Groundwater Management in Texas & Groundwater Conservation Districts

Leah Martinsson

V.G. Young School for
County Commissioners Courts

February 13, 2020

TAGD
TEXAS ALLIANCE OF
GROUNDWATER DISTRICTS

- Who is TAGD?
- Historical Perspective on Groundwater Management
- GCD Formation & Demographics
- GCD Powers & Responsibilities

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Who is TAGD?

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What does TAGD do?

- Conducts educational and technical training
- Tracks legislation, agency rulemaking, & policy discussions
- Serves as a resource for districts, the public, lawmakers, and state agencies
- Facilitates communication among GCDs
- Collects data on GCDs

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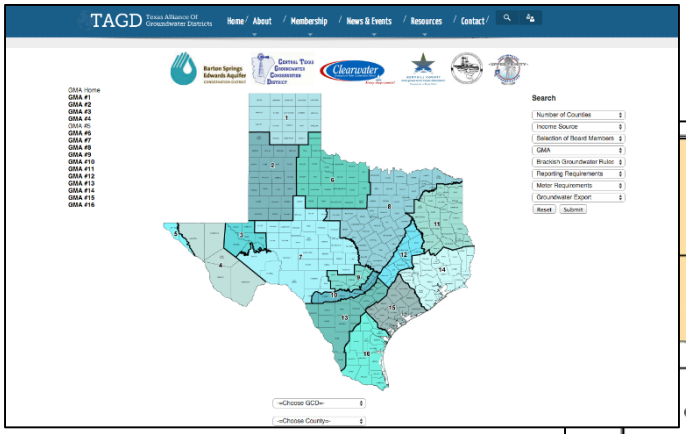
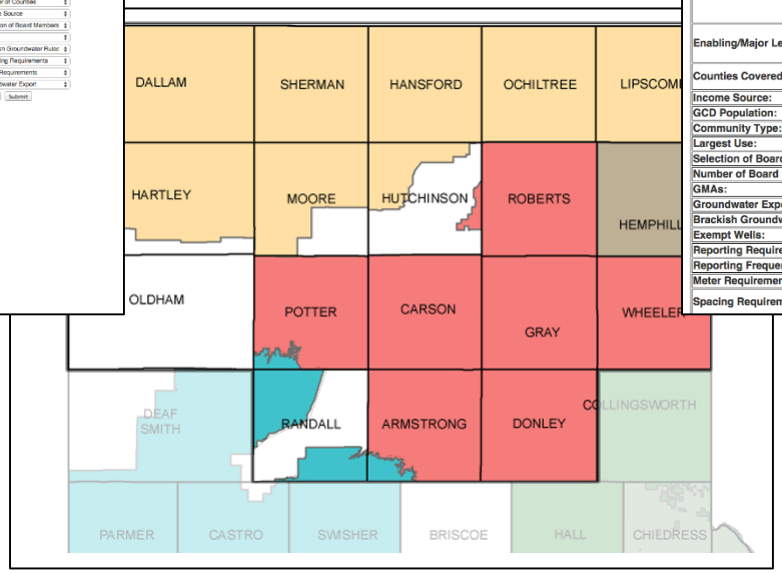
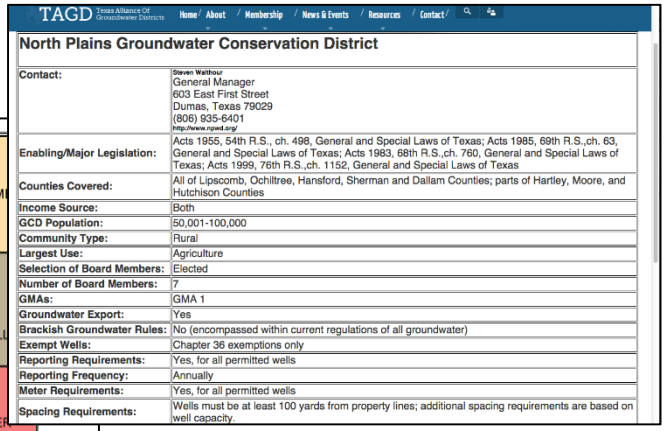
TAGD's GCD Index







North Plains Groundwater Conservation District

Contact:	Steven Walthour General Manager 603 East First Street Dumas, Texas 79029 (806) 935-6401 http://www.npwd.org/
Enabling/Major Legislation:	Acts 1955, 54th R.S., ch. 498, General and Special Laws of Texas; Acts 1985, 69th R.S.,ch. 63, General and Special Laws of Texas; Acts 1983, 68th R.S.,ch. 760, General and Special Laws of Texas; Acts 1999, 76th R.S.,ch. 1152, General and Special Laws of Texas
Counties Covered:	All of Lipscomb, Ochiltree, Hansford, Sherman and Dallam Counties; parts of Hartley, Moore, and Hutchison Counties
Income Source:	Both
GCD Population:	50,001-100,000
Community Type:	Rural
Largest Use:	Agriculture
Selection of Board Members:	Elected
Number of Board Members:	7
GMAs:	GMA 1
Groundwater Export:	Yes
Brackish Groundwater Rules:	No (encompassed within current regulations of all groundwater)
Exempt Wells:	Chapter 36 exemptions only
Reporting Requirements:	Yes, for all permitted wells
Reporting Frequency:	Annually
Meter Requirements:	Yes, for all permitted wells
Spacing Requirements:	Wells must be at least 100 yards from property lines; additional spacing requirements are based on well capacity.

www.texasgroundwater.org

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Groundwater Conservation Districts

FAQs

What is a Groundwater Conservation District?

GCDs are political subdivisions of the state created to protect and balance private groundwater interests with the conservation, preservation, protection, recharging, and prevention of waste of groundwater, and the control of subsidence caused by withdrawal.

What does a GCD do?

Establish rules for the spacing and drilling of all water wells
Consider and permit non-exempt water wells
Maintain records of non-exempt wells in a district
Submit management plans to Texas Water Development Board for approval
Collaborate regionally in joint planning for the establishment of DFCs
Collect water level and water quality data on aquifers
Educate stakeholders on water conservation
Work to prevent harm to the aquifer due to pumping or contamination

How do GCDs allocate their budgets?

Education & Outreach | Science & Research | Operations | Conservation | Regional Planning

How many GCDs are there in Texas?

Currently, there are **98** GCDs plus 2 subsidence districts.

What rules must a GCD follow?

GCDs are governed by Chapter 36 of the Texas Water Code. As political subdivisions of the state, they are also subject to Chapter 49 of the Texas Administrative Code. Based on the rules established by the State, each GCD creates policies to accomplish the goals of their District.

Do I have to register my well with my GCD?

Yes, state law requires all wells to be registered with the GCD. This does not mean that all wells require a permit. All domestic wells and livestock wells that produce less than 25,000 gallons per day are exempt from permits. A GCD has the ability to exempt others in their rules.

More GCD FAQs

What is a management plan?

A management plan outlines a GCD's goals and course of action to achieve those goals. The management plan is submitted to TWDB for approval, and rules necessary to implement the management plan are adopted by each district.

What is a Desired Future Condition?

The desired future condition is a metric that is established during the joint planning process by GCDs in a common Groundwater Management Area (GMA). The DFCs provide for consistency in groundwater management in the GMA and a balance between groundwater protection and production.

How are GCDs funded?

GCDs are funded through property taxes, permitting fees and/or usage fees.

Groundwater Terms

Aquifer

An underground geological formation able to store and yield water in useable amounts. Aquifers in Texas can consist of sand, gravel, limestone, granite, and many other rock types that have pores or spaces for water to pass through.

Aquitard

An aquitard, or confining layer, is a zone within the earth that restricts the flow of groundwater.

Total Dissolved Solids (TDS)

TDS refers to the total concentration of dissolved constituents in solution. A TDS level of less than 1000 ppm is often considered freshwater, although many Texans' drinking water has a higher TDS.

Cone of Depression

A cone of depression is a conically shaped area of decreased water level (or pressure) that occurs when water is withdrawn from an aquifer. If wells are too close to each other, these cones may overlap and cause interference resulting in abnormally low water levels in those wells. In areas that withdraw more water than is recharged or flows to that area, a semi-permanent regional cone of depression may occur.

Abandoned Wells & Water Quality

There is a high environmental risk associated with abandoned or deteriorated wells, as they are a direct conduit from the surface to our groundwater resources. Because of this risk, it is highly recommended to have abandoned or deteriorated wells plugged. Some GCDs have have established programs to assist landowners in plugging abandoned wells.

How often should I have my well water tested?

It is recommended that well owners have their water professionally tested annually or when an observed change in water quality occurs.

Who can disinfect my well water?

It is recommend to contact a licensed water well driller or a pump installer to professionally disinfect your well.

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Historical Perspective on Groundwater Management

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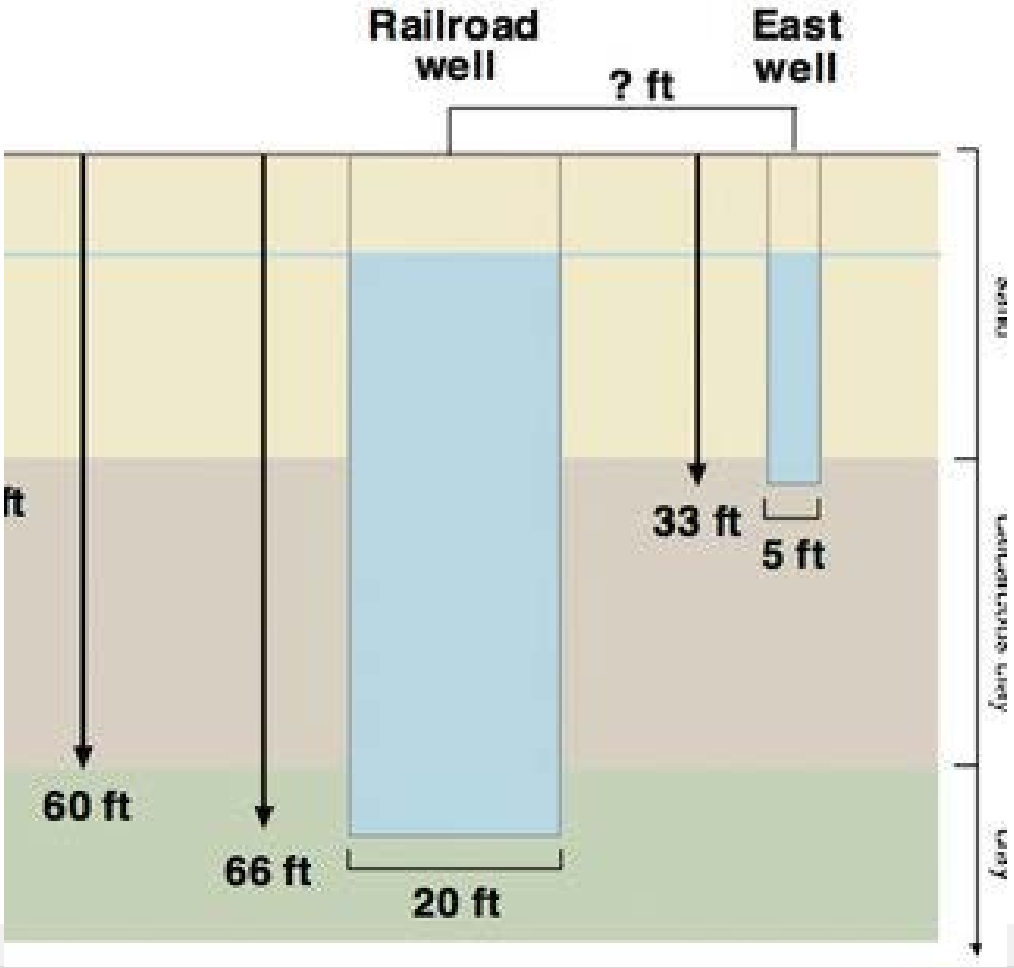
Houston & TX Central RR v. East (1904)



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The Rule of Capture

a/k/a law of the biggest pump

McDonald Irrigation Well, 1000 Gallons per Minute, Hereford, Texas.

Landowners have the right to capture an ***unlimited amount*** of groundwater beneath their property

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Why did Texas adopt the rule of capture?

"The existence , origin, movement, and course of such waters … are so secret, occult, and concealed that an attempt to administer any set of legal rules in respect to them would involve hopeless uncertainty and would be practically impossible"

Limits on Rule of Capture

- Trespass
- Malicious or wanton conduct
- Waste
- Subsidence due to negligent over-pumping

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Rule of Capture → GCDs

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1917 Conservation Amendment

Article 16, Section 59
Texas Constitution:

"The conservation and development of all of the natural resources of this State… and the preservation and conservation of all such natural resources of the State are each and all hereby declared public rights and duties; and the Legislature shall pass all such laws as may be appropriate thereto"

1949

UNDERGROUND WATER CONSERVATION DISTRICTS—
ORGANIZATION—POWERS

CHAPTER 306

H. B. No. 12

Statutory framework for GCDs

An Act amending Chapter 25, Acts of the Regular Session, Thirty-ninth Legislature, 1925, by adding a Section thereto providing for the creation and organization of underground water conservation districts to provide for the conservation, preservation, protection and recharging and the prevention of waste of underground water; prescribing the powers, functions and limitations of such districts; defining terms and prescribing standards to govern the operation of such districts and the adoption, promulgation and enforcement of rules and regulations thereof; recognizing [illegible] divisions thereto; providing for appeals from orders, rules, regulations and acts hereunder; containing a saving clause; and declaring an [illegible]

"I favor no control, but if we must have it, let it be local"

Be it enacted by the Legislature of the State of Texas:

Section 1. That Chapter 25, Acts of the Regular Session of the Thirty-ninth Legislature of the State of Texas, 1925, be and the same is hereby amended [24] by adding thereto Section 3c to provide as follows:

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Senate Bill 1
1997

- Establishes GCDs as the *"State's preferred method of groundwater management"*
- Source of much of current Chapter 36 of the Texas Water Code

GCD Formation & Demographics

What is a GCD?

- Political subdivision of the State
- Creature of the Legislature with powers expressly granted
- Specific authority to manage groundwater
- Created to protect and balance private property interests in groundwater

How are GCDs created?

The Legislature	Enabling legislation	Typically will require confirmation election
TCEQ Initiation	IF within a PGMA	Requires confirmation election
Landowner Petition	TCEQ findings on boundaries and funding	Requires confirmation election

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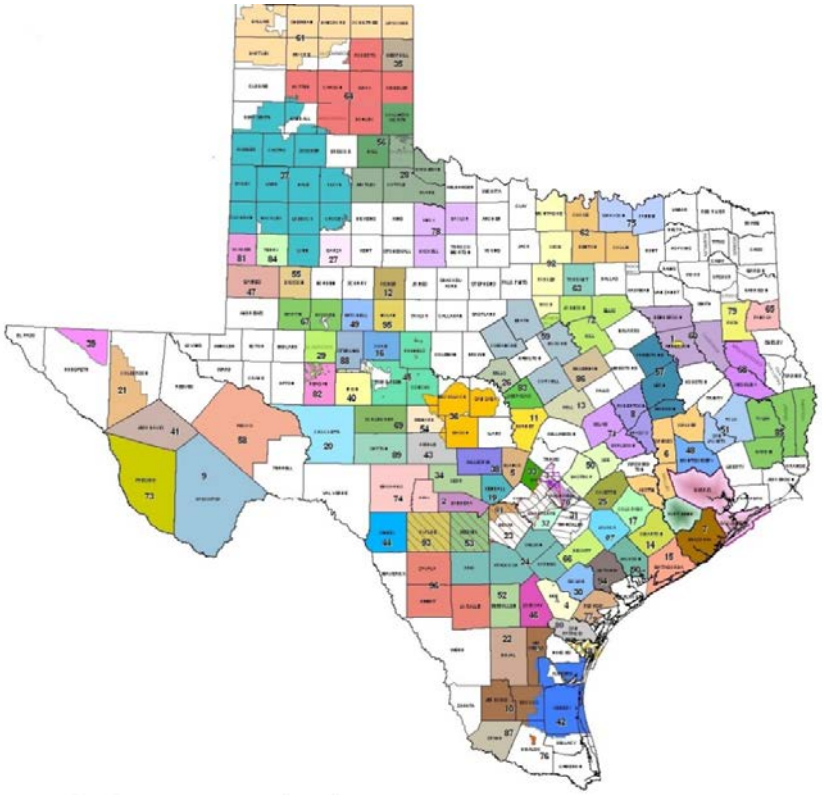
98 Groundwater Conservation Districts



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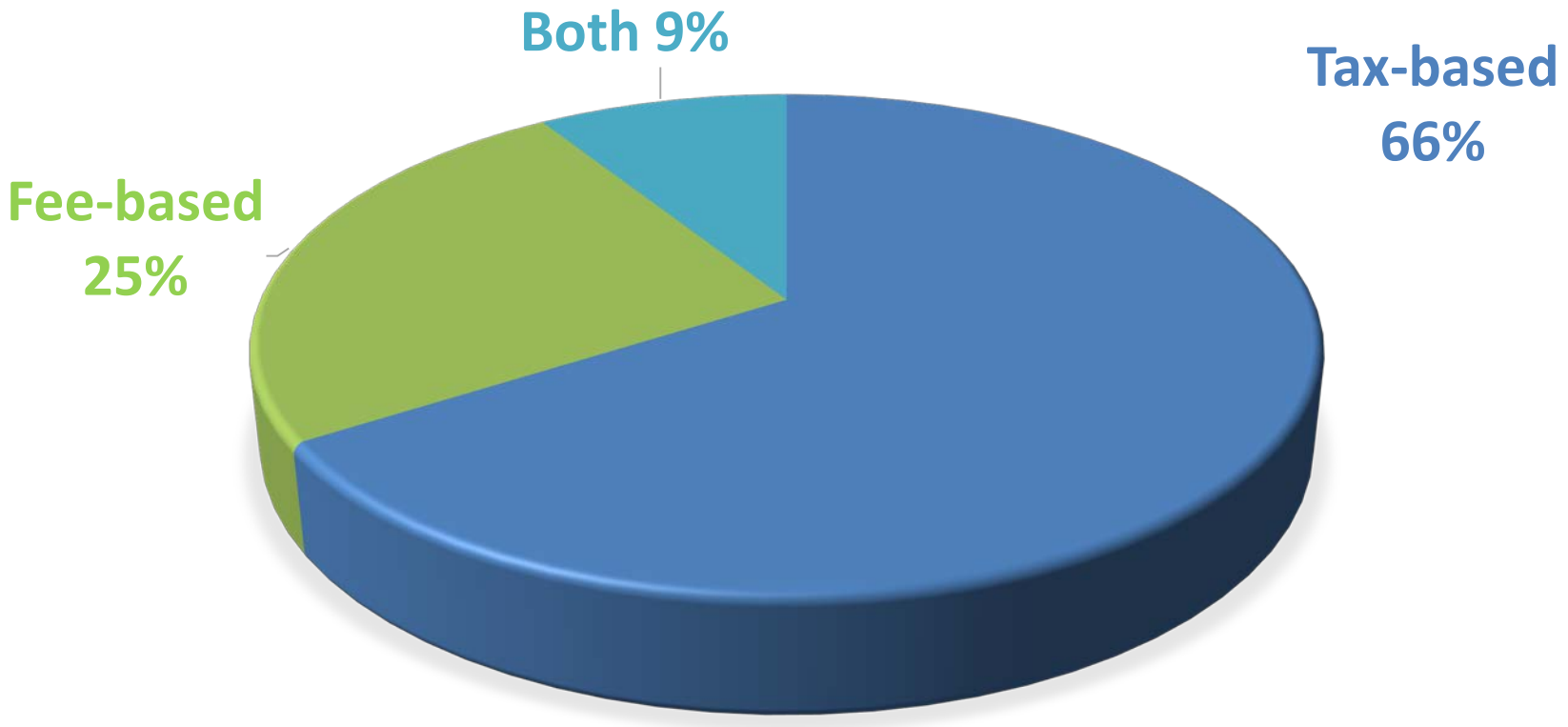
GCD Funding



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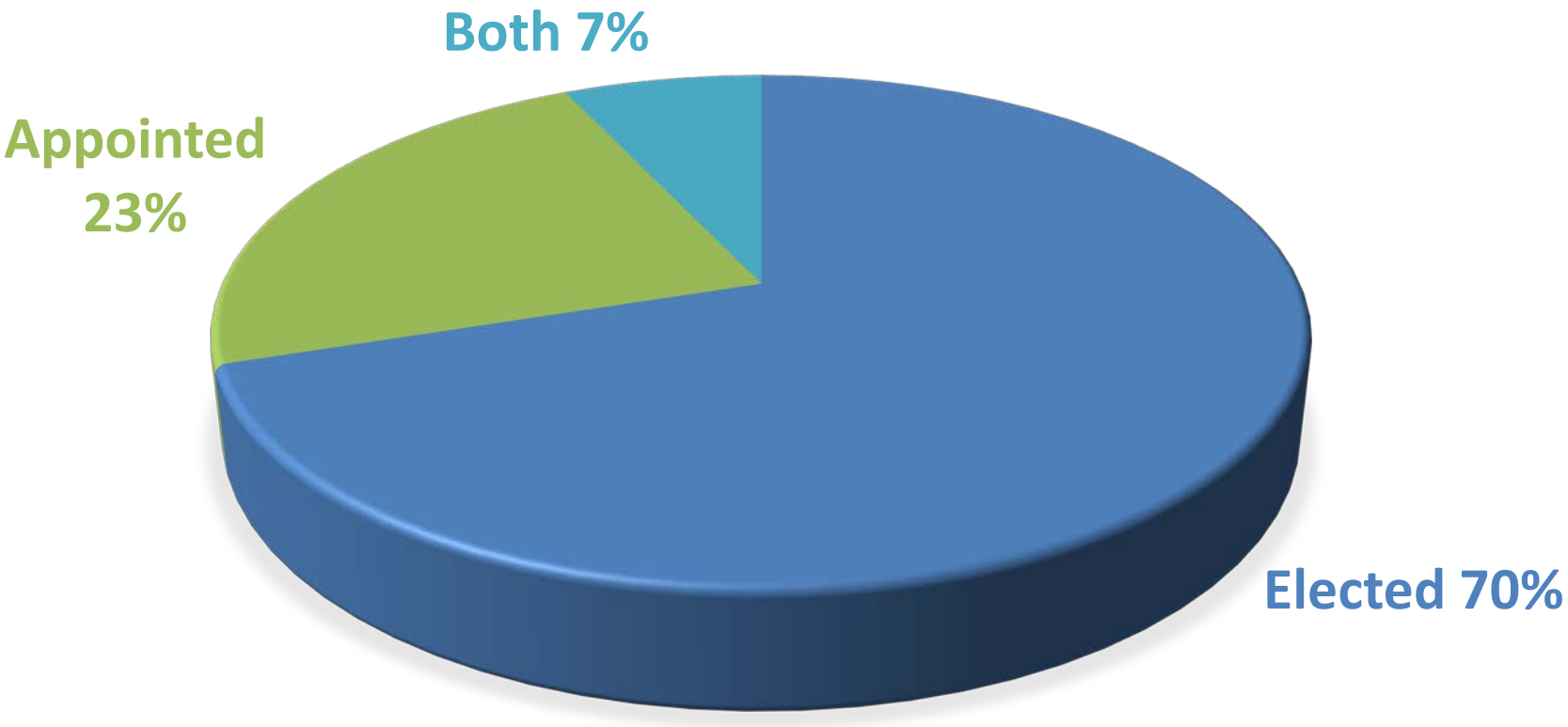
GCD Governance

LOCAL BOARD OF DIRECTORS



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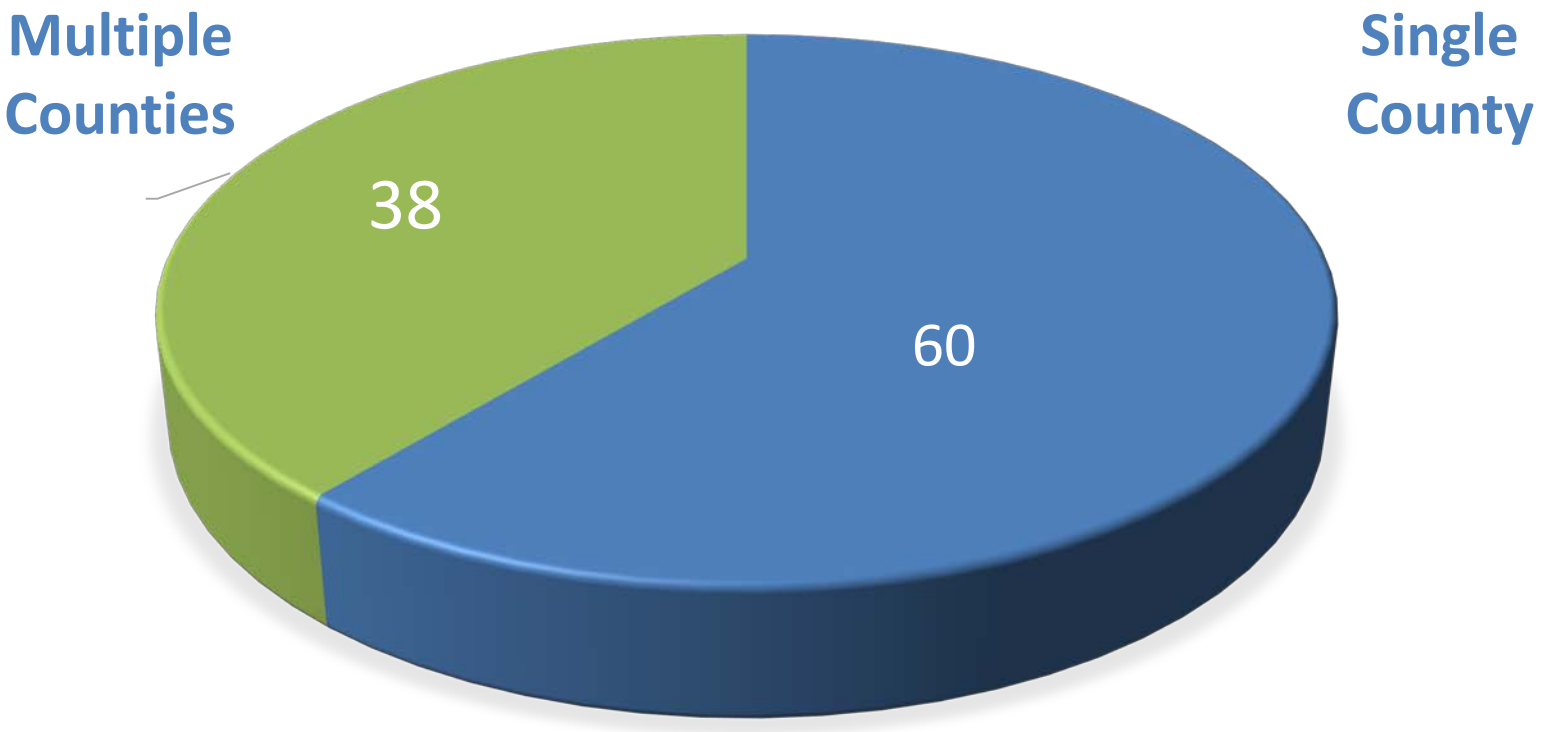
GCD Composition



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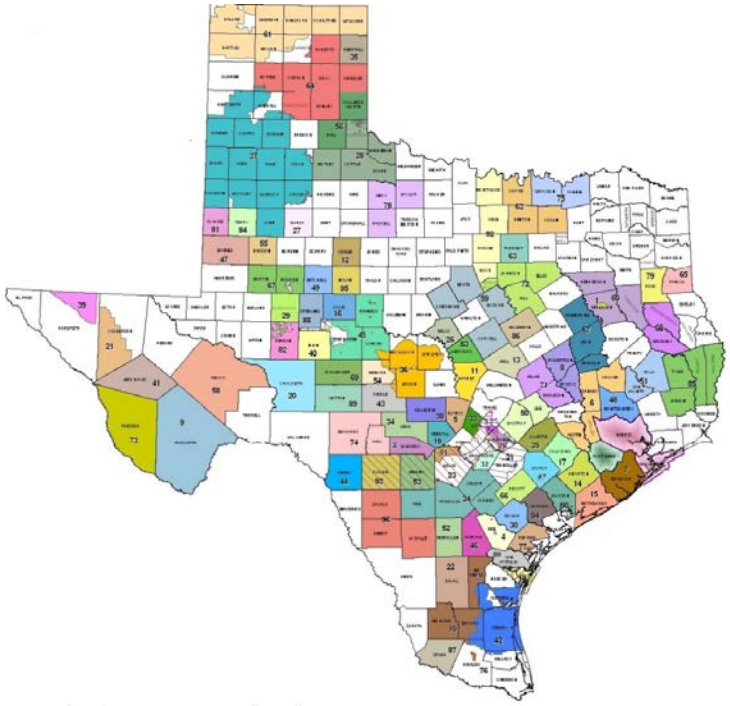
Groundwater Conservation Districts



GCDs Cover

174 of 254

Counties

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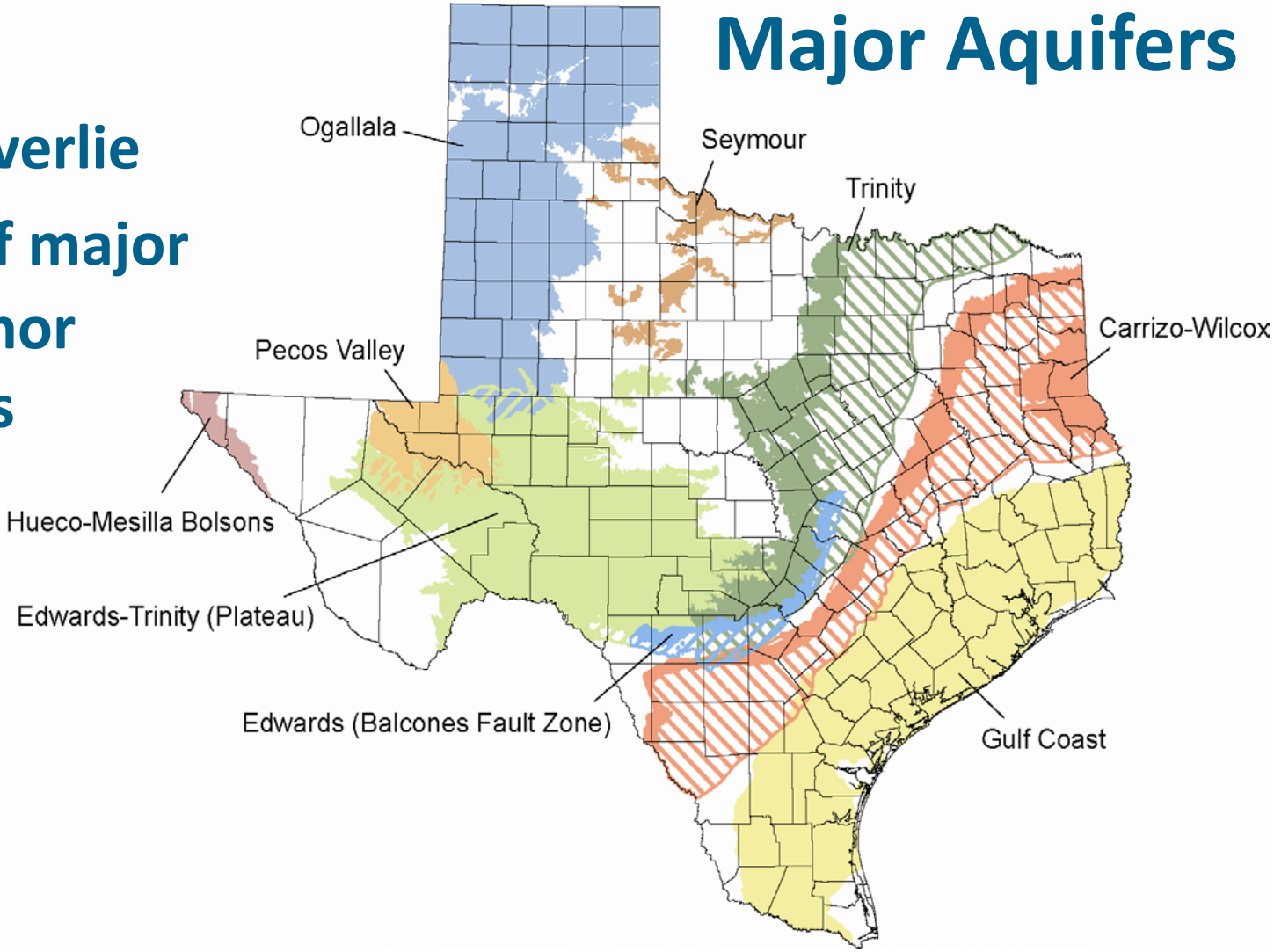
Major Aquifers

GCDs overlie 72% of major and minor aquifers



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GCD Powers and Duties

The GCD Balancing Act

Conservation, preservation, protection, recharging and prevention of waste of groundwater

Rights of Landowners and the highest practicable level of groundwater production

How GCDs Manage Groundwater

- Well Permitting and Enforcement
- Regional Planning
- Research & Science
- Well Monitoring
- Public Education
- Water Quality

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GCD Regulation of Wells

- Registration requirements
- Metering & Reporting requirements
- Construction standards
- Production limitations
- Spacing requirements

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Well Regulation - GCDs MUST

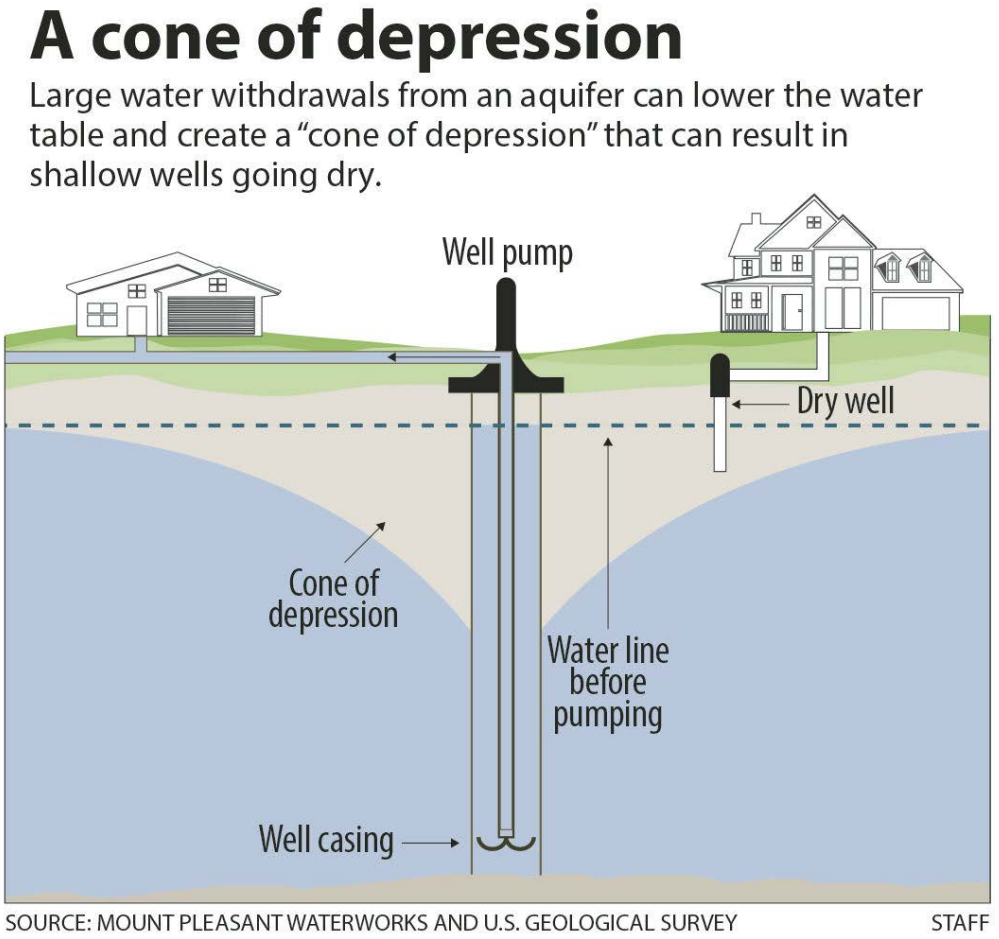
- ✓ Register exempt wells
- ✓ Require permits for the drilling, equipping, and completing of wells
- ✓ Require filing of well driller logs

Well Regulation - GCDs MAY

- ✓Require records and reporting on drilling, equipping, completing, and production of GW
- ✓Regulate well spacing (exempt and non-exempt)
- ✓Limit well production (non-exempt wells)

Well Spacing

- From property lines
- From other wells
- Minimum tract size
- Capacity and size-based
- Combination of the above



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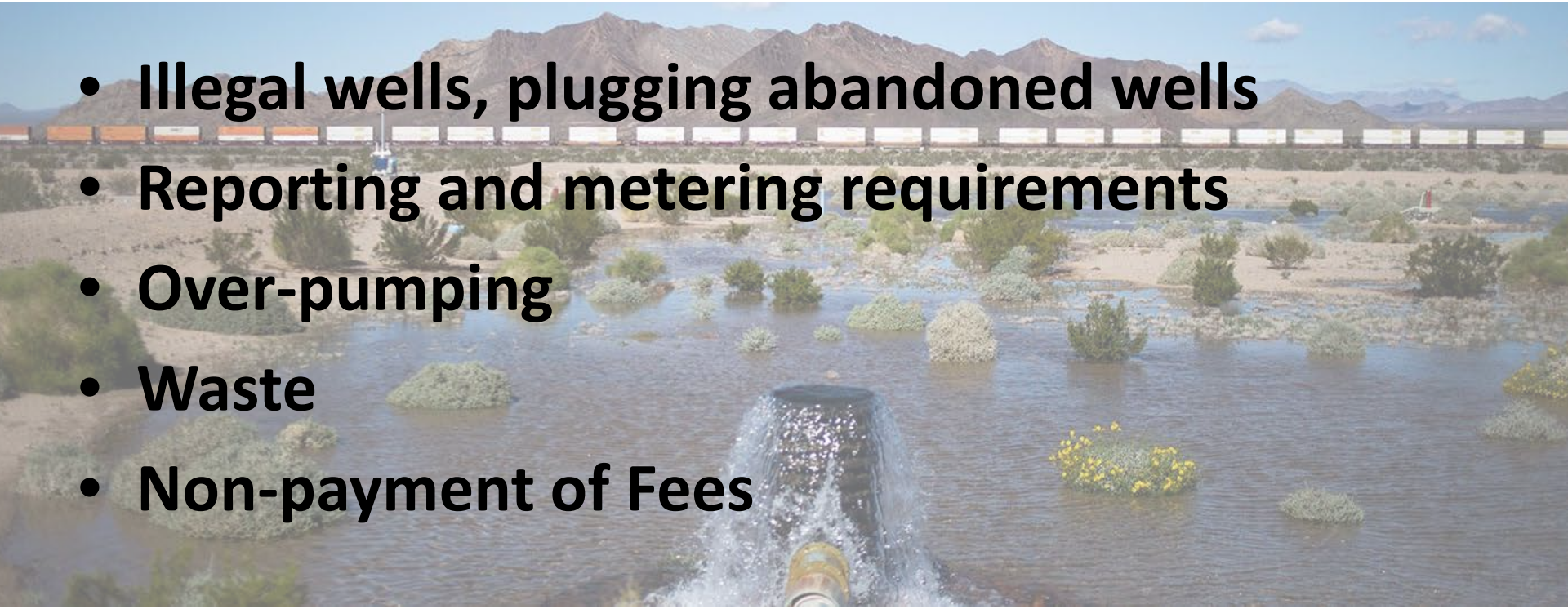
Production Limitations – GCDs May

- ✓Set volumetric/rate limits on wells
- ✓Be based on acreage, tract size, or assigned acres
- ✓Implement limits to achieve managed depletion

Production Limitations, GCDs May

- ✓ Preserve historic use
- ✓ Consider the service area of a retail water utility in imposing limitations based on tract size
- ✓ Adopt different rules for different aquifers or geographic areas within the GCD

Compliance and Enforcement



- Illegal wells, plugging abandoned wells
- Reporting and metering requirements
- Over-pumping
- Waste
- Non-payment of Fees

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Regional Planning

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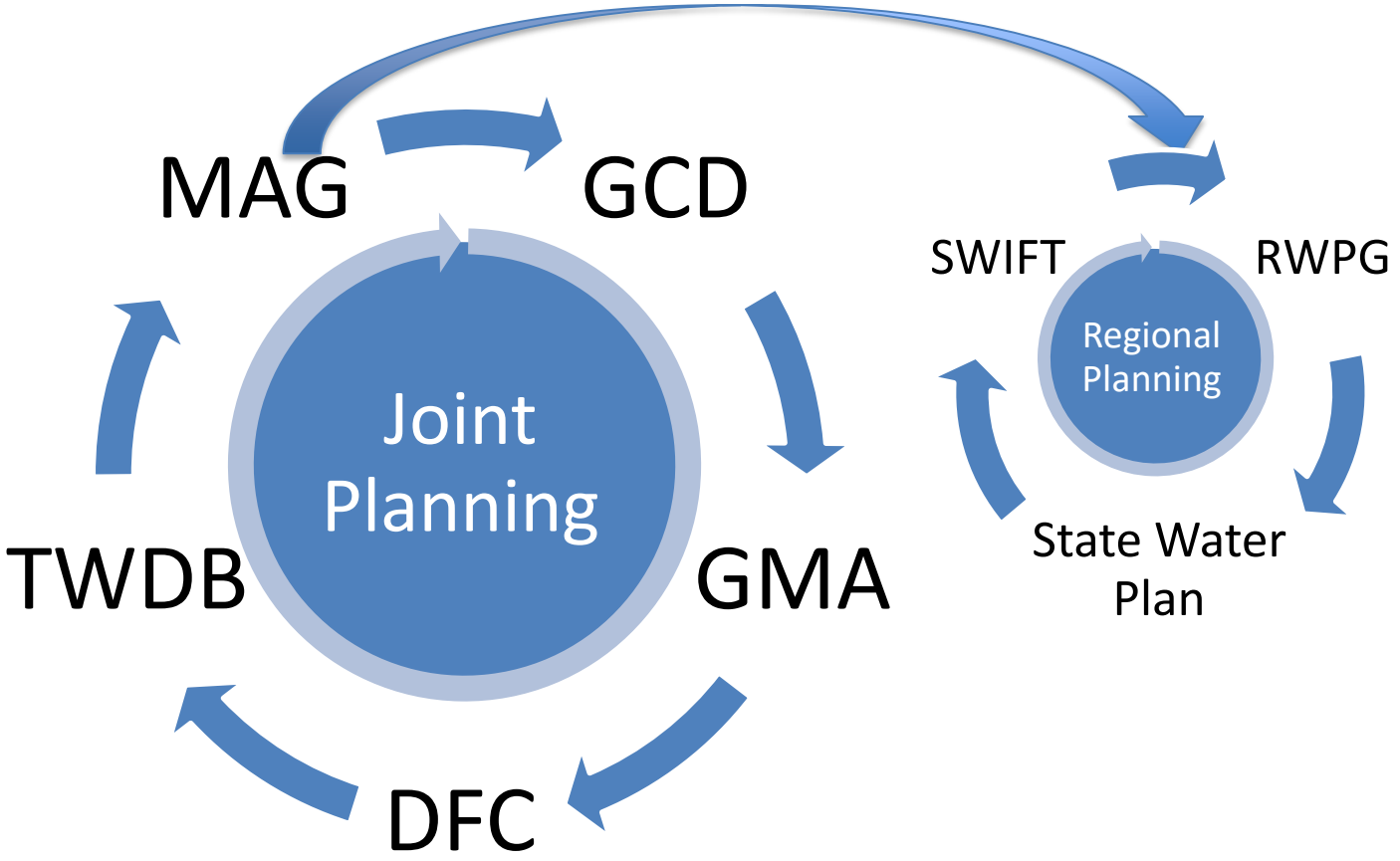
Joint & Regional Planning



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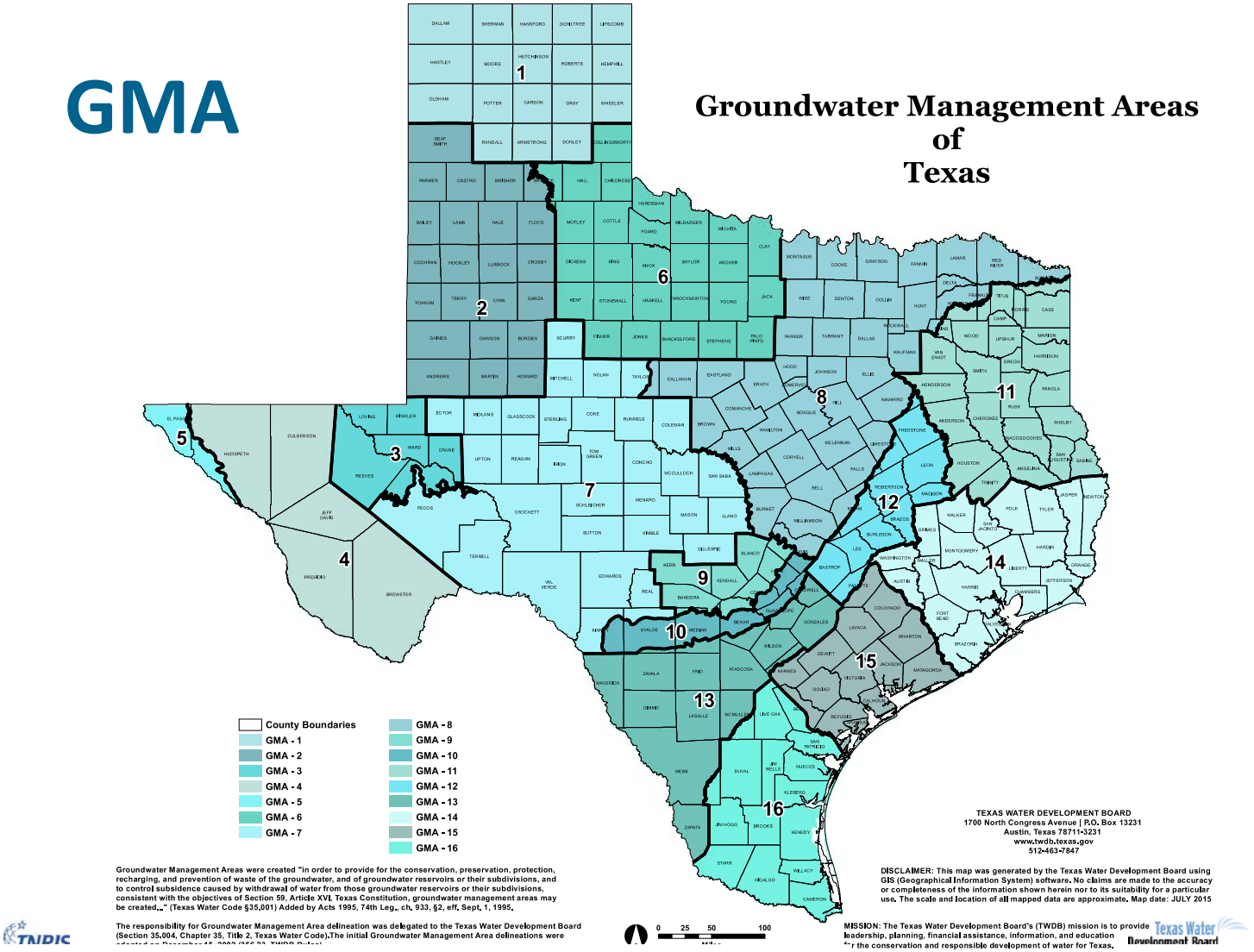
GMA



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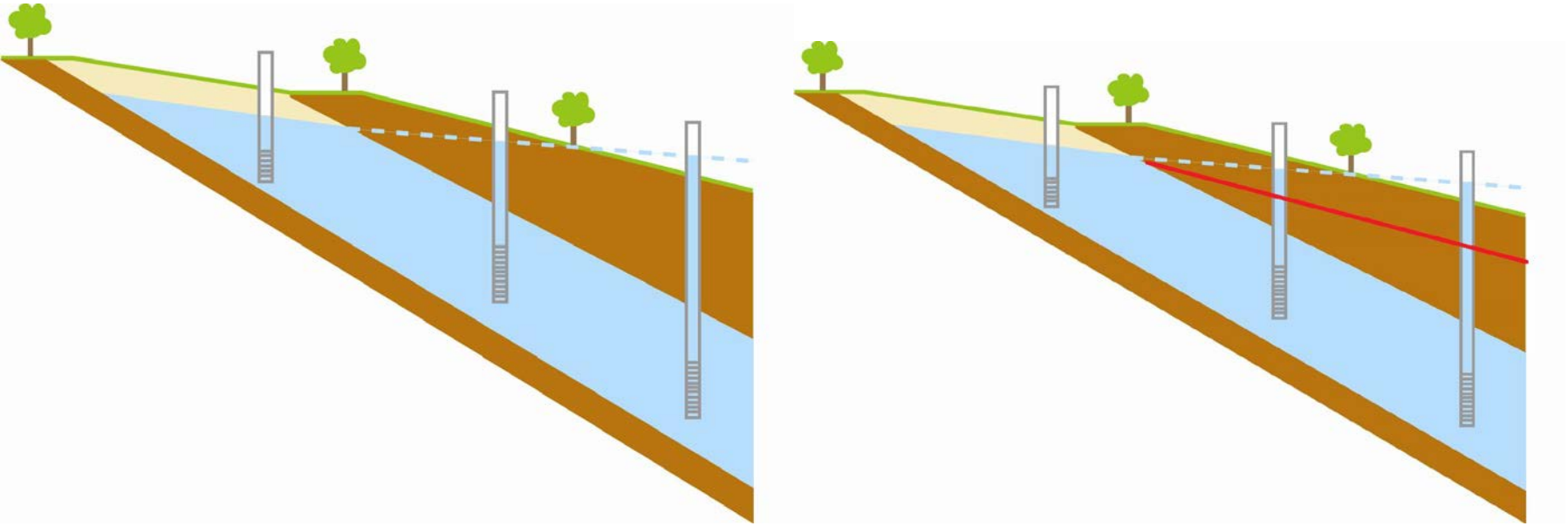
Desired Future Conditions (DFCs)

An expression of local groundwater management



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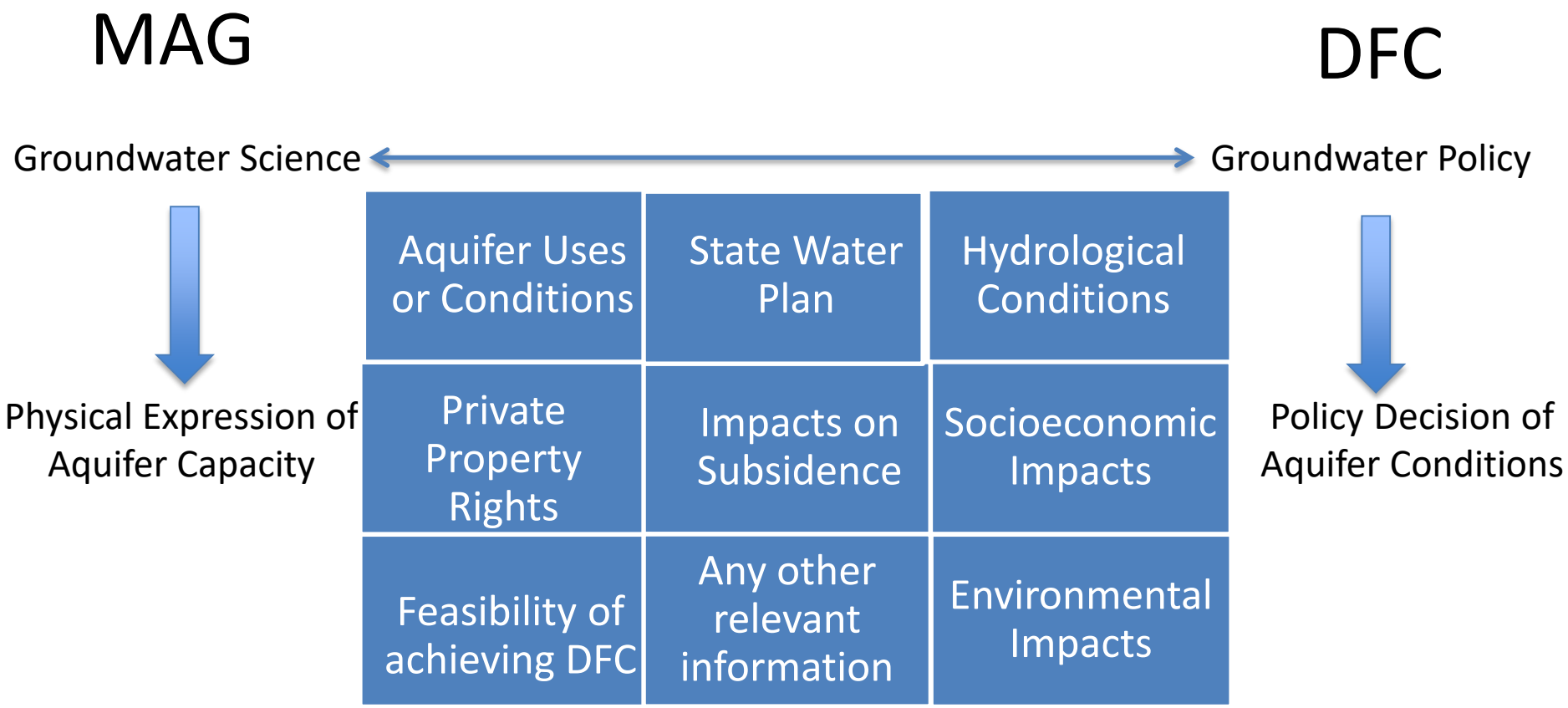
Science & Policy



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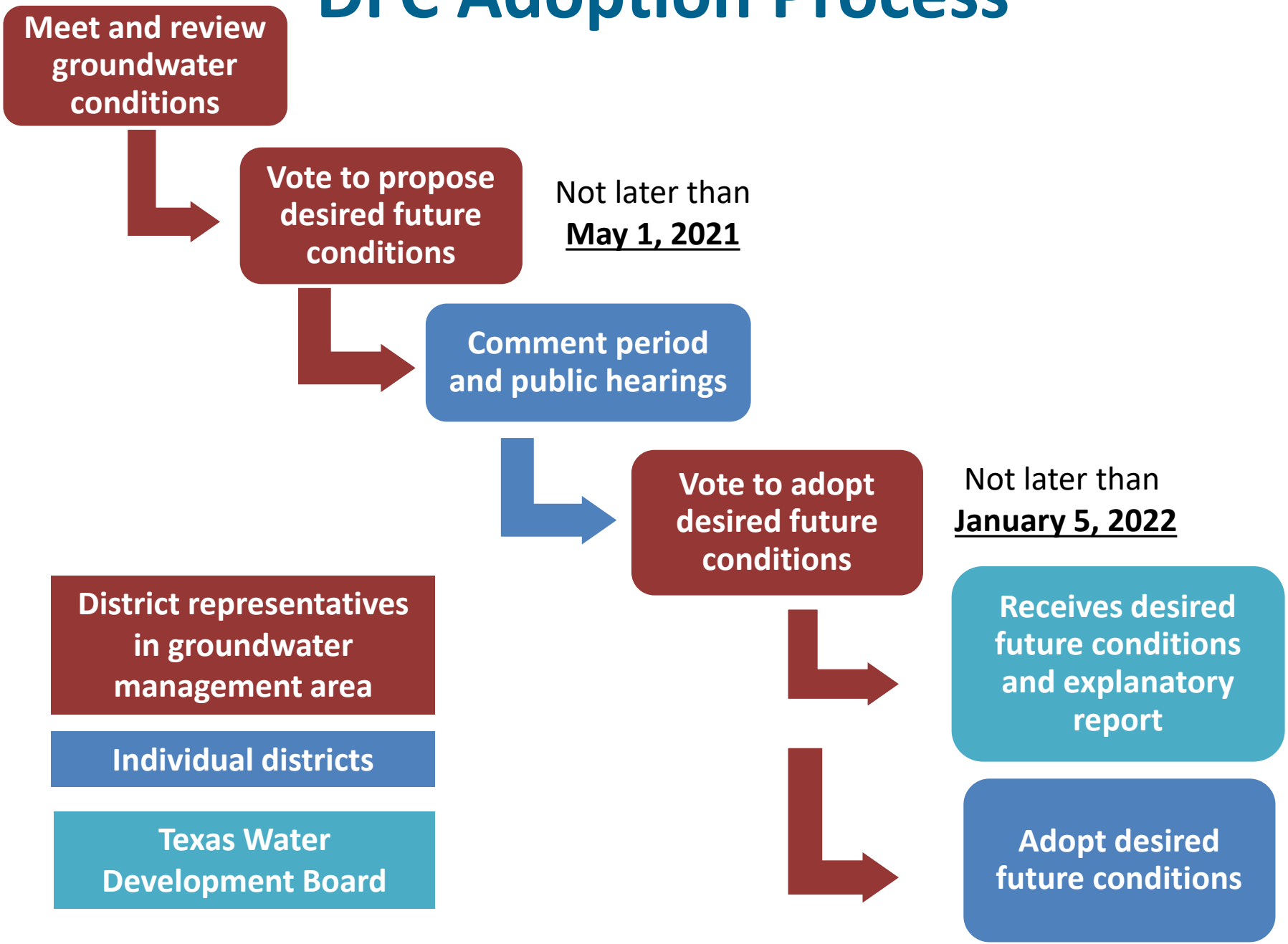
The MAG

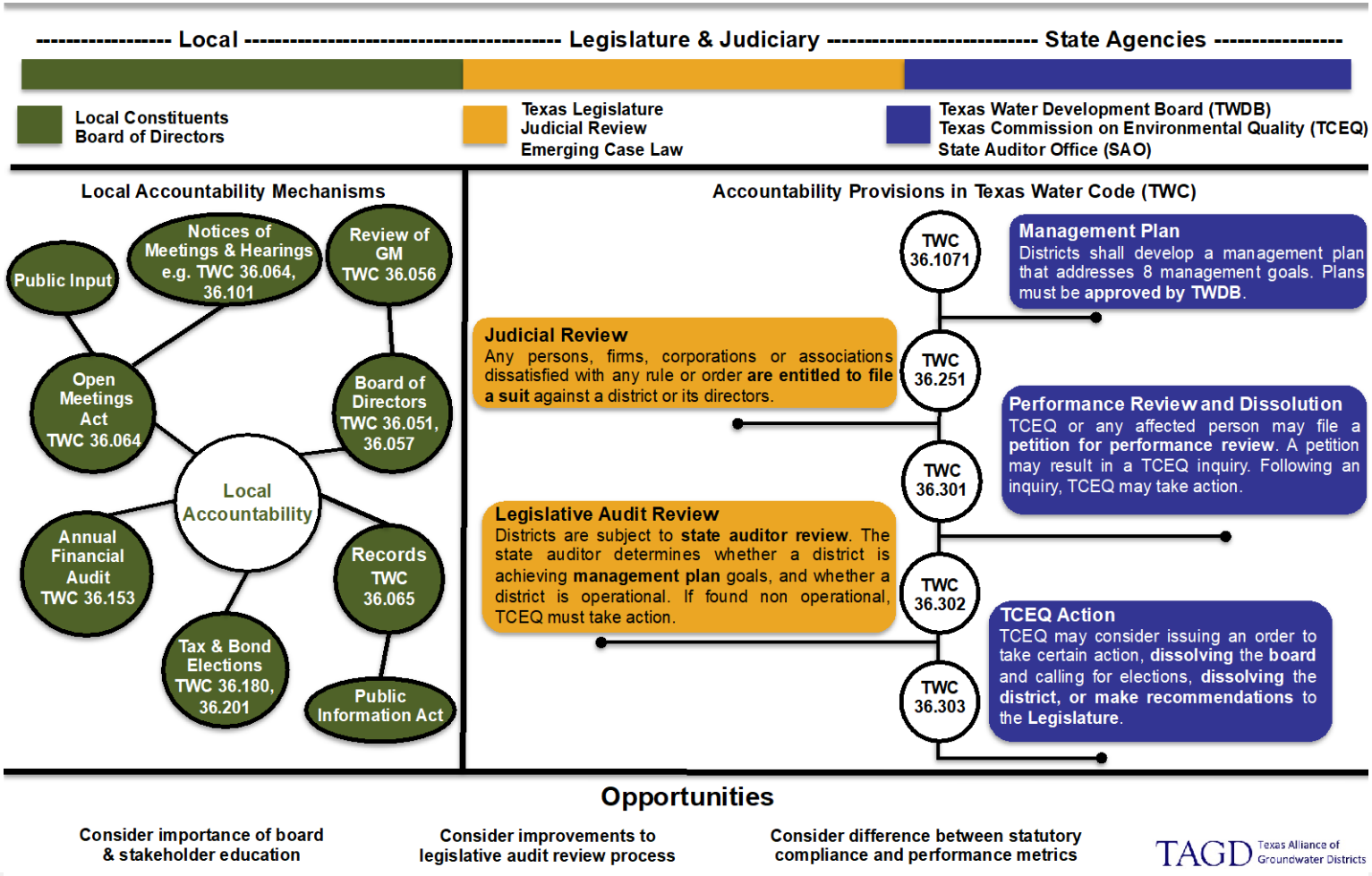
Modeled Available Groundwater

- The amount of water that may be produced on an average annual basis to achieve a DFC
- GCDs, to the extent possible, shall issue permits up to the point that the total volume of groundwater production will achieve the DFC
- Expressed as a rate, generally acre-feet per year

DFC Adoption Process



Oversight of GCDs



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What Else to GCDs Do?

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Counties and Groundwater Management

- Water Availability Requirements
  - If in a “Priority Groundwater Management Area”
  - Under Model Subdivision Rules, require certification of groundwater availability

GCD/County Coordination

- Financial support (establishment, programs)
- Scientific studies
- Unified voice at Capitol
- Participate Joint planning if no GCD
- Engage in platting process/certification of groundwater availability

Get to know your local GCD

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Questions?

Leah Martinsson leah@texasgroundwater.org

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