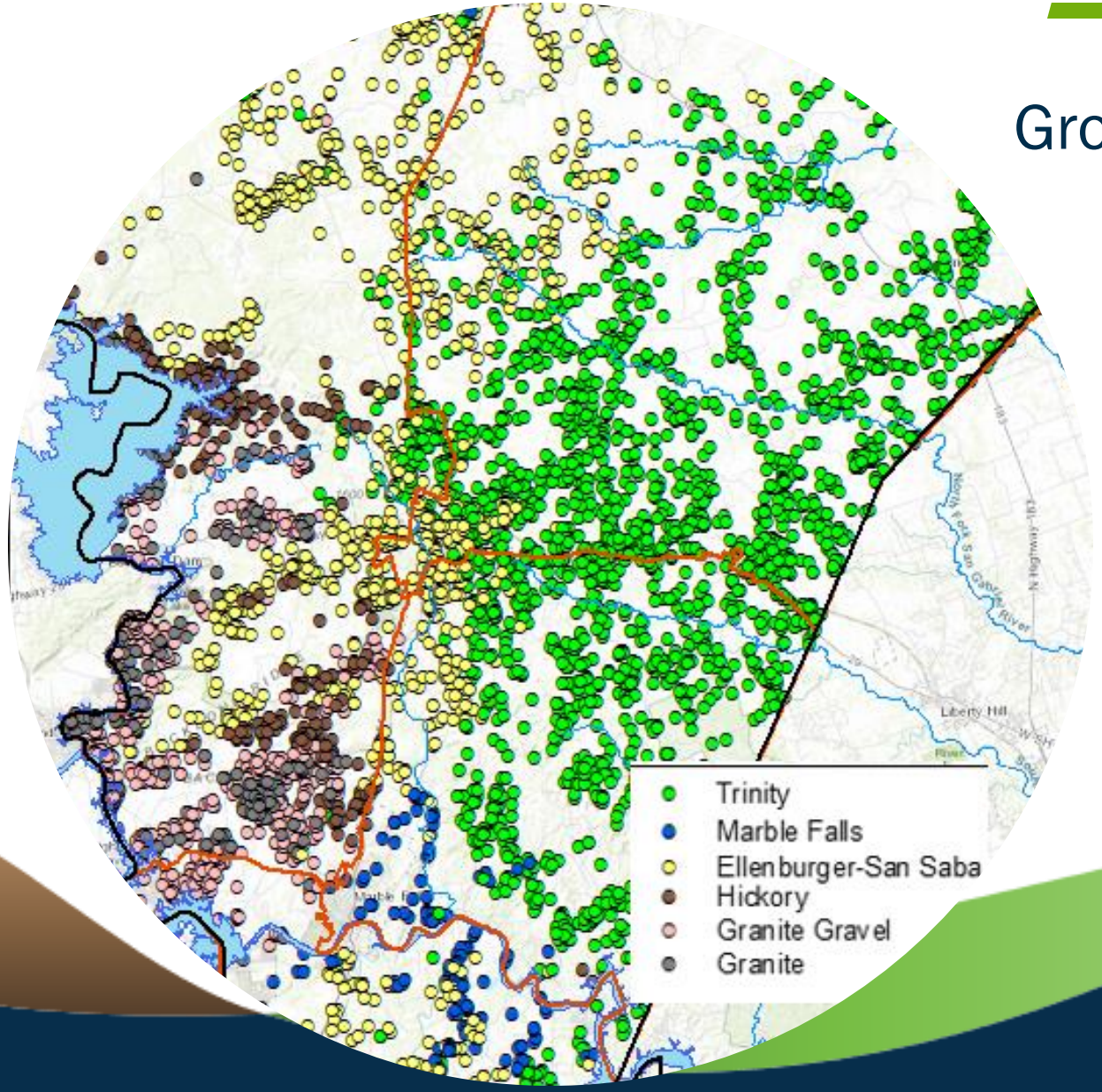


Groundwater Availability of Burnet County

Presented to:

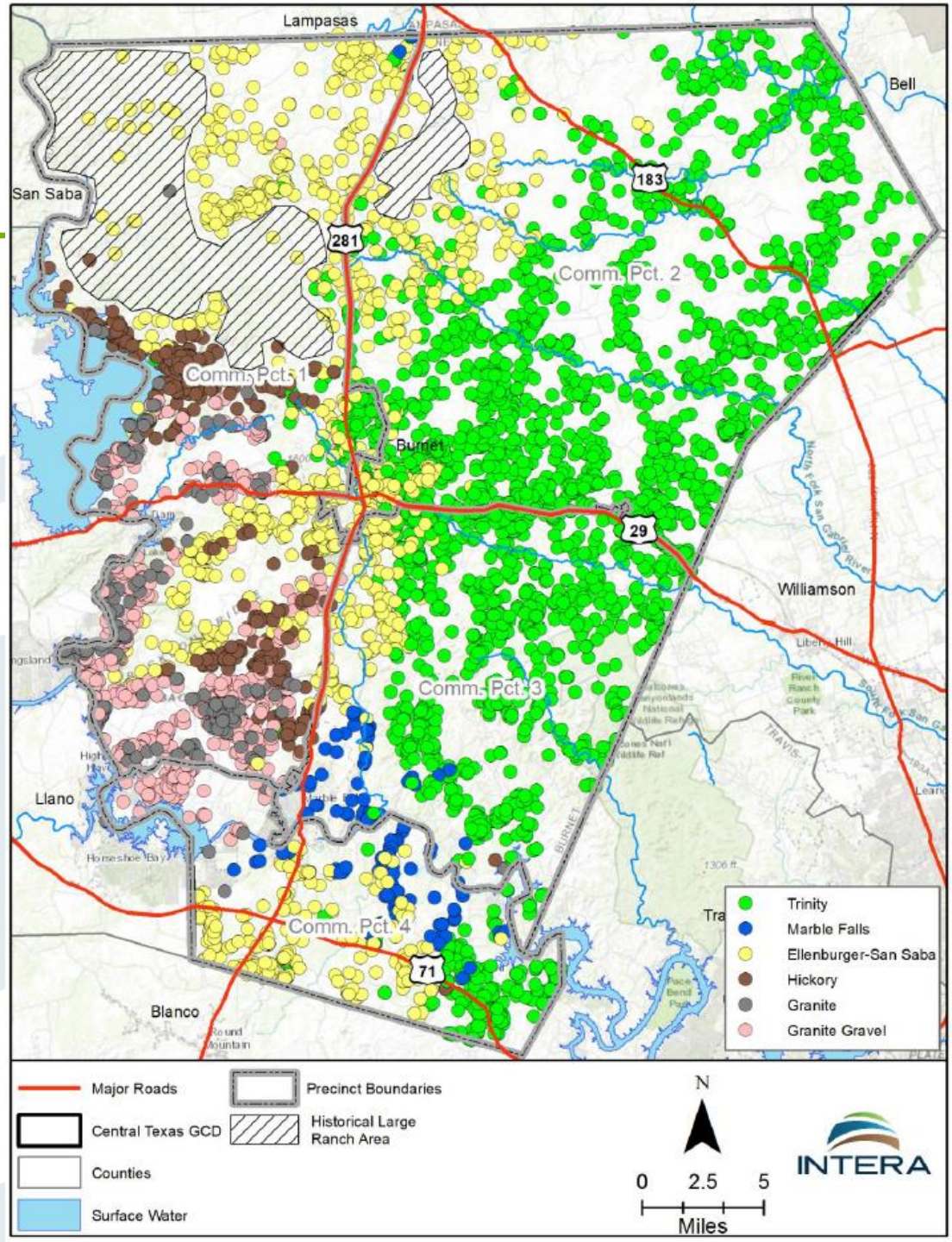
Burnet County
Commissioners Court

December 10, 2024

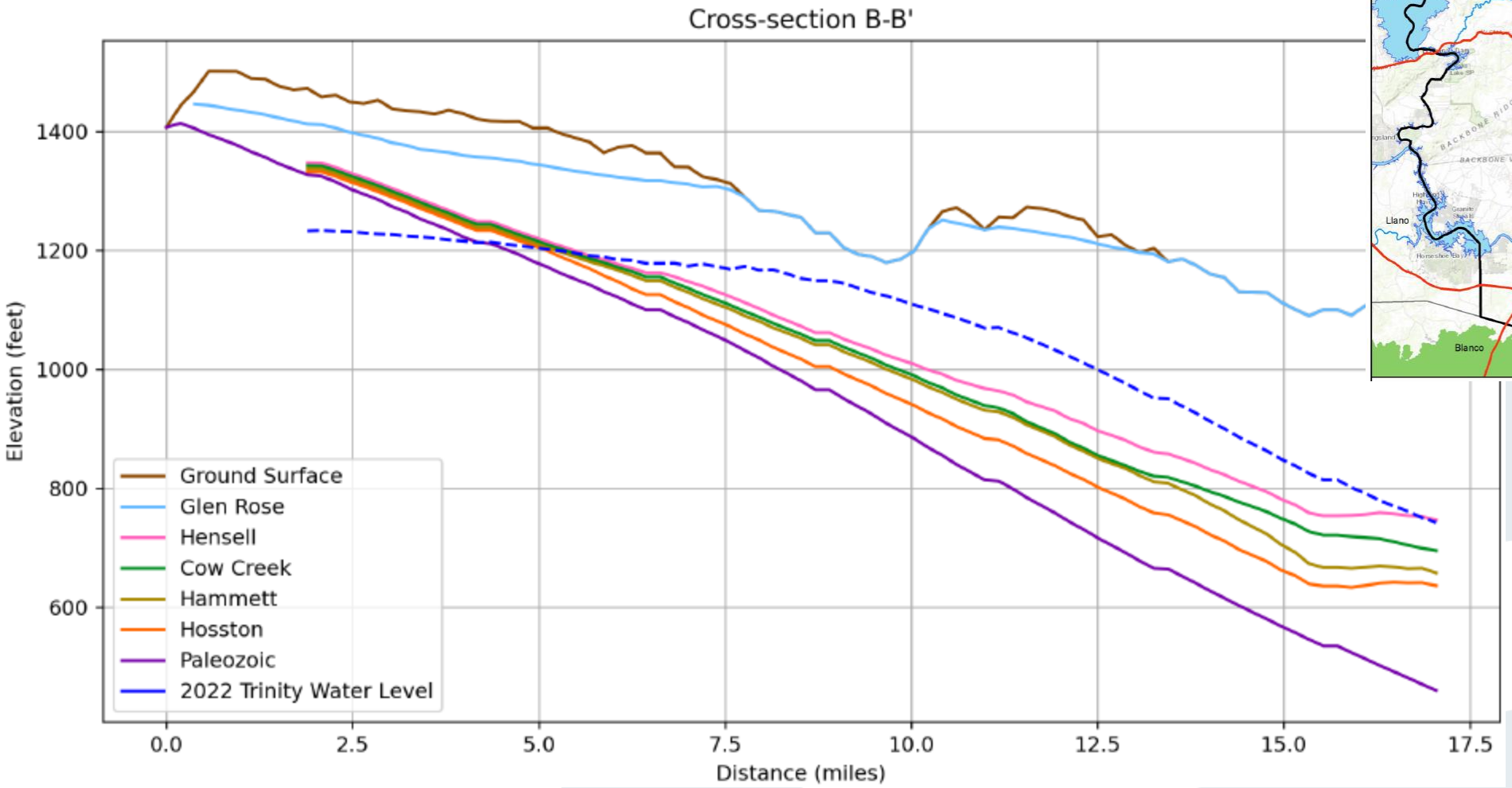
INTERA

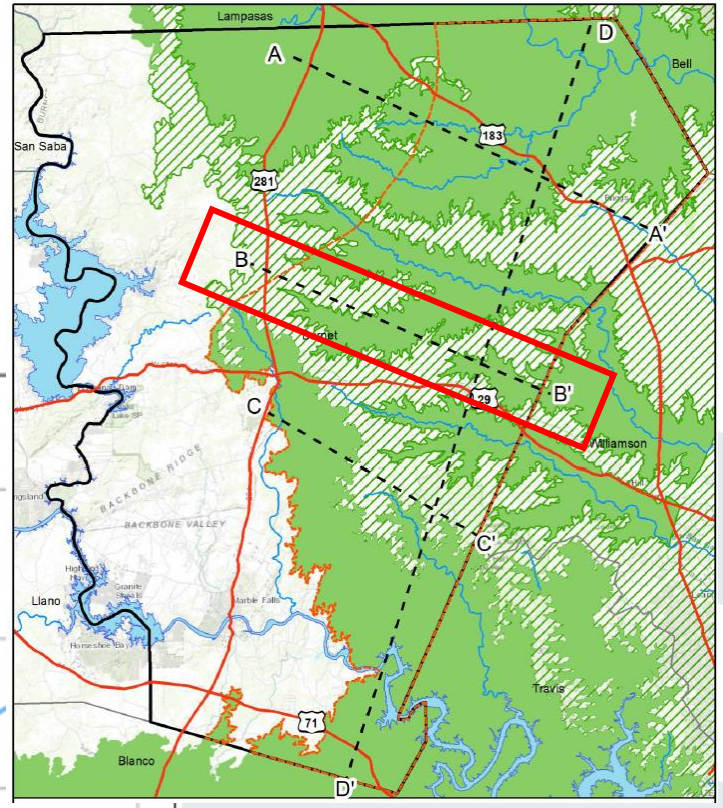
Objectives

- Perform an updated study of the groundwater resources of Burnet County
  - Structure (aquifer elevations and thicknesses)
  - Properties (aquifer productivity)
  - Water levels and available drawdown
  - Water quality
  - Recharge and discharge



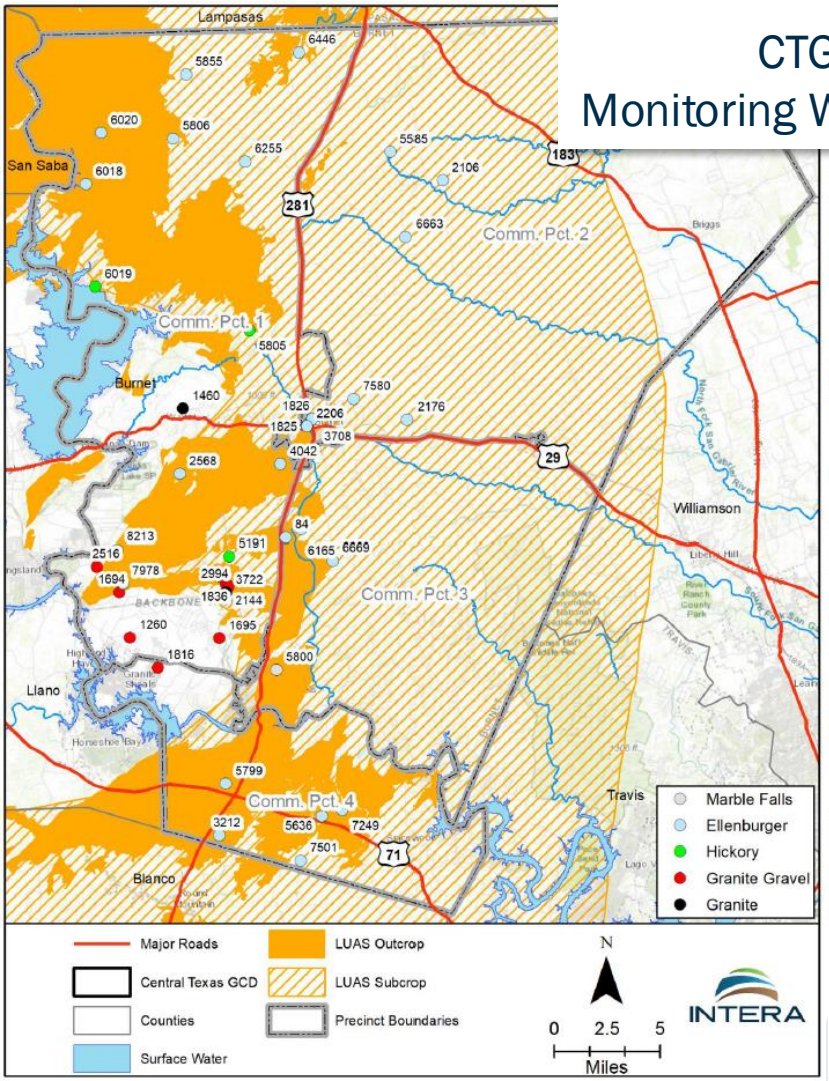
Structure: Aquifer Elevations and Thicknesses



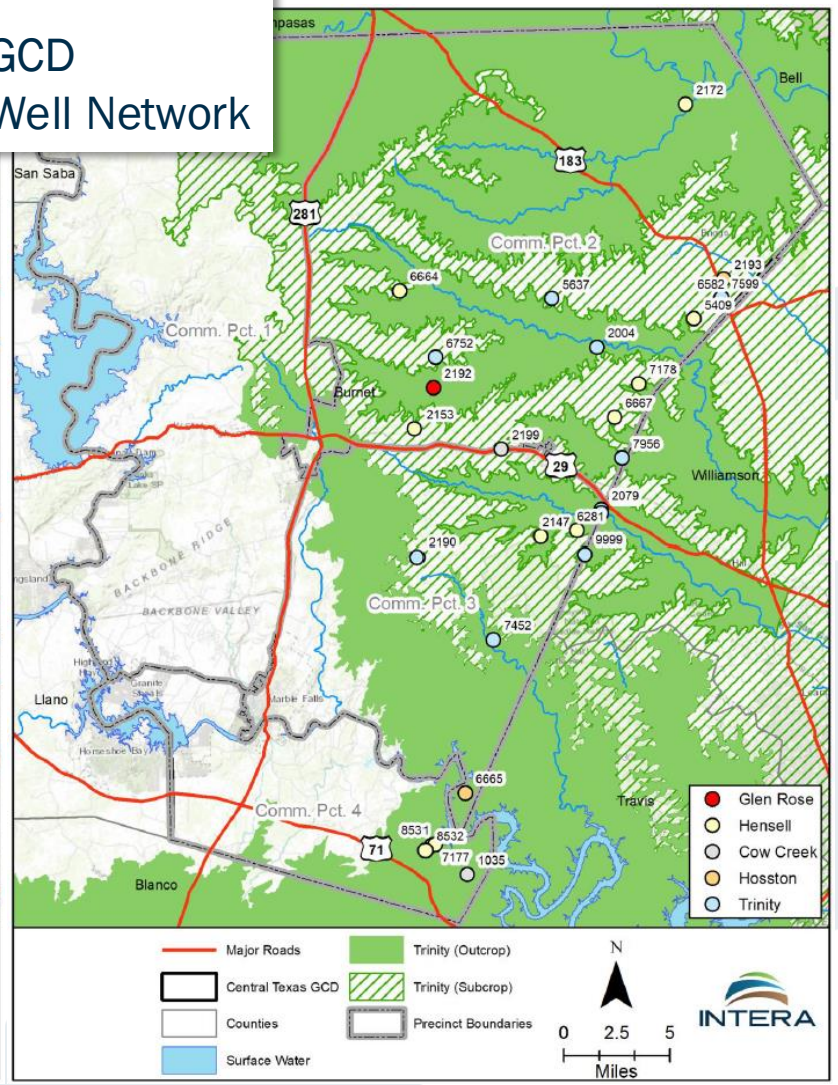


Water Levels

CTGCD
Monitoring Well Network

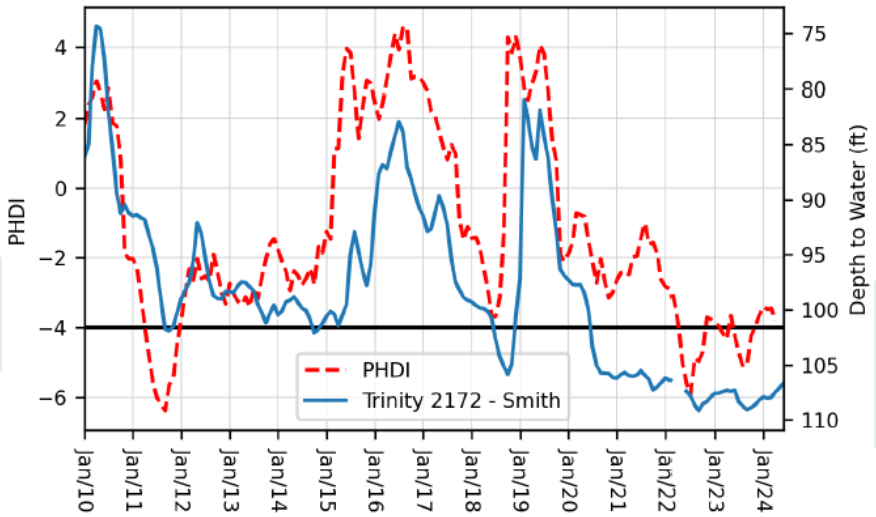


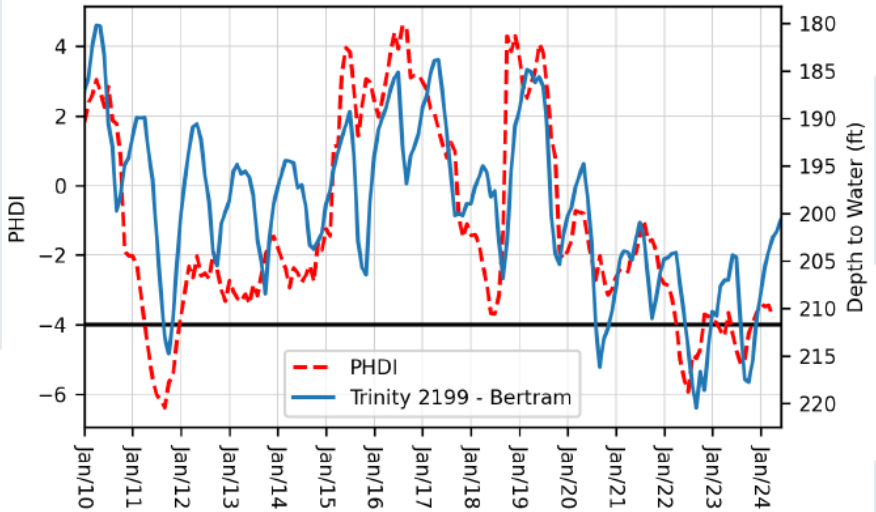
LUAS Well Locations



Trinity Well Locations

Hydrograph Examples

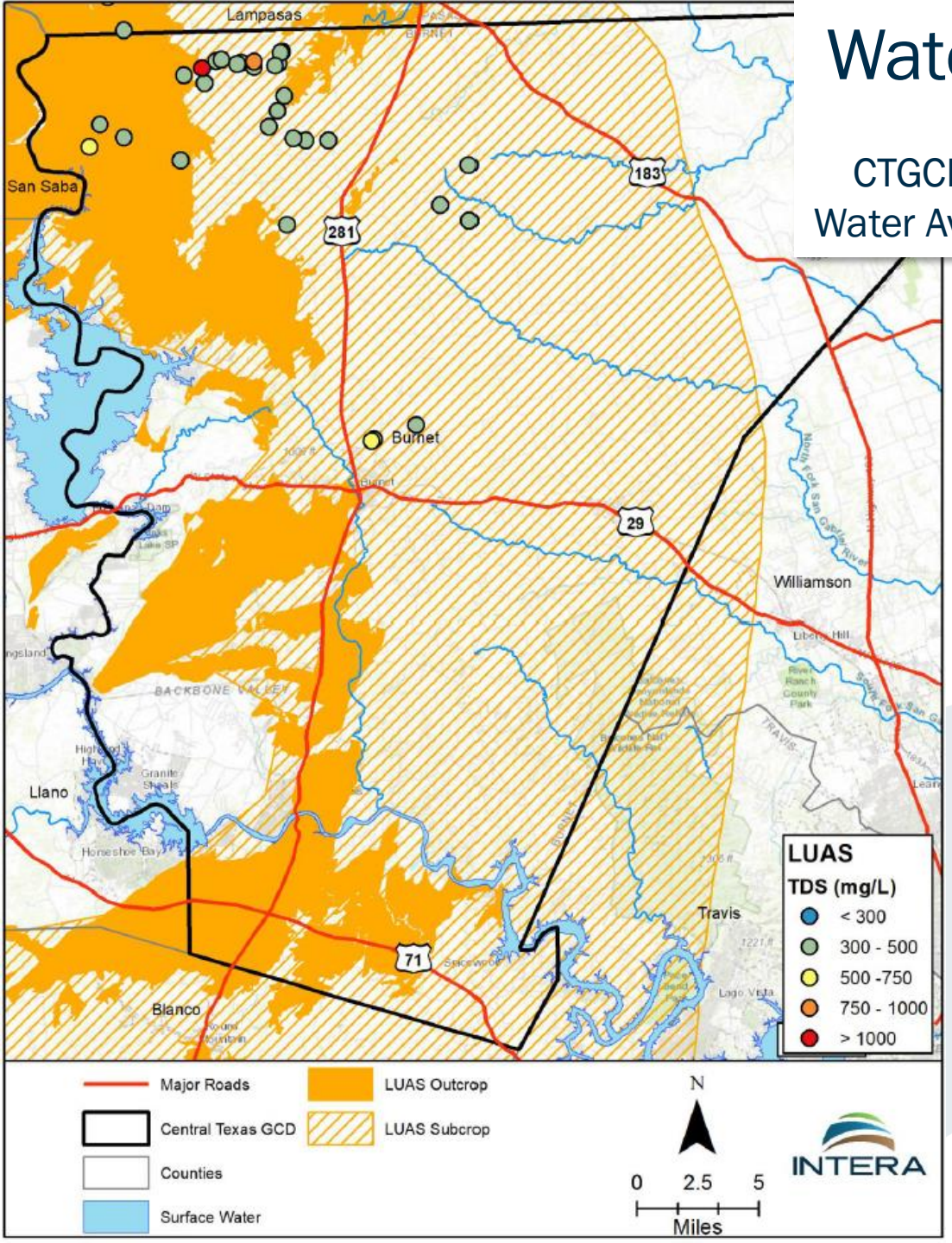


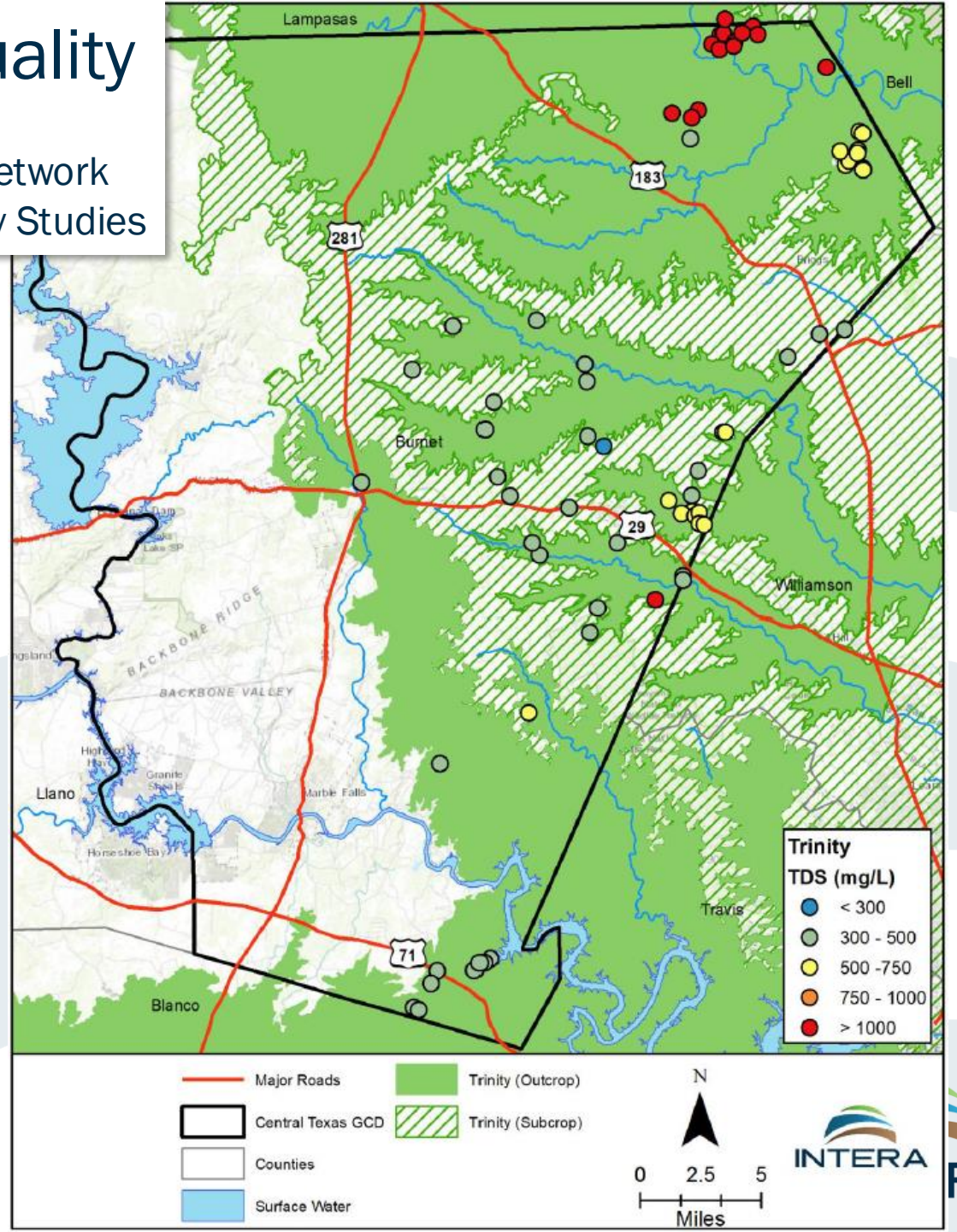


INTERA

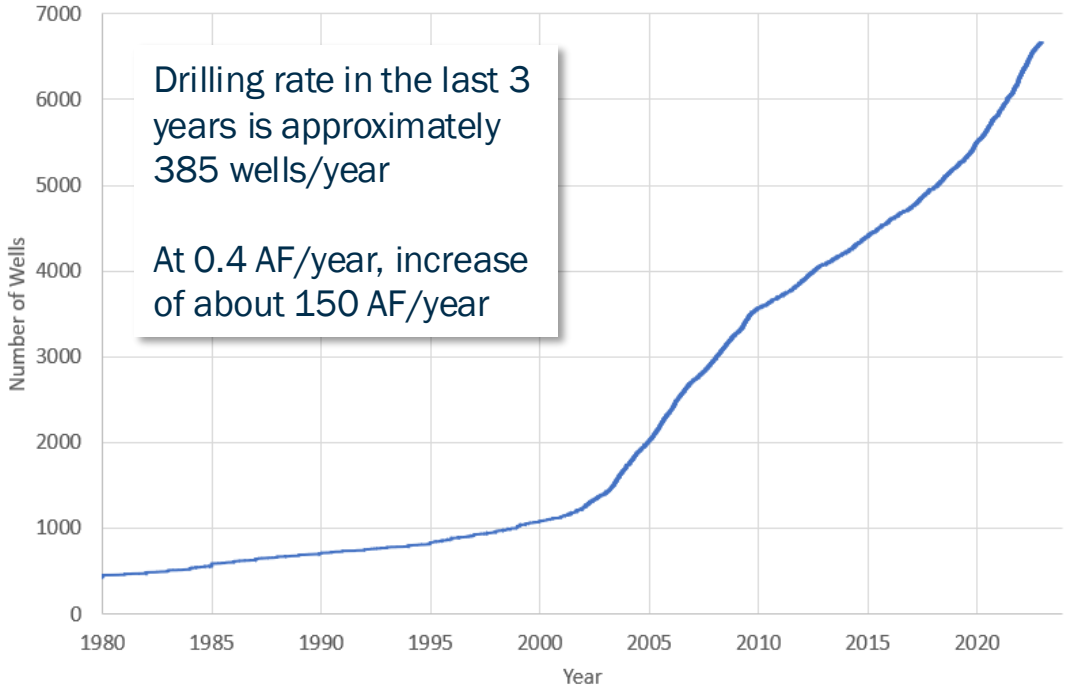
Water Quality

CTGCD Well Network
Water Availability Studies

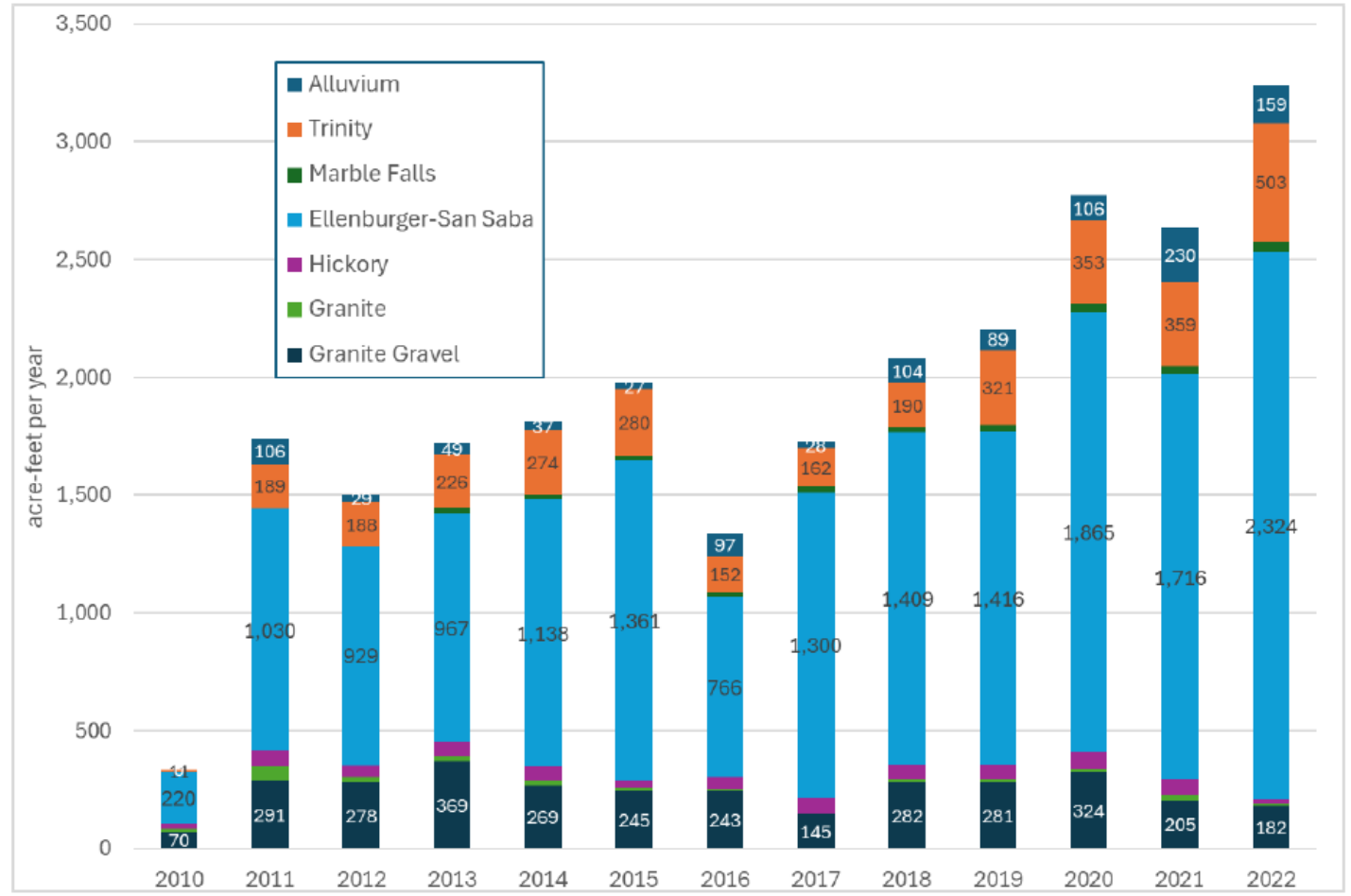




Number of Registered Wells



Reported Pumping



Exempt pumping from private wells is not reported, and is estimated to be about an equal amount for 2020, **~3,000 AFY**

INTERA

Summary: Positives and Challenges

- **Broad Availability:** Groundwater resources sufficient for private wells are widely available across Burnet County.
- **Good Productivity in Some Areas**
  - **Trinity Aquifer:** Supports small public water supply wells (<100 gpm).
  - **Ellenburger Aquifer:** Can support large public water supply wells (>500 gpm).
- **Relatively Stable Water Levels:** Aquifer water levels have not significantly decreased due to pumping in much of the county.
- **Good Water Quality:** Groundwater is potable and of high quality throughout the county.
- **Sustainable Usage:** Overall pumping does not exceed aquifer recharge, ensuring sustainability.
- **Recharge Capacity:** Ellenburger Aquifer has significant recharge potential, vital for future groundwater growth plans.

- **Some areas of Limited Availability:** Trinity Aquifer is unproductive in areas, LUAS and other aquifers can be hit and miss.
- **Trinity Aquifer challenges:**
  - Thin structure makes it vulnerable to drawdown from pumping. Productivity is lost sequentially in its formations (Hensell, Cow Creek, and Hosston).
  - Hosston formation may have poor water quality or lack of productivity.
- **Increasing Demand:**
  - Increased pumping and drought conditions have led to shallow well failures.
  - Growth and pumping pressures in the northeast and eastern parts of the county raise concerns about aquifer sustainability.

INTERA

Recommendations

- Carefully evaluate groundwater supply proposals that consist of heavily concentrated pumping in the Trinity Aquifer to protect existing and future well yields.
- Expand the water level monitoring network in vulnerable Trinity Aquifer areas, such as north of US Hwy 183.
- Improve recharge and discharge estimates for the Ellenburger to support future water resource planning.
- **Note:** CTGCD has concerns with growth and increased pumping occurring or projected to occur in parts of the Trinity aquifer, particularly in the northeast and eastern parts of the county, and has committed to further studies in these areas to quantify the aquifer limitations and to consider adopting specific rules in groundwater management zone.

INTERA