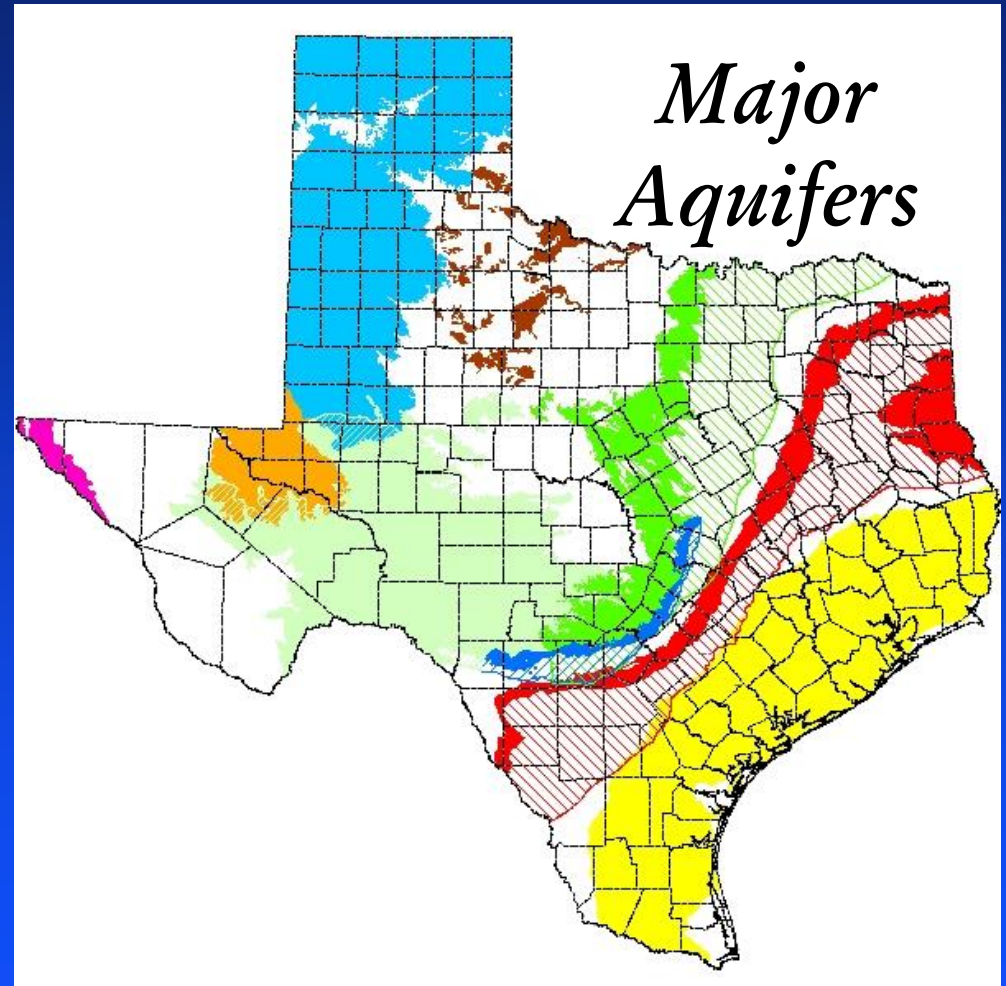
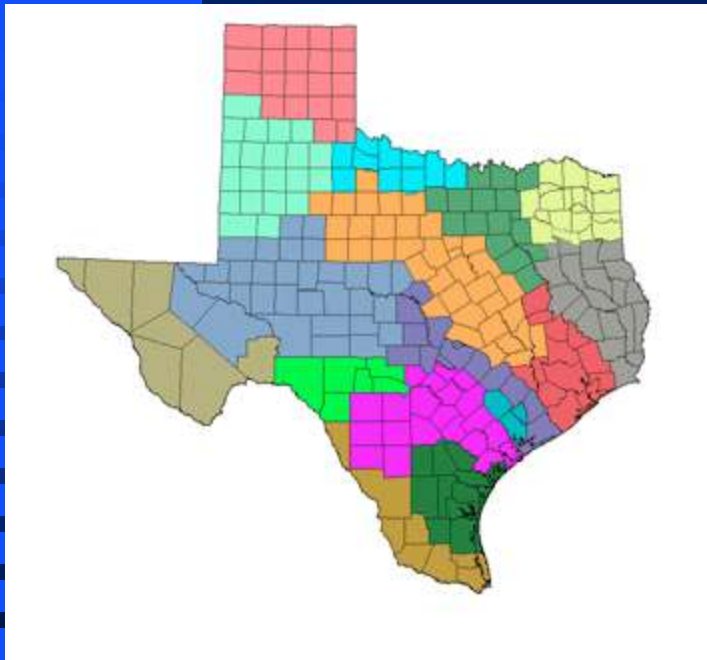
- The TWDB was created in response to the drought of the 1950s and in recognition of the need to plan for the future
- In 1997, a new regional water planning (RWP) process was implemented
- Texas divided up into 16 regions to conduct regional water planning studies



*Daniel B. Stephens & Associates, Inc.*



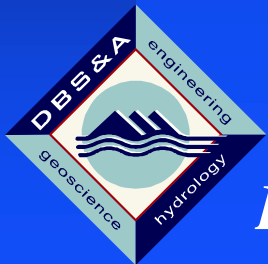
*Daniel B. Stephens & Associates, Inc.*



*Daniel B. Stephens & Associates, Inc.*

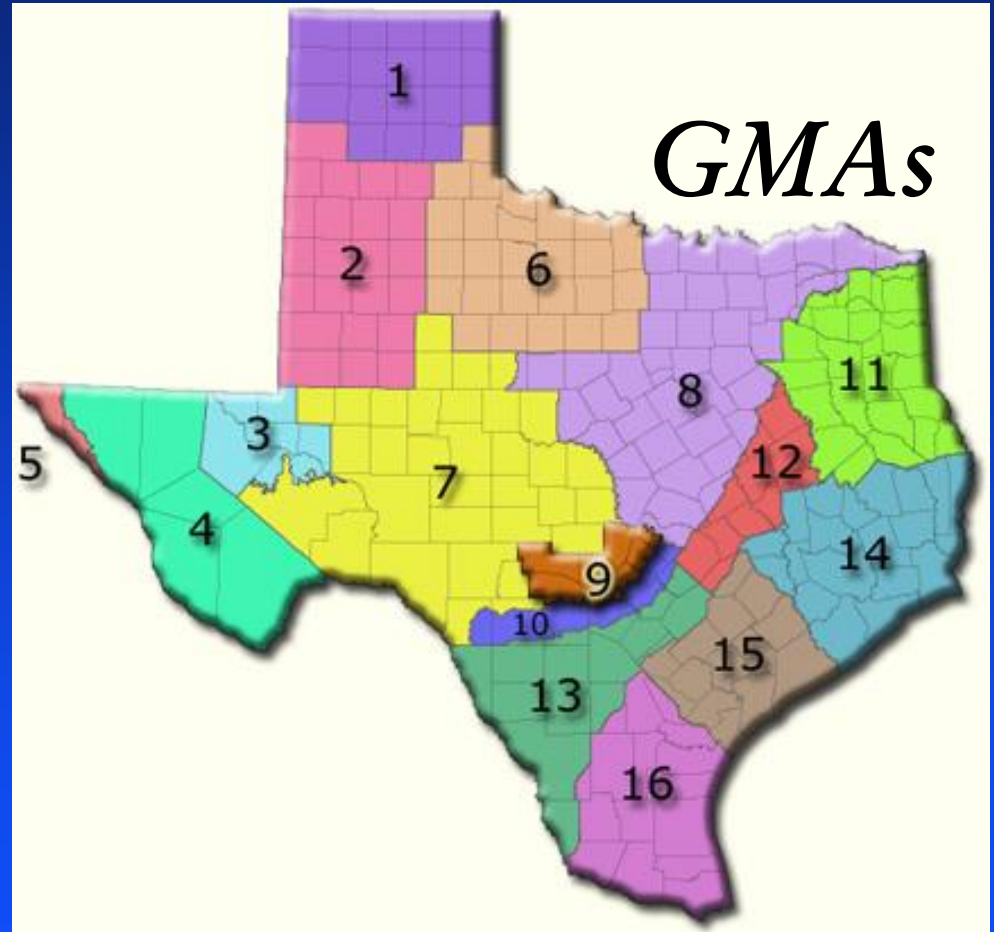
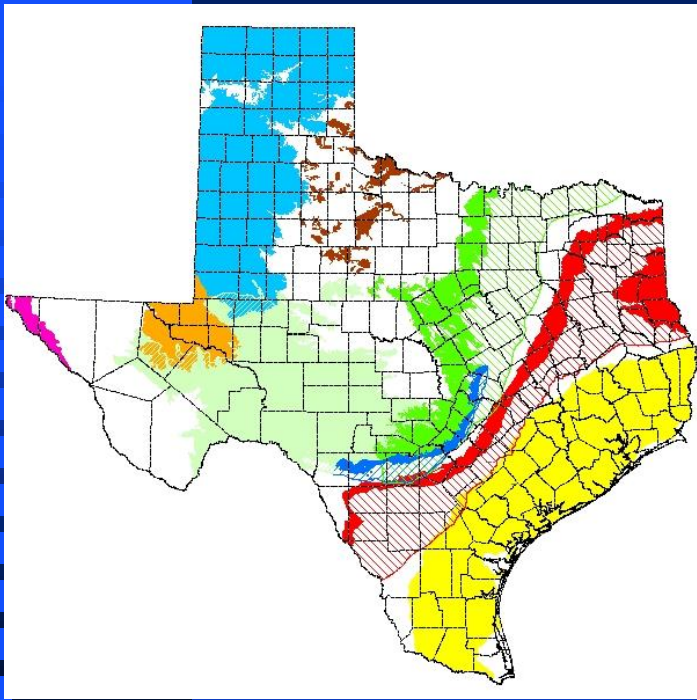
# *Groundwater Joint Planning*

- Water is critical to Texas. Groundwater has historically been 50%+ of water used in the state
- Aquifers don't honor geopolitical boundaries
- What you do impacts your neighbors
- Joint planning from a groundwater perspective was viewed as necessary
- Texas divided up into 16 areas for the purpose of groundwater planning

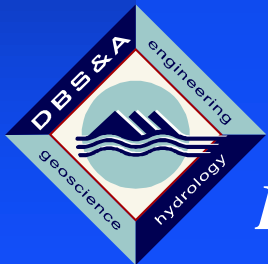


*Daniel B. Stephens & Associates, Inc.*





*GMA's*



*Daniel B. Stephens & Associates, Inc.*

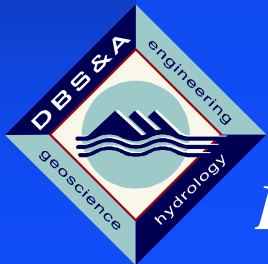
# *Groundwater Joint Planning*

- Regionalizes decisions made regarding groundwater
- Groundwater conservation districts are in charge
- District decisions on availability of groundwater must be used in RWP process
- Establish permitting targets through the process



*Daniel B. Stephens & Associates, Inc.*

*“A GMA, which is made up of GCDs, may use a GAM to determine DFCs, which the TWDB will then use to calculate MAGs.”*



*Daniel B. Stephens & Associates, Inc.*



# *Acronyms, Acronyms, Acronyms...*

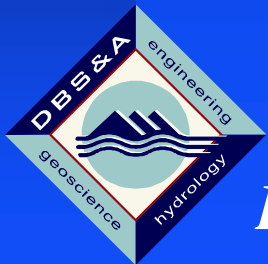
- GCD- Groundwater Conservation District
- GMA- Groundwater Management Area
- GAM- Groundwater Availability Model
- MAG- Modeled Available Groundwater
- DFC- Desired Future Condition



*Daniel B. Stephens & Associates, Inc.*

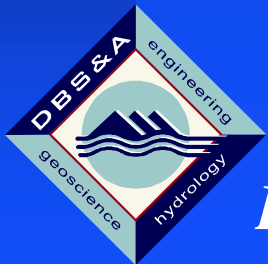
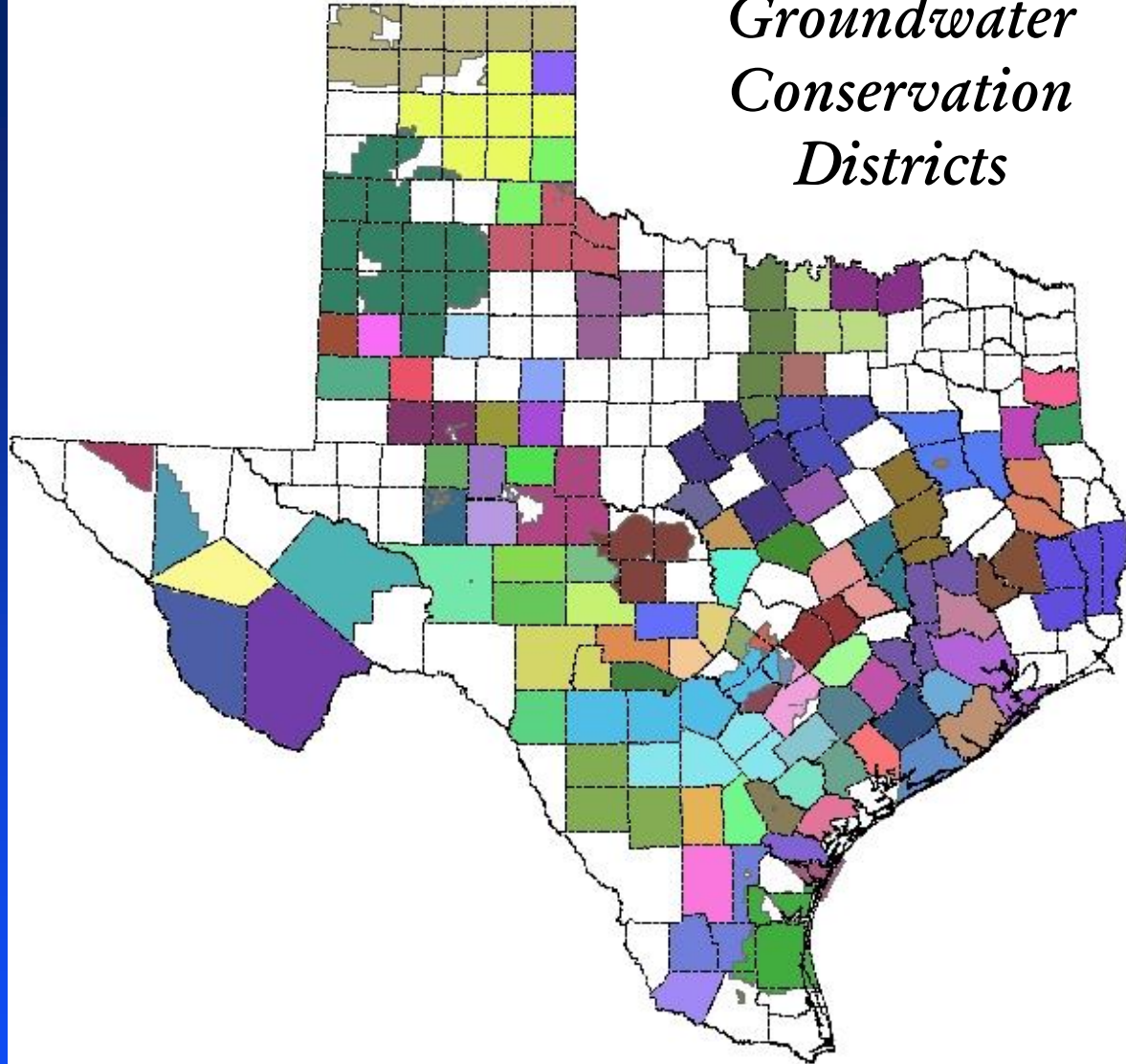
# *GCD*

- **G**roundwater **C**onservation **D**istrict (“Districts”)
- Local entity managing groundwater resources
  - ◆ Post Oak Savannah GCD
  - ◆ Lost Pines GCD
  - ◆ Brazos Valley GCD
  - ◆ Mid-East Texas GCD
  - ◆ Fayette County GCD
- Have a management plan and enact rules to manage groundwater



*Daniel B. Stephens & Associates, Inc.*

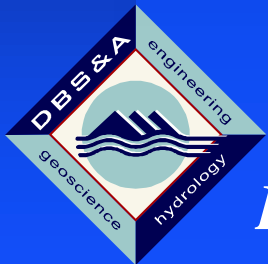
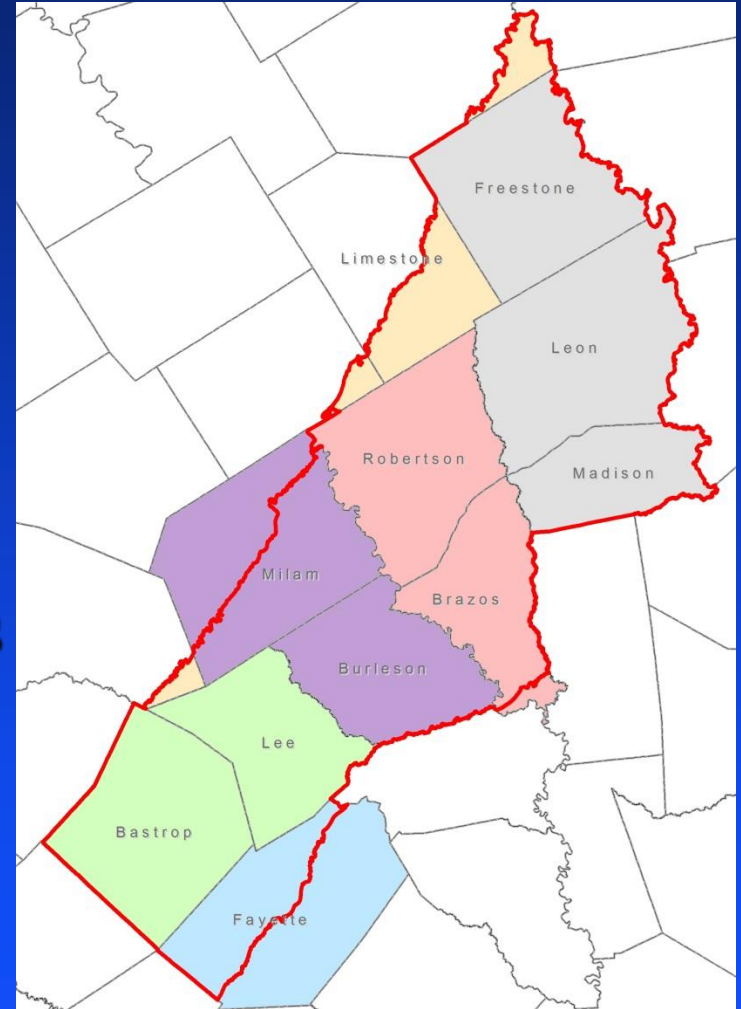
# *Groundwater Conservation Districts*



*Daniel B. Stephens & Associates, Inc.*

# GMA

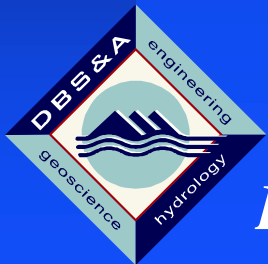
- Groundwater Management Area
- 16 GMAs in Texas
- GMAs are composed of groundwater conservation districts
- Makes the regional decisions regarding groundwater management goals



*Daniel B. Stephens & Associates, Inc.*

# *DFCs*

- **D**esired **F**uture **C**ondition
- What the GMA wants the aquifer to “look like” in the future
- Can relate to water levels, discharge to springs/rivers, water in storage, etc.
- Typically related to a condition 50 years in the future
- Readopted/revised every five years

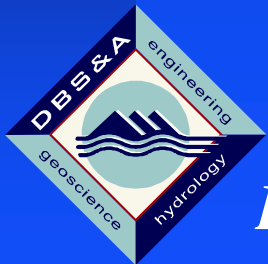


*Daniel B. Stephens & Associates, Inc.*



# MAG

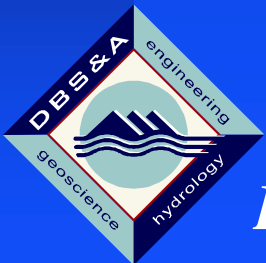
- Modeled Available Groundwater
- Essentially the “availability” of water from an aquifer (i.e. pumpage)
- Basically, if you want your aquifer to look like the DFC in the future, how much can you pump in order to get there?
- Calculations will be made or verified by TWDB staff



*Daniel B. Stephens & Associates, Inc.*

# *GAM*

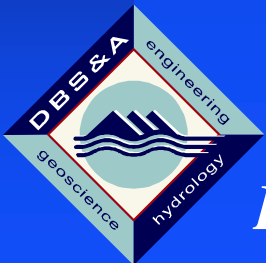
- Groundwater Availability Model
- TWDB program
- Regional-scale groundwater assessment models
- Allows for predictions of future conditions to be made
- Used by the TWDB to calculate MAGs



*Daniel B. Stephens & Associates, Inc.*

# *Recent Changes*

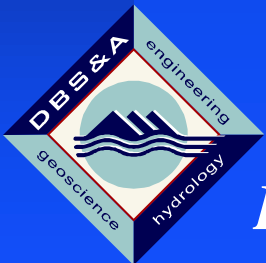
- Modified DFC development process
- Required several factors be considered during the development of DFCs
- Specified that DFCs must provide a balance between production and conservation
- Changed the process of incorporating comments into the DFC process



*Daniel B. Stephens & Associates, Inc.*

# *TWC Section 36.108 (d)*

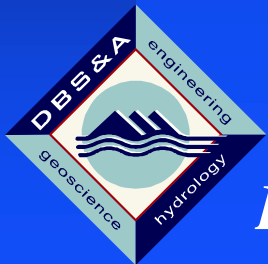
- Before voting on the proposed desired future conditions ... the districts shall consider:
  - Aquifer uses and conditions
  - Needs and strategies
  - Hydrologic conditions
  - Environmental impacts
  - Subsidence
  - Socioeconomic impacts
  - Private property rights
  - Feasibility
  - Anything else



*Daniel B. Stephens & Associates, Inc.*

# *TWC Section 36.108 (d-2)*

- The desired future conditions ... must provide a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater ... in the management area.



*Daniel B. Stephens & Associates, Inc.*