

Discussion of “MAG Peak Factor” and Possible Considerations in Texas State Water Planning



Presented to
Post Oak Savannah GCD Board of Directors
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By Gary Westbrook, POSGCD General Manager
Office: 512-455-9900
Cell: 979-571-5761
[Email: gwestbrook@posgcd.org](mailto:gwestbrook@posgcd.org)
[Website: www.posgcd.org](http://www.posgcd.org)

Serving the citizens of Milam and Burleson Counties

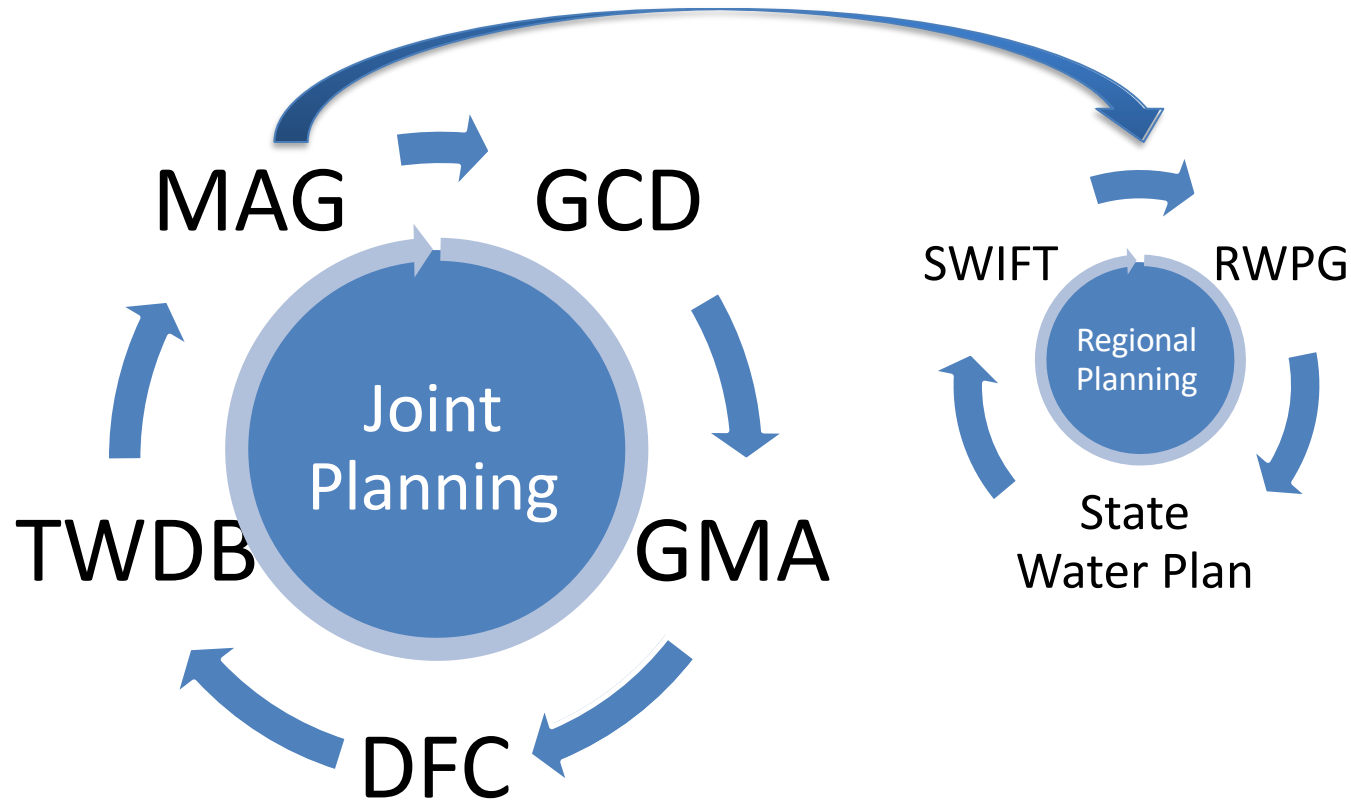
Purpose of the Texas State Water Plan

“To ensure the ongoing vitality of our economy, Texas’ citizens, water experts, and government agencies collaborate in a comprehensive water planning process. We plan so that Texans will have enough water in the future to sustain our cities and rural communities, our farms and ranches, and our homes and businesses while also preserving the agricultural and natural resources that have defined Texas for generations.” - *2017 Texas State Water Plan*

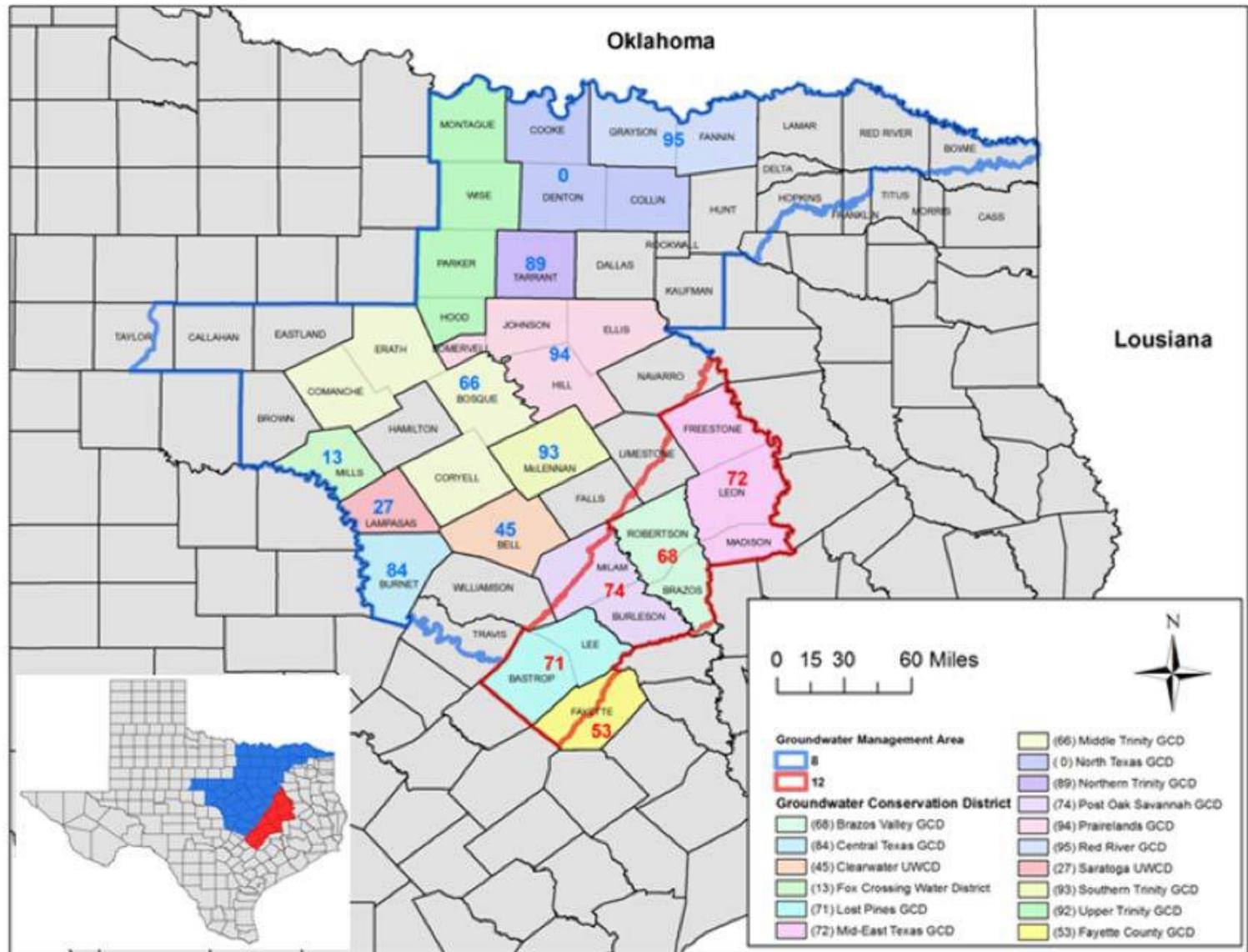
List of Acronyms

- **GCD- Groundwater Conservation District**
- **GMA- Groundwater Management Area**
- **DFC- Desired Future Condition**
- **TWDB- Texas Water Development Board**
- **MAG- Modeled Available Groundwater**
- **RWPG- Regional Water Planning Group**
- **SWIFT- State Water Implementation Fund for Texas**

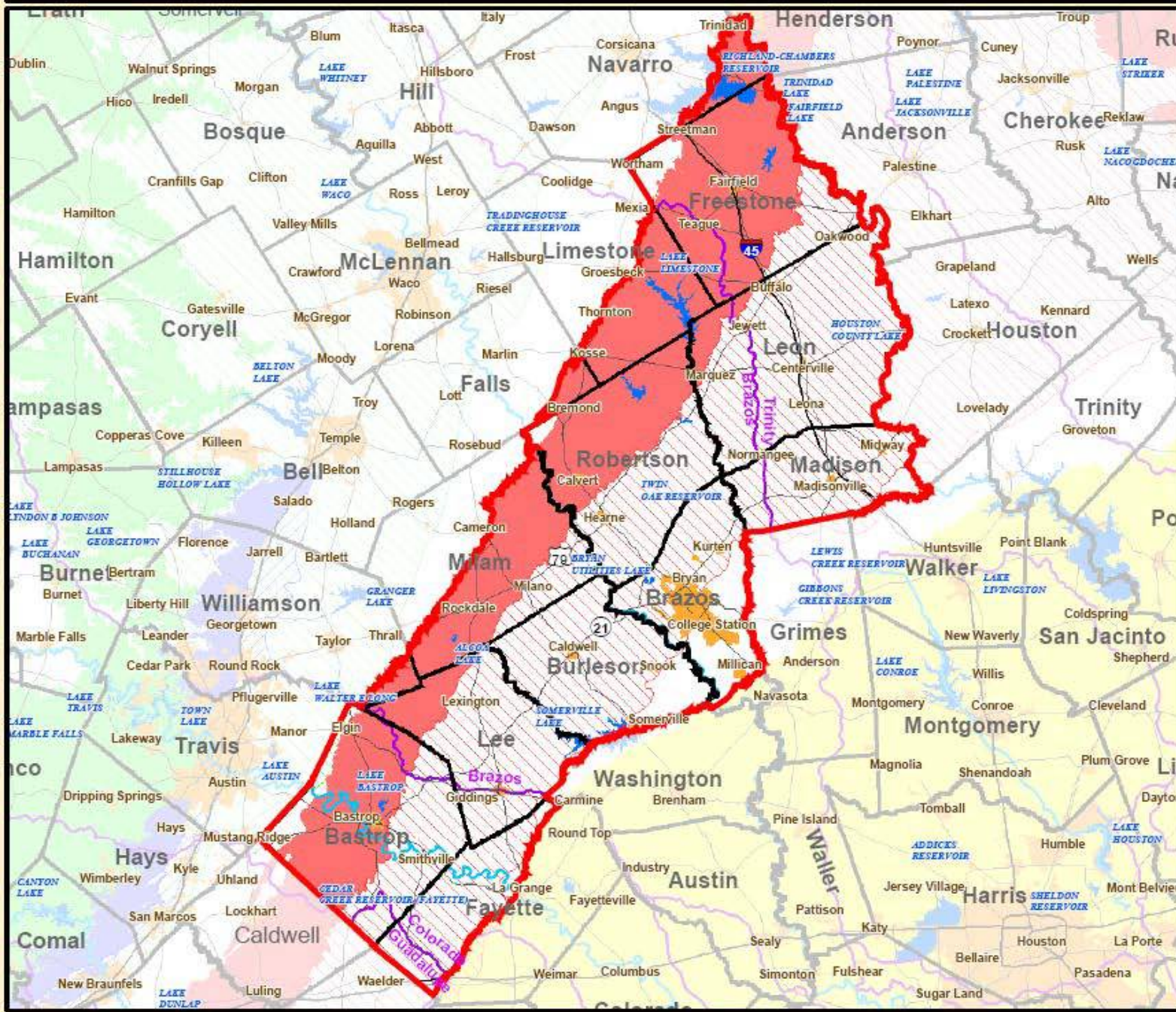
Two Separate & Very Different Processes- Regulation of GCDs vs. Planning of the State



Groundwater Management Areas 8 and 12



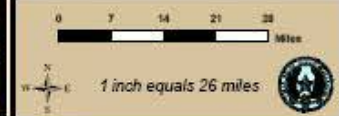
Groundwater Management Area #12

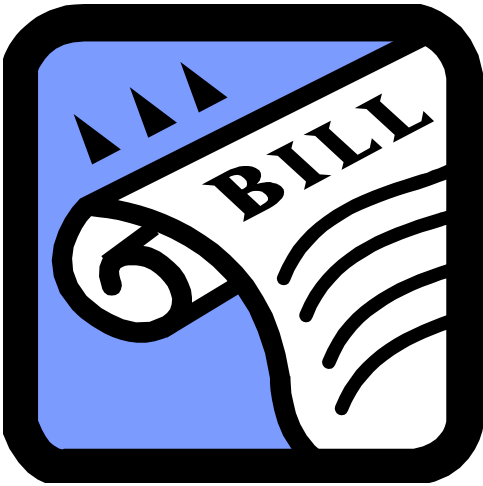


MAP LEGEND

- GMA #12
- River
- River Basin
- Reservoir
- Cities
- Counties
- Major Aquifers**
 - Cenozoic Pecos Alluvium
 - Seymour
 - Gulf Coast
 - Carrizo - Wilcox (outcrop)
 - Carrizo - Wilcox (down dip)
 - Hueco - Mesilla Bolson
 - Ogallala
 - Edwards - Trinity Plateau (outcrop)
 - Edwards - Trinity Plateau (down dip)
 - Edwards BFZ (outcrop)
 - Edwards BFZ (down dip)
 - Trinity (outcrop)
 - Trinity (down dip)

DISCLAIMER
No claims are made to the accuracy or completeness of the data nor to its suitability for a particular use. The scale and compilation of all information shown here is approximate.
Map prepared by Mark Hayes
Texas Water Development Board
GIS Section
12/21/2005





Texas State Water Planning

- State Water Planning through 16 RWPGs
- Water demands determined from water users
- Groundwater Supplies determined by GCDs in 16 GMAs by adopting DFCs
- Surface Water Supplies determined by State
- RWPGs use available GW and SW Supply numbers for planning and recommended strategies

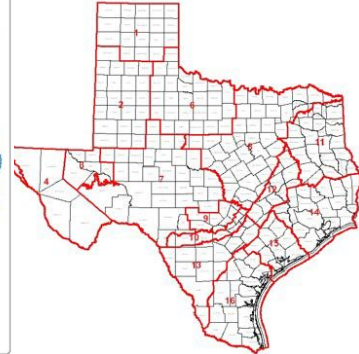
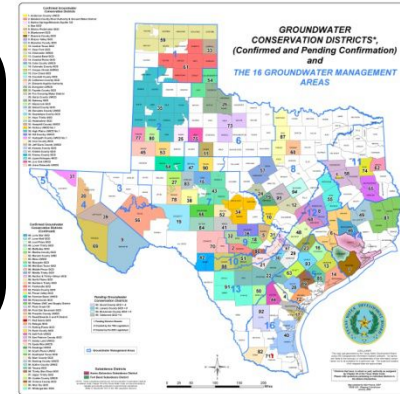
16 Regional Water Planning Groups



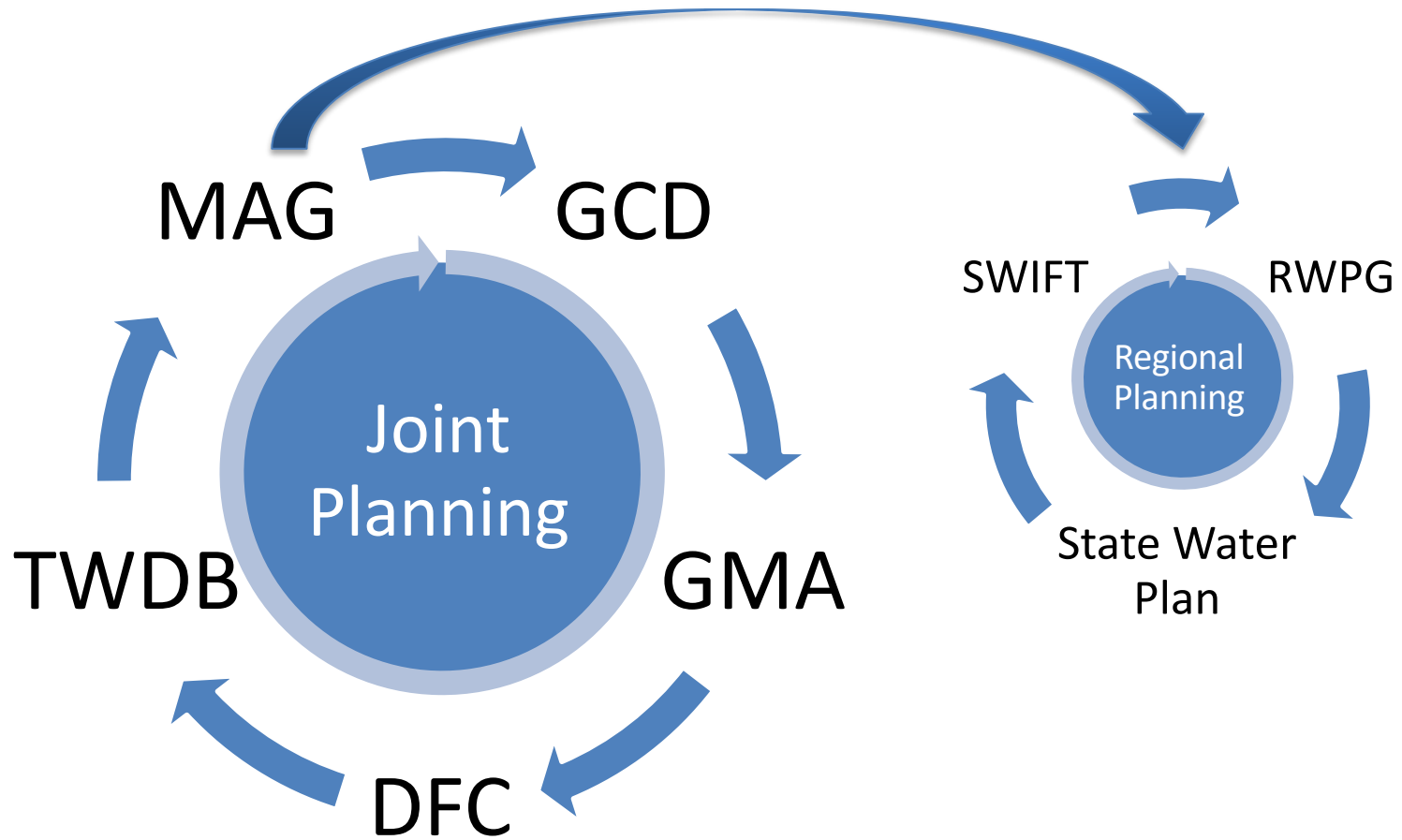
GCDs in GMAs
decide **Desired Future Conditions**
and deliver to TWDB

TWDB provides estimates
of **Modeled Available Groundwater**
to GCDs and RWPGs

GCDs and RWPGs include
Modeled Available Groundwater
in plans



Regional & Joint Planning



Science & Policy

MAG

Groundwater
Science



Physical
Expression of
Aquifer
Capacity

Aquifer Uses or
Conditions

State Water
Plan

Hydrological
Conditions

Private
Property Rights

Impacts on
Subsidence

Socioeconomic
Impacts

Feasibility of
achieving DFC

Any other
relevant
information

Environmental
Impacts

DFC

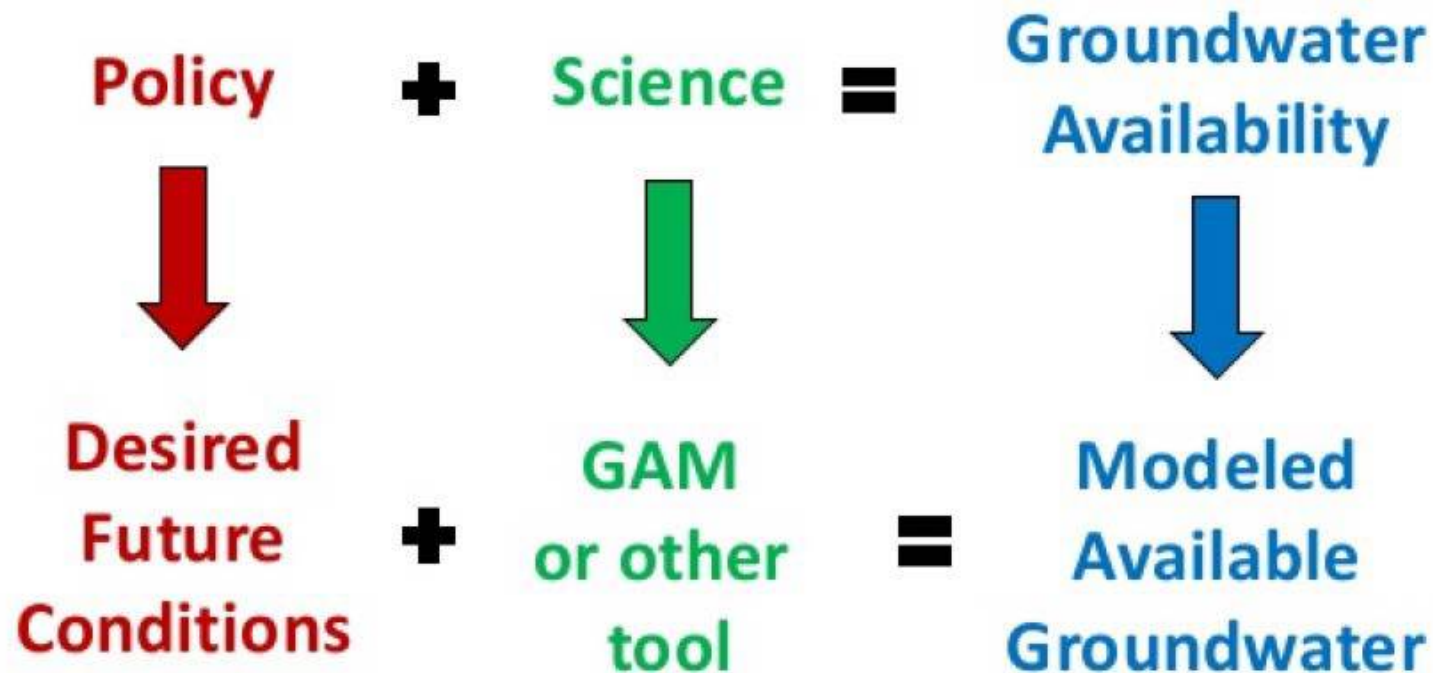
Groundwater
Policy



Policy Decision
of Aquifer
Conditions



What is Groundwater Availability?



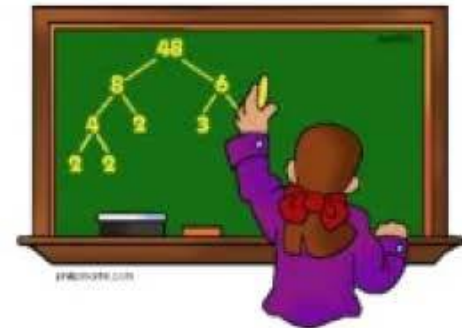
Goal: informed decision-making

Desired Future Condition

- The desired, quantified condition of groundwater resources
 - water levels, water quality, spring flows, or volumes)
 - at a specified time or times in the future or in perpetuity.
- For “relevant” aquifers (Major and Minor aquifers)
- Broad Policy Goal
 - Drawdown (most)
 - Spring flow (a few)
 - Storage volumes (High Plains, Llano Uplift)
- Updated at least every 5 years (propose by May 1, 2021, final adoption by January 5, 2022)

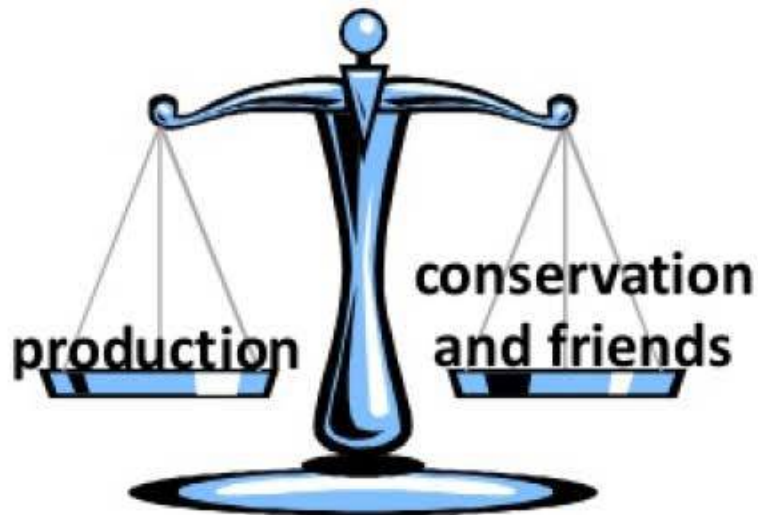
The “Factors”

- Uses & conditions
- State water plan
- Hydrologic conditions
- Environmental impacts
- Land subsidence
- Socioeconomics
- Property rights
- Feasibility
- Anything else

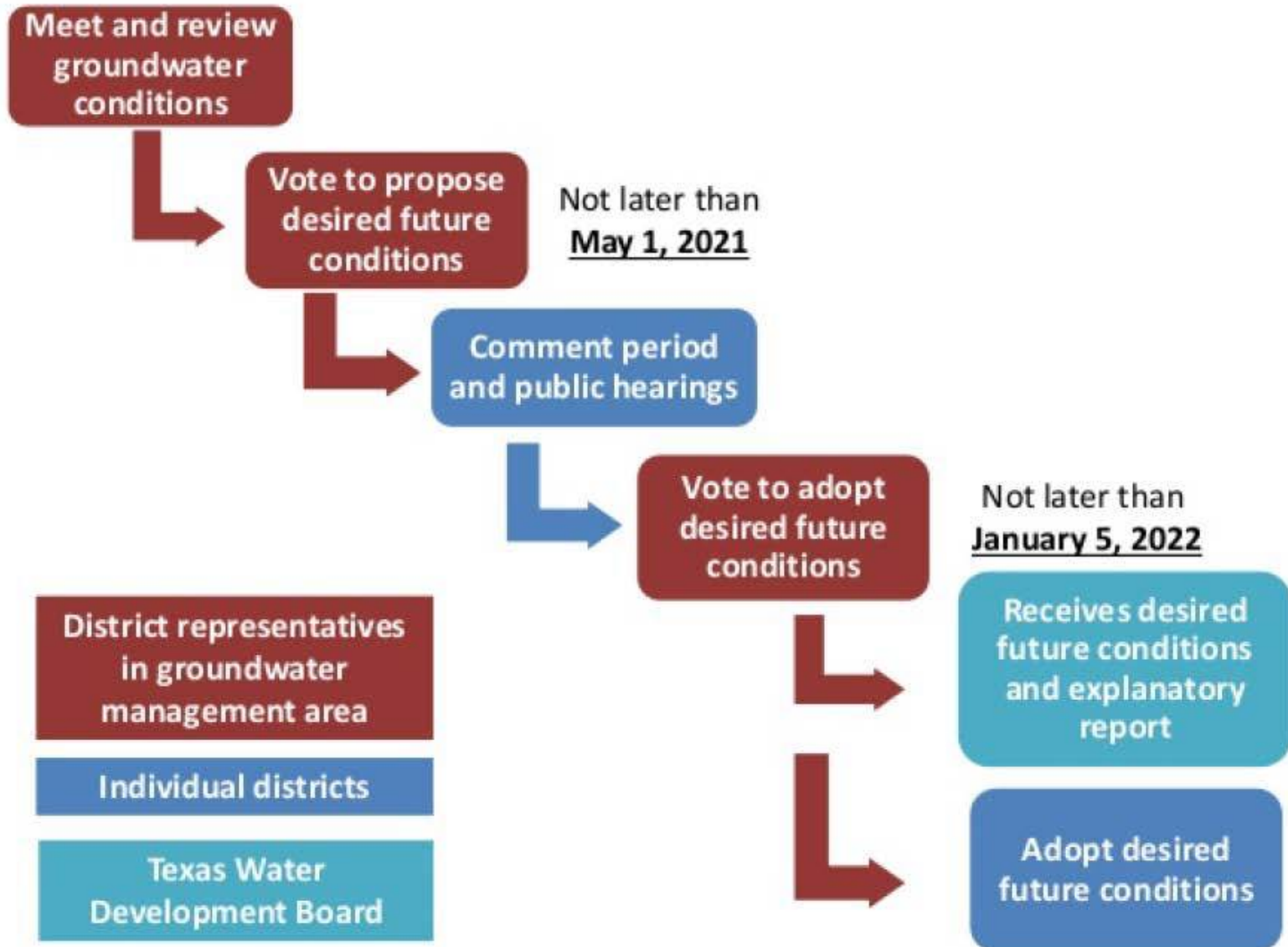


A balancing act

- Highest practicable level of groundwater production
- Conservation
- Preservation
- Protection
- Recharging
- Prevention of waste
- Control of subsidence



DESIRED FUTURE CONDITIONS: PROCESS TO ADOPT



Modeled Available Groundwater

- **Modeled available groundwater** represents the **total** amount of groundwater, including both **permitted** and **exempt** uses, that can be produced from the aquifer in an average year, that achieves a “**desired future condition.**”
- It is expressed as a rate – generally in acre-feet per year.

Modeled Available Groundwater and Permits (1 of 2)

- The amount of water may be produced on an average annual basis to achieve a desired future condition.
- Districts, to the extent possible, shall issue permits up to the point that the total volume of exempt and permitted groundwater production will achieve an applicable desired future condition.
- But also....not so simple! (next page)

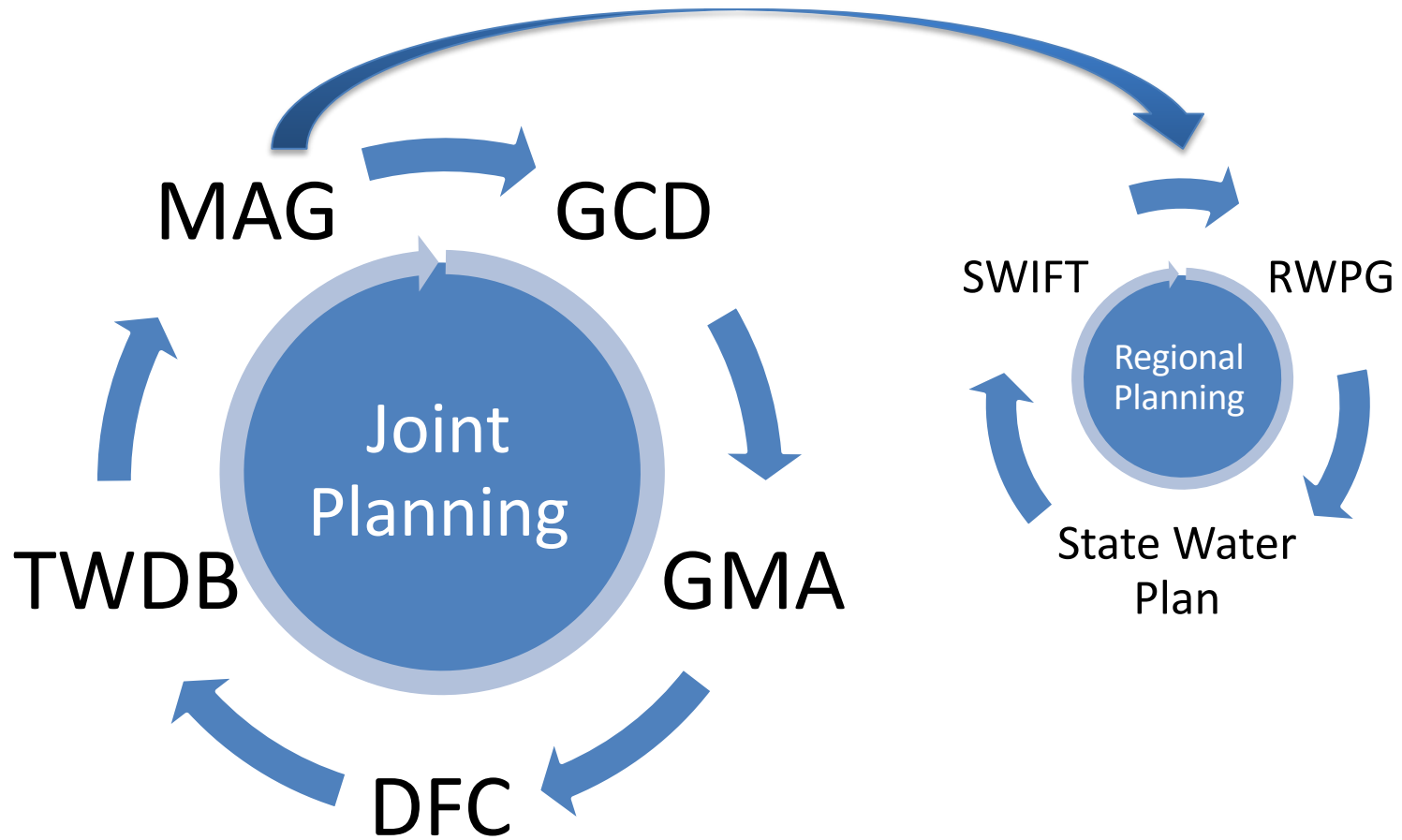
Modeled Available Groundwater and Permits (2 of 2)

- The district shall manage total groundwater production on a long-term basis to achieve an applicable desired future condition and consider:
 - Modeled available groundwater
 - Groundwater produced under exempt uses
 - Amount of groundwater previously permitted
 - Estimate of permitted groundwater that is actually produced
 - Yearly rainfall and groundwater production patterns.

Three points to consider:

1. Desired future conditions are an expression of local groundwater management.
2. Desired future conditions can be modified by districts to address improvements in data/science/technology and changing groundwater usage.
3. Districts are responsible for managing the groundwater resource to achieve the desired future condition

Regional & Joint Planning



Proceed to discussion of MAG Peak Factor by Brazos Region G

<http://www.brazosgwater.org/2018/2-7-2017-AgendaItem-6-1-MAGPeakFactor.pdf>

Questions?

Contact info:

Gary Westbrook

General Manager

Post Oak Savannah GCD

Phone: 512-455-9900

Fax: 512-455-9909

Email: gwestbrook@posgcd.org

Website: www.posgcd.org



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