

# Burleson and Milam County Groundwater Summit

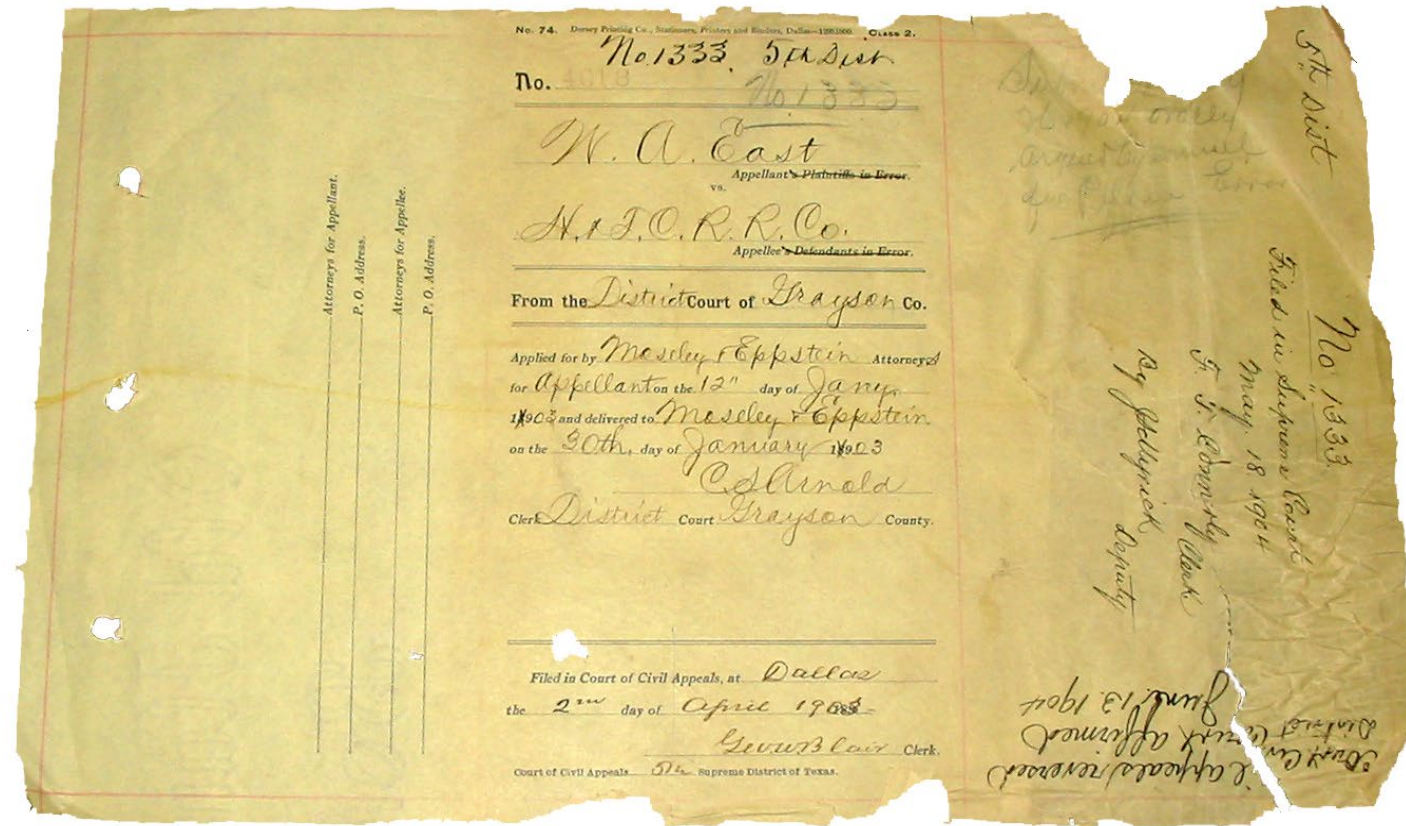
Property Rights vs. Regulation:  
Managing Groundwater Amid  
Population Growth and Export Projects

July 18, 2024

# 1904

## Rule of Capture

- Established by the Texas Supreme Court
- Affirmed that landowner can pump with impunity
- No liability for drainage from neighbor
- Exceptions: malicious, wasteful, or causes subsidence.
- “... so secret, occult and concealed...”



1949

## Groundwater Conservation District Act

- Political compromise
- GCD creation within designated reservoirs
- Counties could opt out
- GW is private property
- Departure from SW

*“I favor no control, but if we must have it, let it be local.”*

*Texas High Plainsman, 1930's*

A BILL  
TO BE ENTITLED

AN ACT to promote the orderly development, conservation and use of the underground waters of this State; declaring the public policy of this State with respect thereto; providing that it shall be the duty of the State Board of Water Engineers to designate groundwater basins and subdivisions thereof, and to alter the boundaries thereof; amending Chapter 25, Acts of the Regular Session of the 39th Legislature of Texas, 1925, by adding thereto Section 3c providing water control and improvement districts hereafter created may include in their purposes and plans the development, conservation, control, preservation, protection, recharge, distribution and use of the underground waters within their boundaries; prescribing the rights, powers, duties and functions of such districts; providing that no petition for the creation of such a district to exercise such rights, powers, duties and functions shall be considered unless the territory included in such proposed district shall have been theretofore designated as a groundwater basin; providing that directors of all such districts shall be selected by precincts; providing that Section 4a of Chapter 25, Acts of the Regular Session of the 39th Legislature of Texas, 1925, as added by Chapter 107, Acts of 1st Called Session of the 40th Legislature of Texas, 1927, shall not apply in the exercise of the powers, privileges and functions conferred by this Act; providing that districts proposing to issue bonds for sole purpose of carrying out one or more of the powers, privileges and functions conferred by this Act shall not be required to submit plans to, and secure the approval of, the State Board of Water Engineers as required by Section 139 of Chapter 25, Acts of Regular Session of the 39th Texas Legislature, 1925; providing a saving clause and declaring an emergency.

FILED FEB 3 1949

FEB 7 1949 READ 1ST TIME  
AND REFERRED TO COMMITTEE ON  
*Conservation & Reclamation*

MAR 7 1949 REPORTED FAVORABLY. AS AMENDED.

MAR 7 1949 SENT TO PRINTER.

MAR 15 1949 RETURNED FROM PRINTER, SENT TO SPEAKER

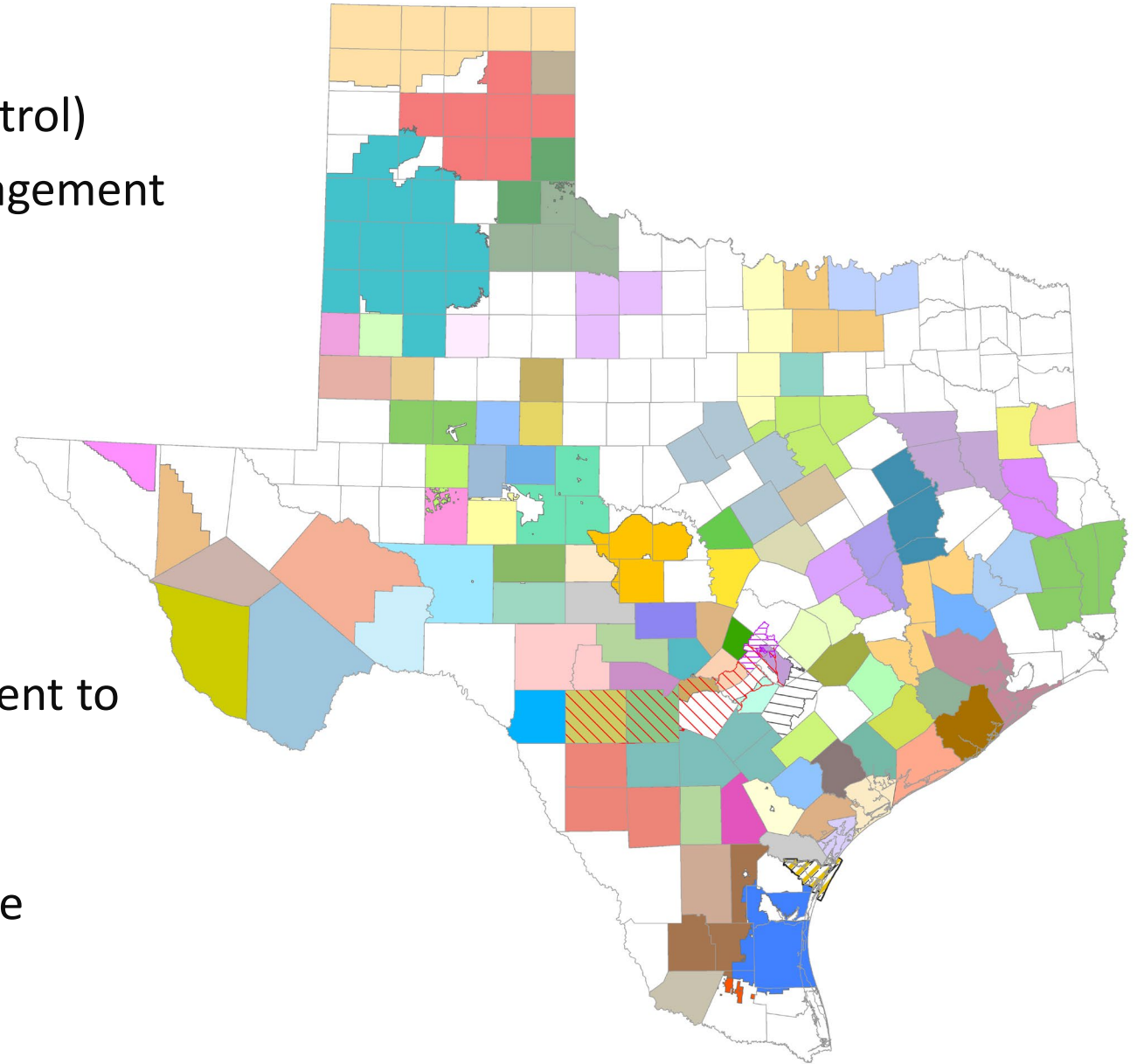


APR 1 8 1949

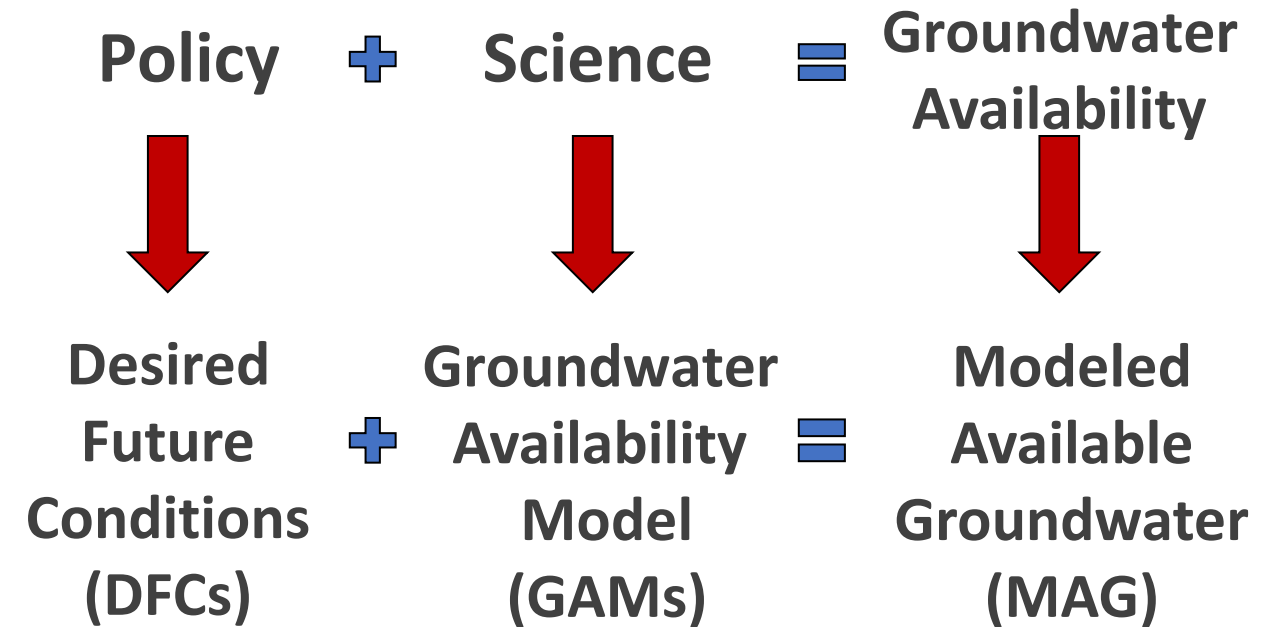
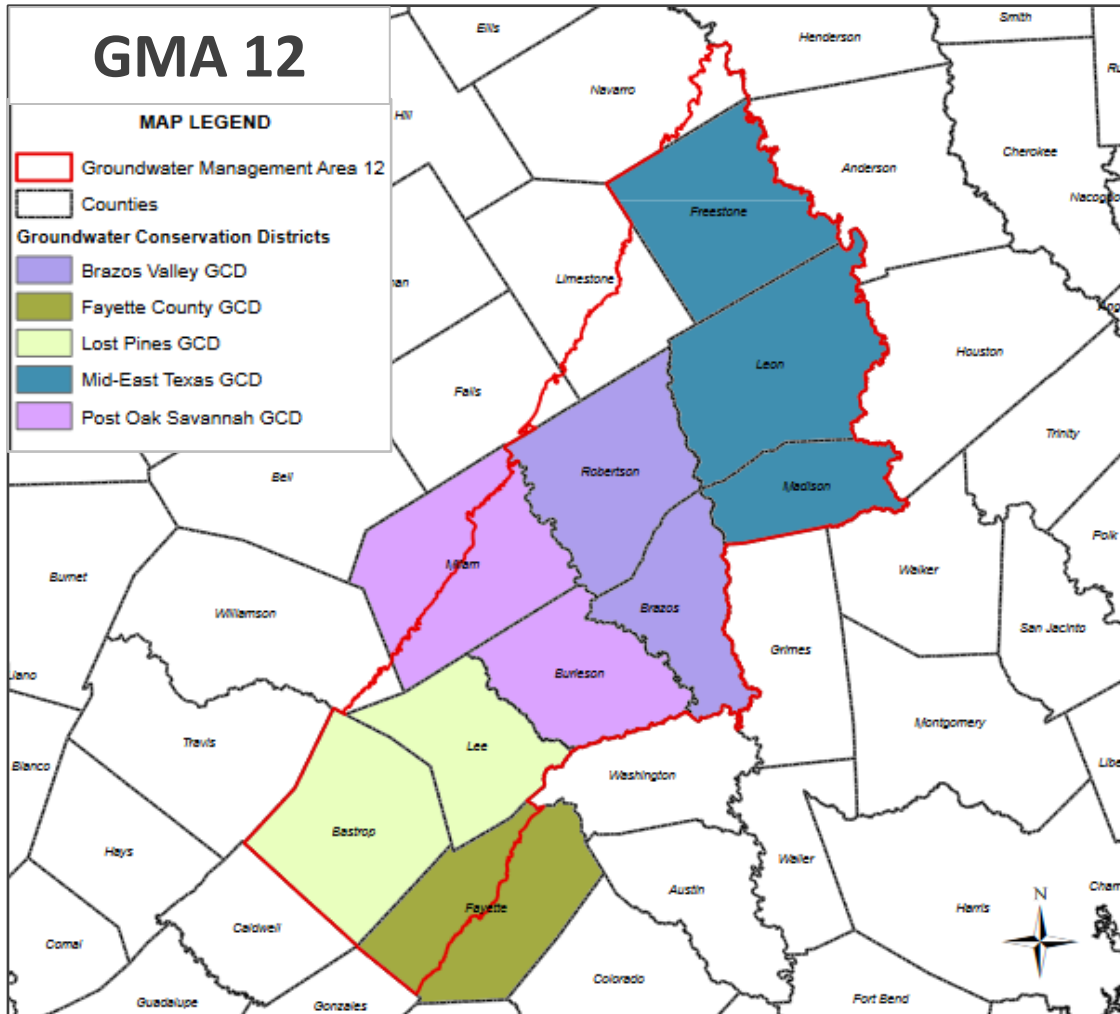
SET AS A SPECIAL ORDER  
FOR... 25th DAY... 1949  
AT... 10:30...  
*Charles J. ...*  
CHIEF CLERK OF H.

# Groundwater Conservation Districts

- GCD Act of 1949
- Decentralized Management - (Local Control)
- Preferred method of groundwater management
- Modified the rule of capture
- 99 created to date
- Purpose:
  - Conserve, preserve, and protect groundwater
  - Protect private property rights
  - Balance conservation and development to meet needs of the state (DFCs)
  - Use Best Available Science
- *Day Case* (2012) – affirmed GW is private property in place



# Joint Regional Groundwater Planning

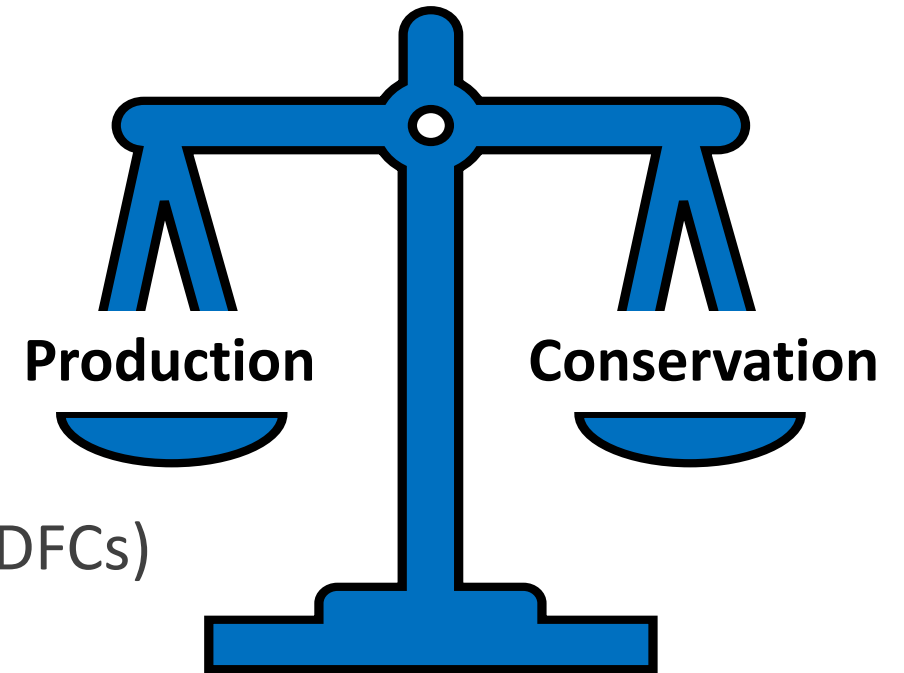


**Balancing Act – *must provide a balance of highest practical level of production and conservation and preservation of aquifers***



# Desired Future Condition (DFC)

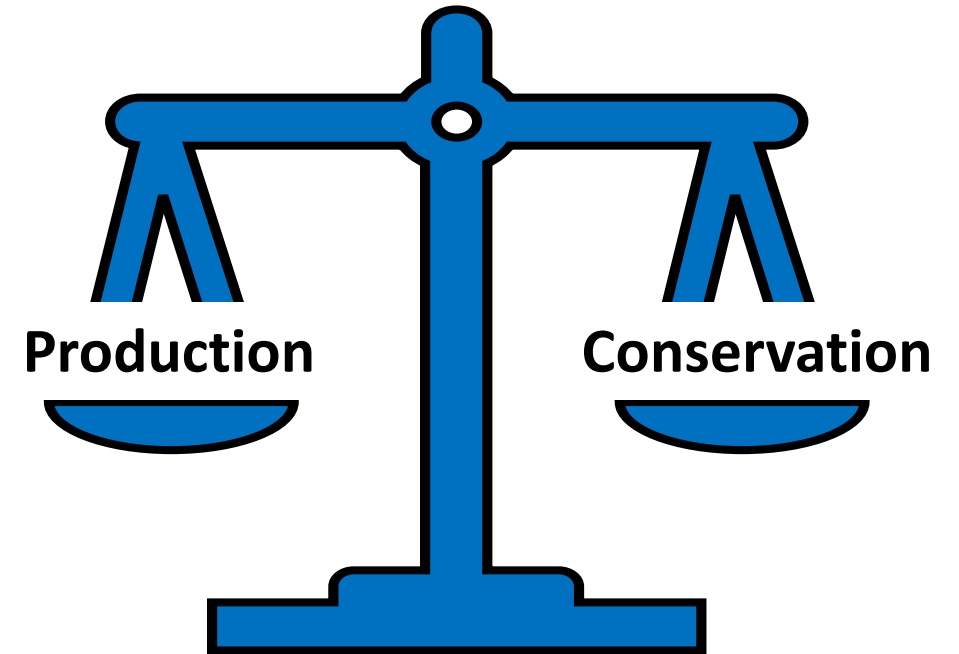
- ***means a quantitative description of the desired condition of the groundwater resources in a management area at one or more specified future times.***
- For “relevant” aquifers
- Broad Policy Goal
  - Max. drawdown (most DFCs)
  - Min. Spring flow (a few DFCs)
  - Min. Storage volumes (High Plains)
  - Min. percent available drawdown (newer DFCs)
- Updated at least every 5 years



# Desired Future Conditions - A Policy Decision

## 9 factors

Aquifer uses and conditions	Environmental impacts	Property rights
State water plan	Land subsidence	Feasibility
Hydrologic conditions	Socio-economics	Any other information

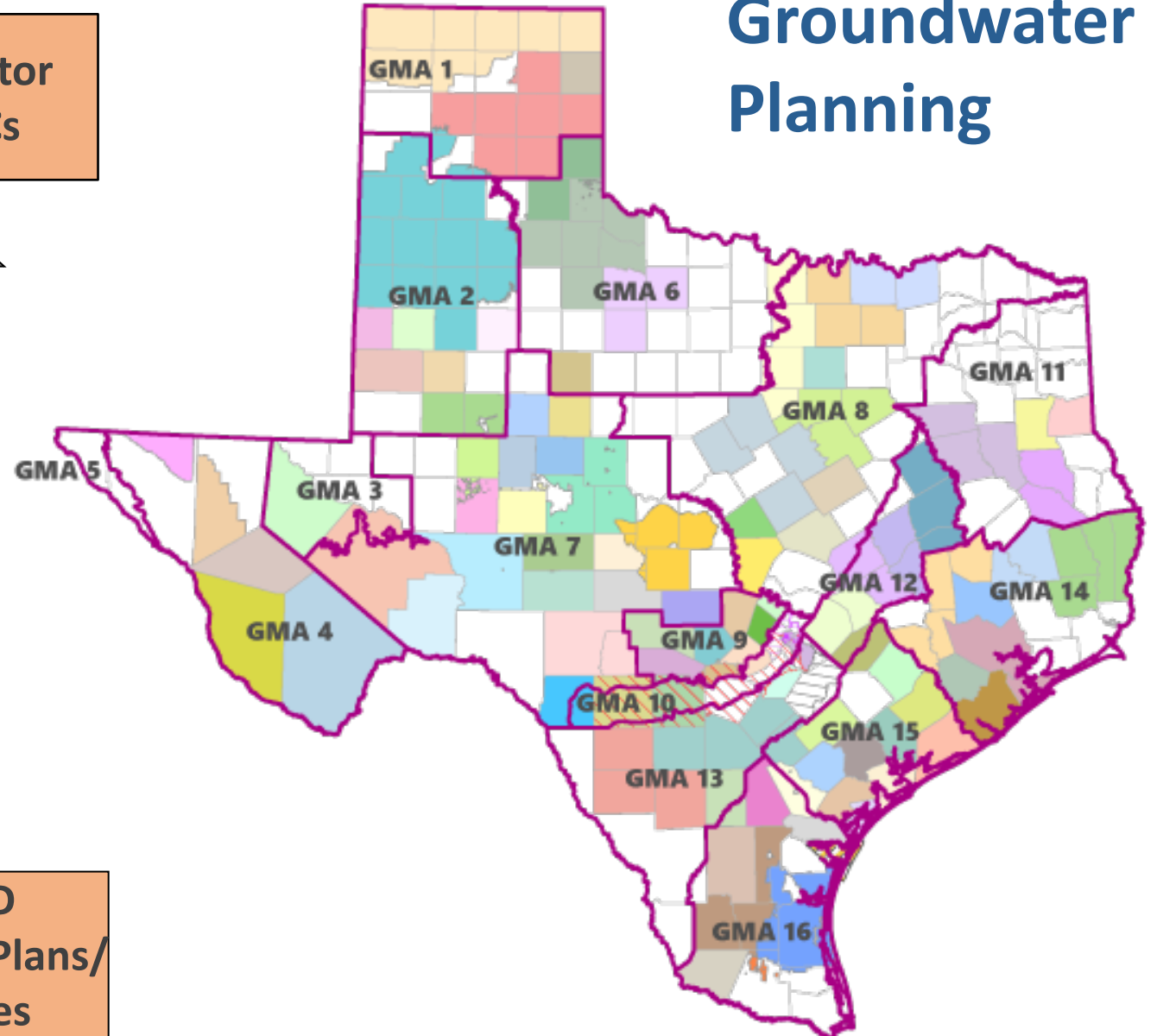
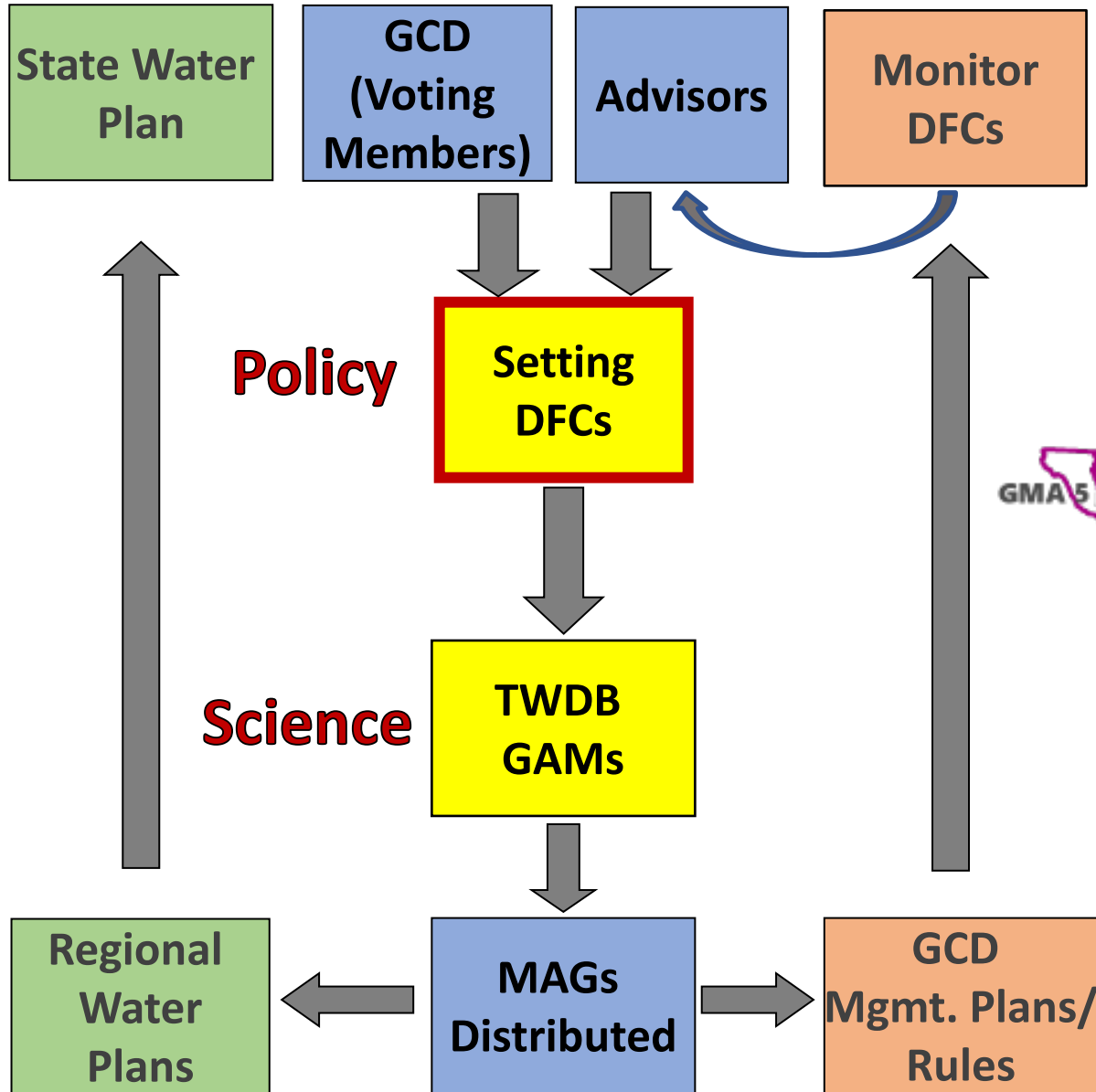


**Balancing Act** – *must provide a balance of highest practical level of production and conservation and preservation of aquifers*

*Groundwater  
Planning*

*Groundwater  
Management*

# Joint Groundwater Planning





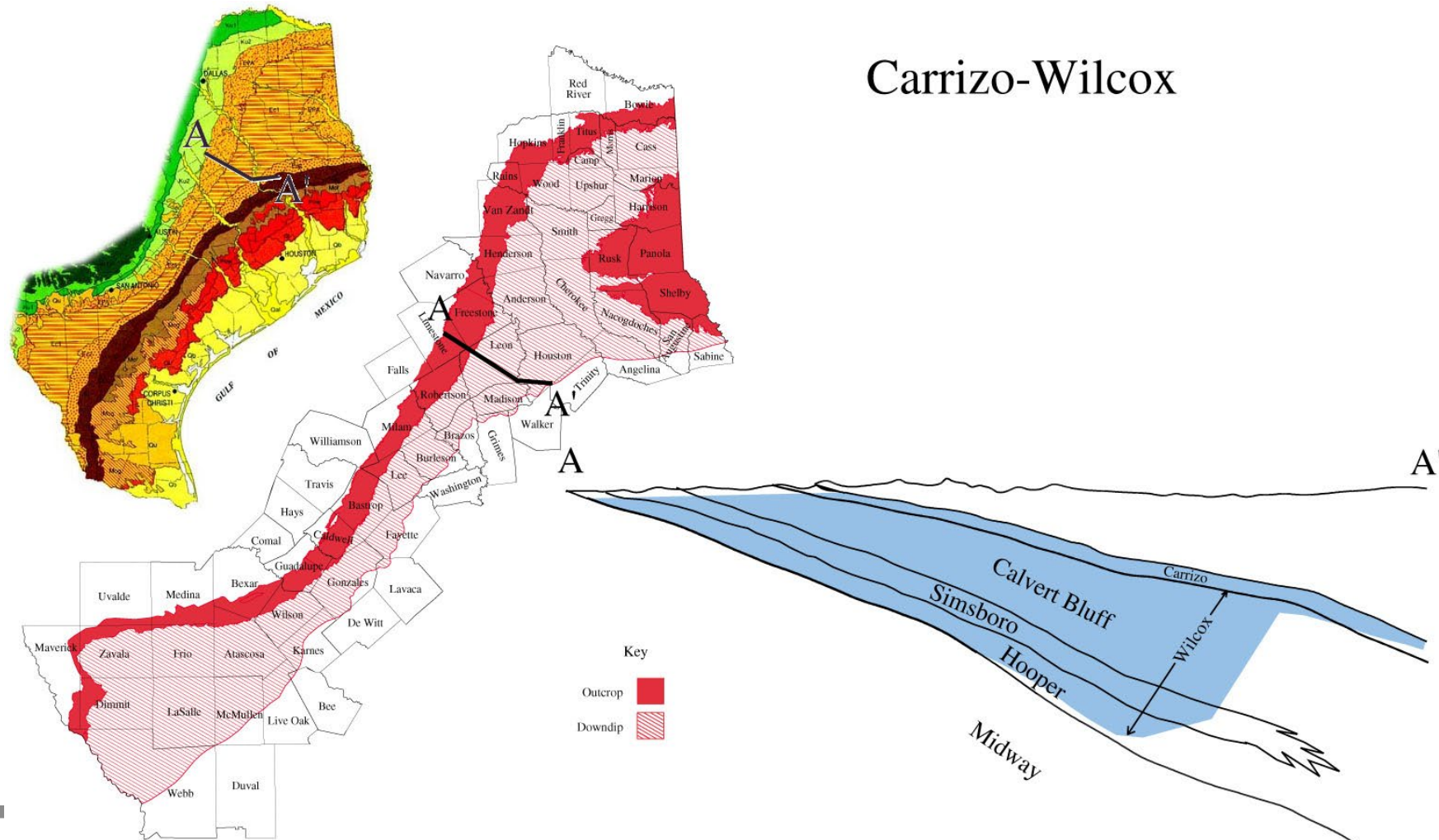
# GCD Authority: Evolving Purpose

- 1949 - Conserve, preserve, protect
- 1997 - Preferred method
- 2015 - Protect private property rights
  - Balance conservation and development
  - Meet the needs of the state
  - Use best available science

## *Sec. 36.0015(b). PURPOSE.*

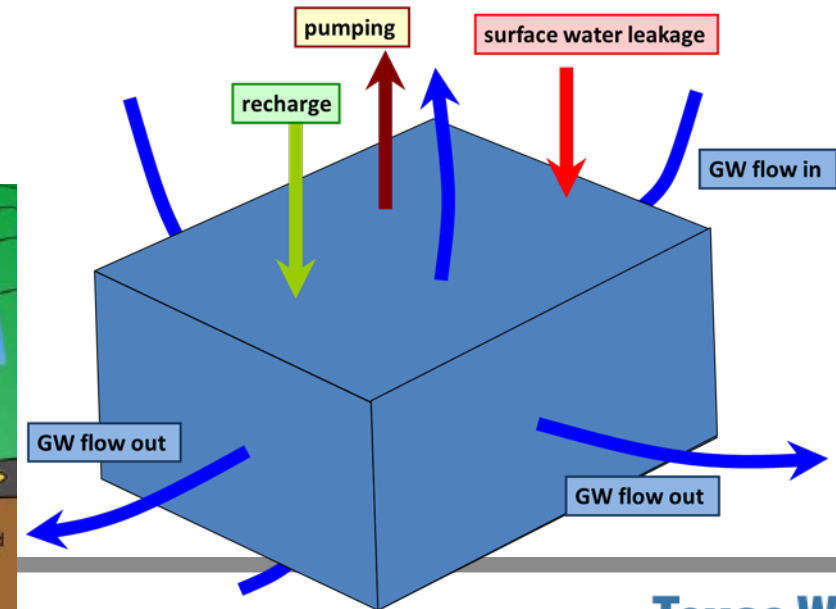
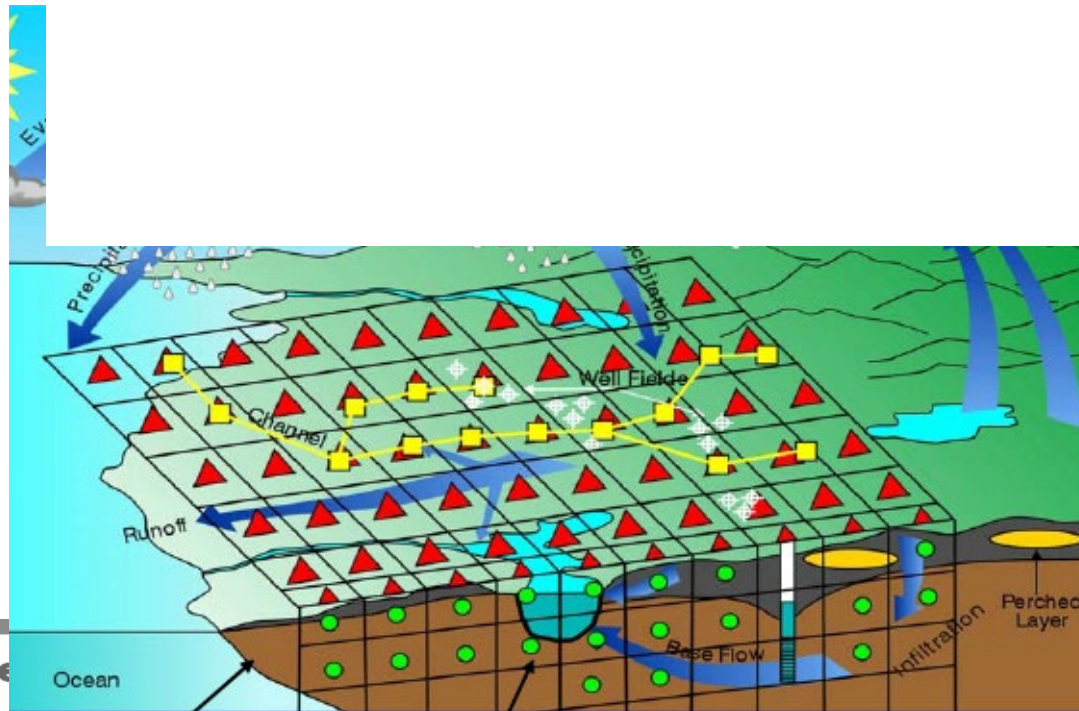
*...to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater... Groundwater conservation districts ...are the state's preferred method of groundwater management in order to protect property rights, balance the conservation and development of groundwater to meet the needs of this state, and use the best available science ....*

# Carrizo-Wilcox Aquifer



# Groundwater Availability Model (GAM)

- a tool that integrates data and hydrology to predict groundwater flow
- the tool acts like a big 3-D Excel spreadsheet where grid cells physically represent “blocks” of aquifer material
- water levels are predicted by solving for a water balance at each block using equations describing groundwater flow



## Ownership of Groundwater

TWC 36.002 states: The groundwater ownership and rights described by this section: (1) entitle the landowner,... to drill for and produce the groundwater below the surface of real property, subject to Subsection (d), without causing waste or malicious drainage of other property or negligently causing subsidence, but does not entitle a landowner,... to the right to capture a specific amount of groundwater below the surface of that landowner's land; and (2) do not affect the existence of common law defenses or other defenses to liability under the rule of capture.

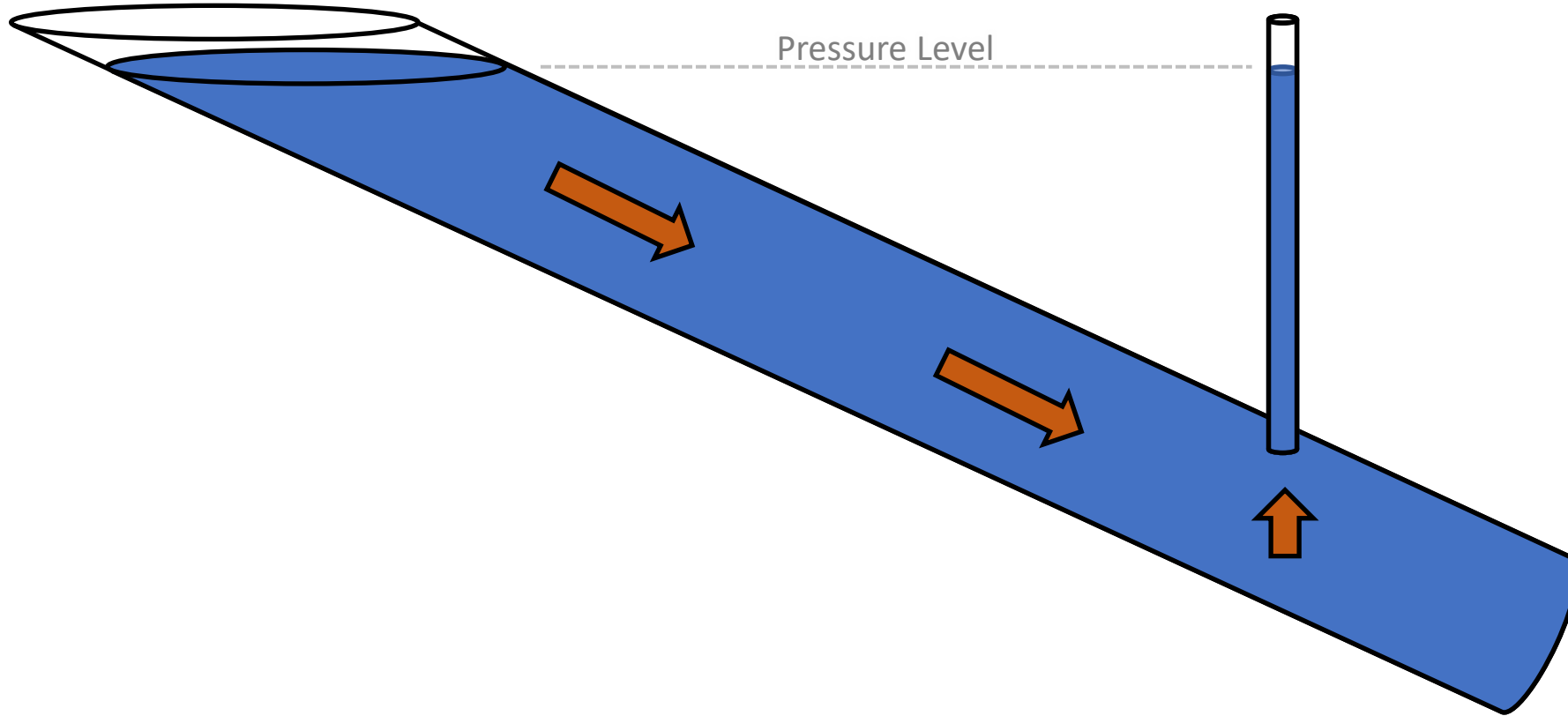
Subsection (d), mentioned above, states:

This section does not... prohibit a district from limiting or prohibiting the drilling of a well by a landowner for failure or inability to comply with minimum well spacing or tract size requirements adopted by the district,... (or) affect the ability of a district to regulate groundwater production as authorized... under this chapter...



# Challenges of balancing development with protection of aquifers

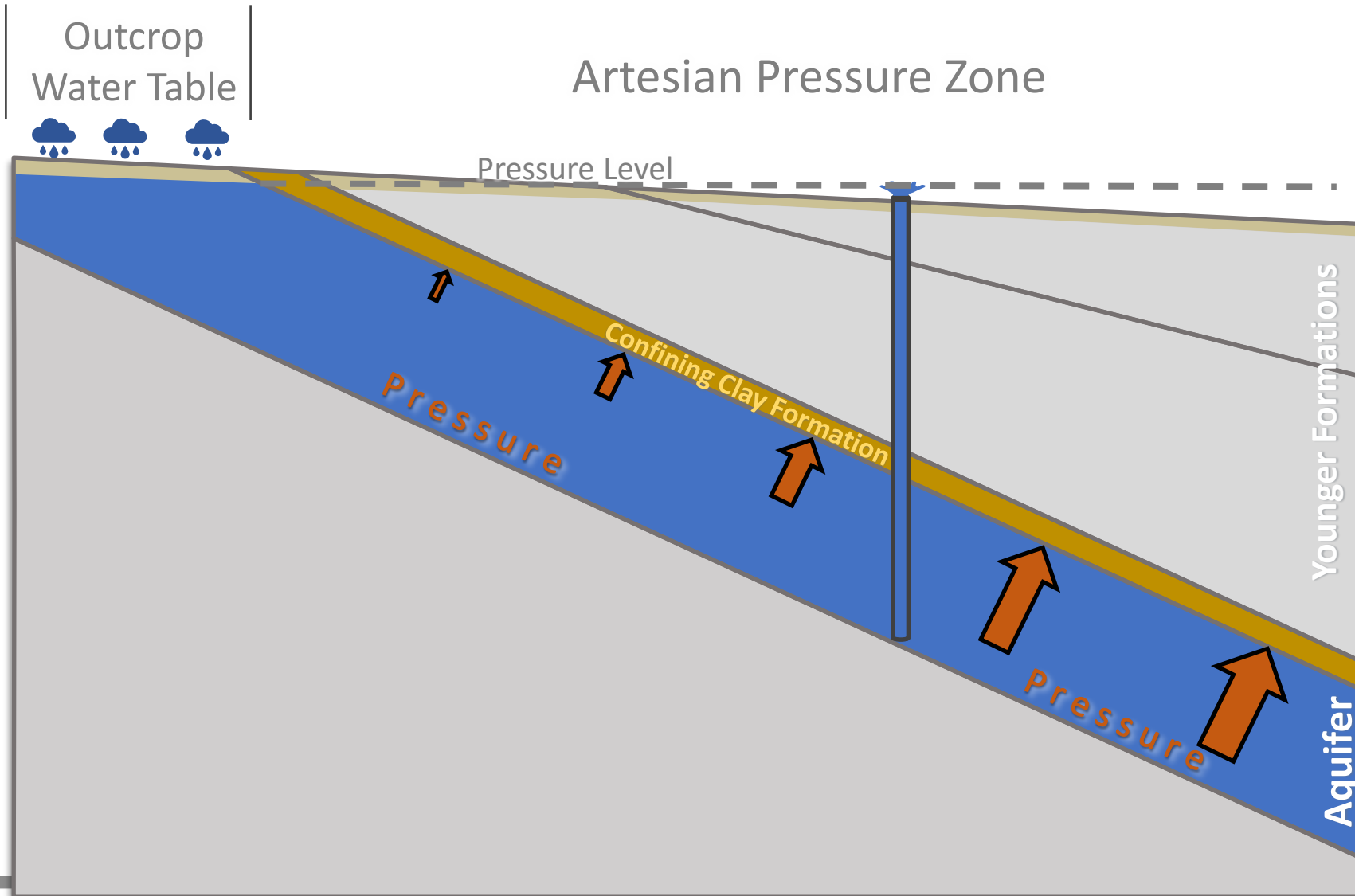
# Pressure Example



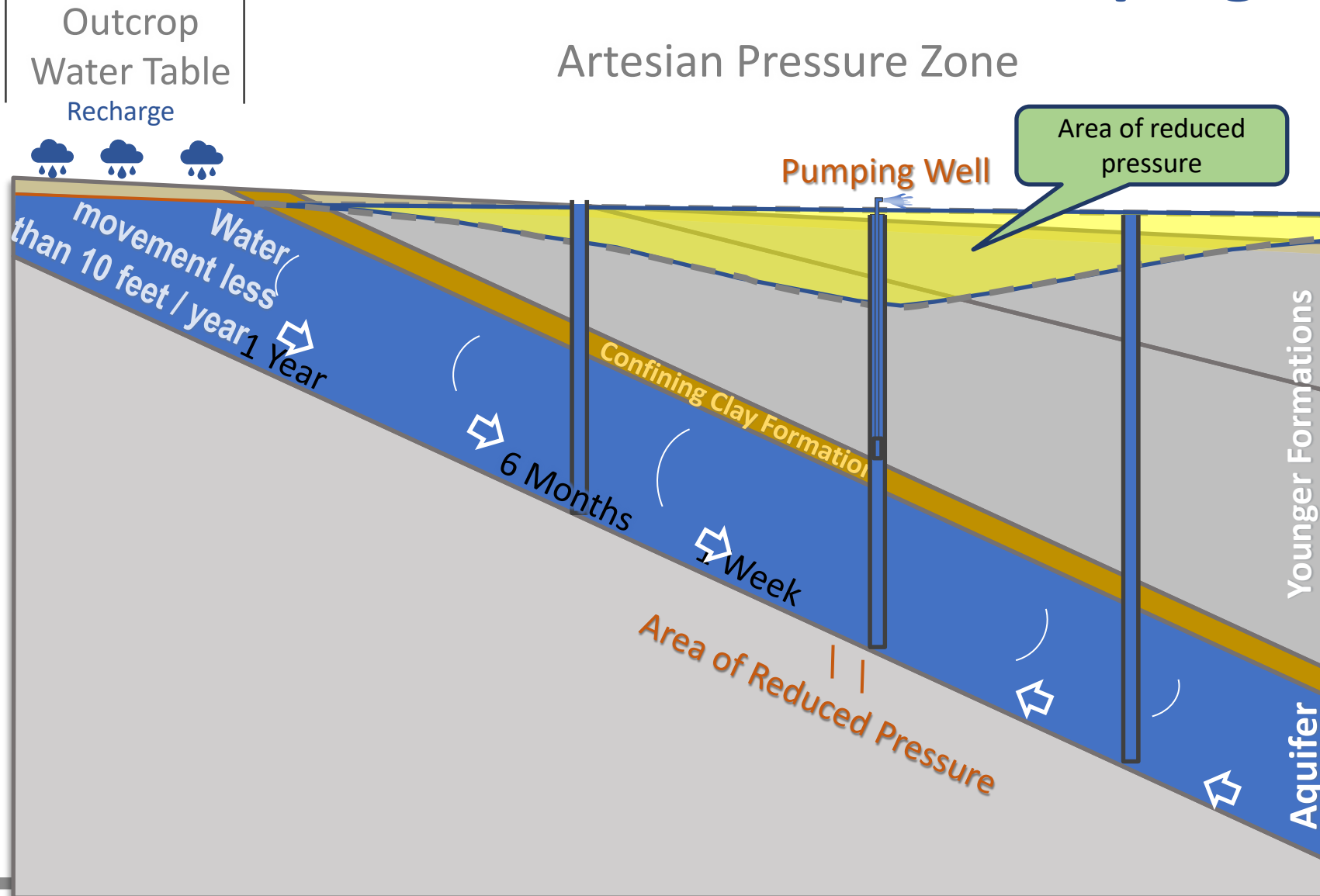




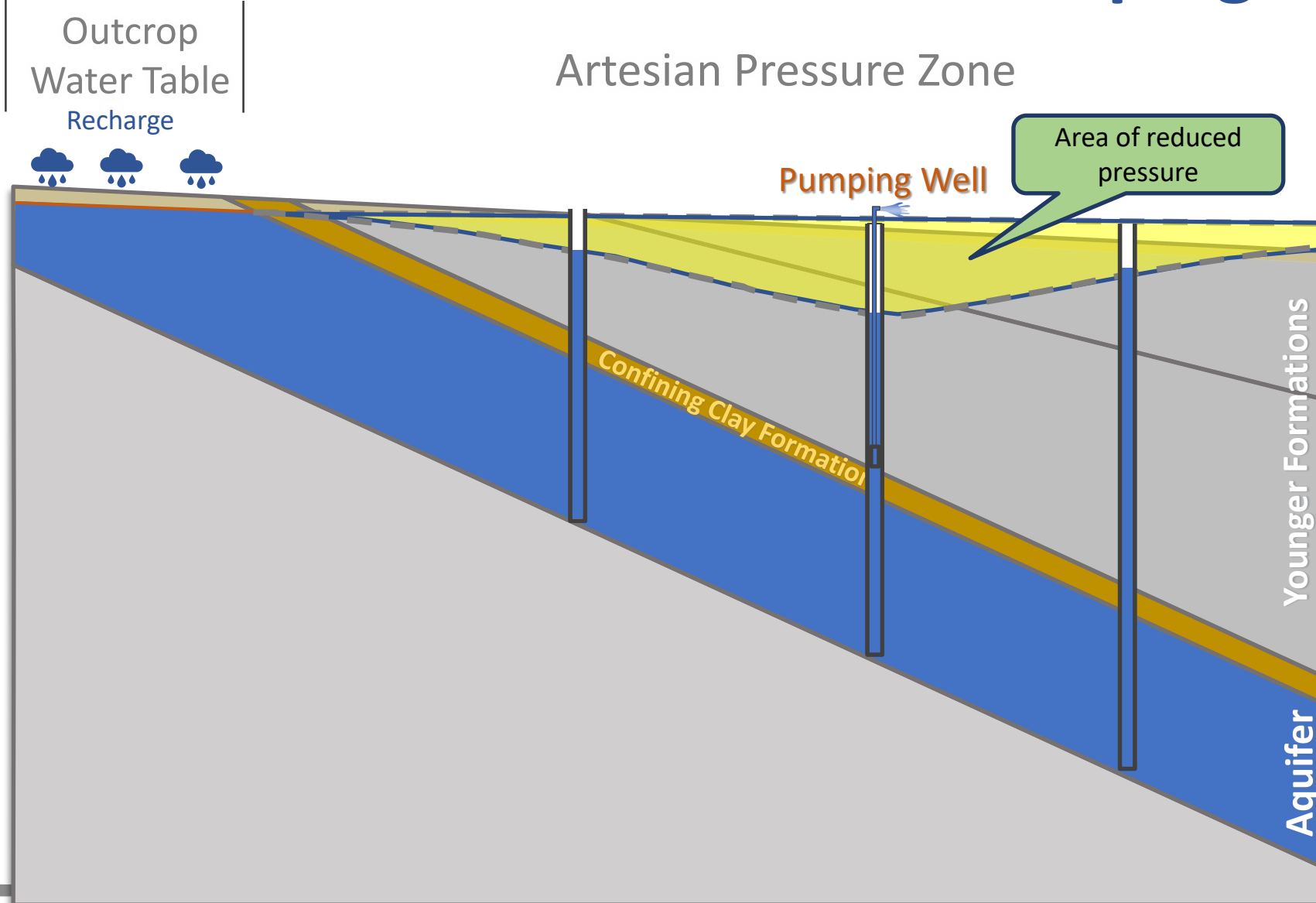
# Idealized Dipping Artesian Aquifer



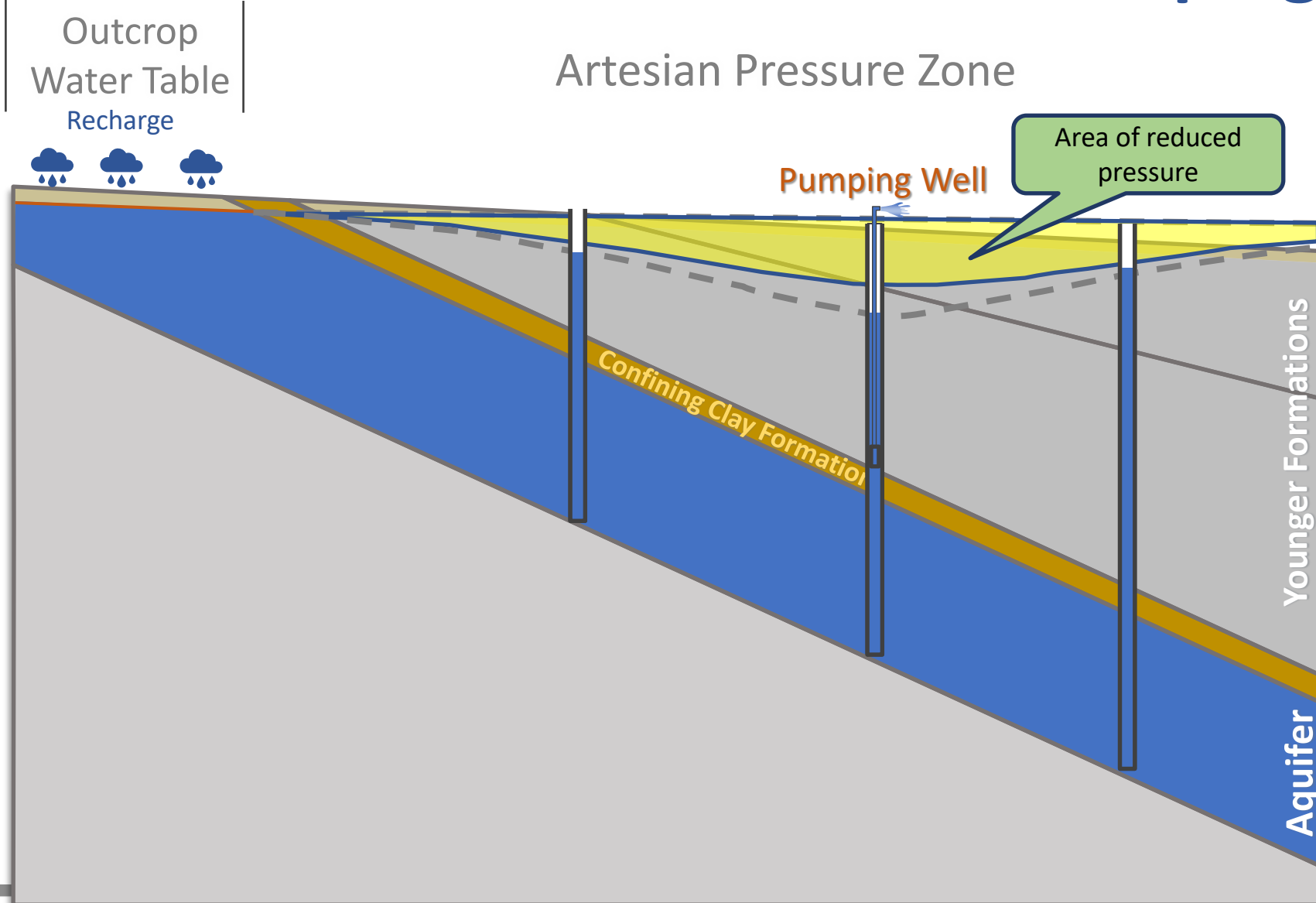
# Pressure Reduction due to Pumping



# Pressure Reduction due to Pumping



# Pressure Rise with Decrease in Pumping



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# GCD Authority: Evolving Purpose

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