

# Locations with High Reliance on Private Wells: Not Always Where You Think They Are

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74820

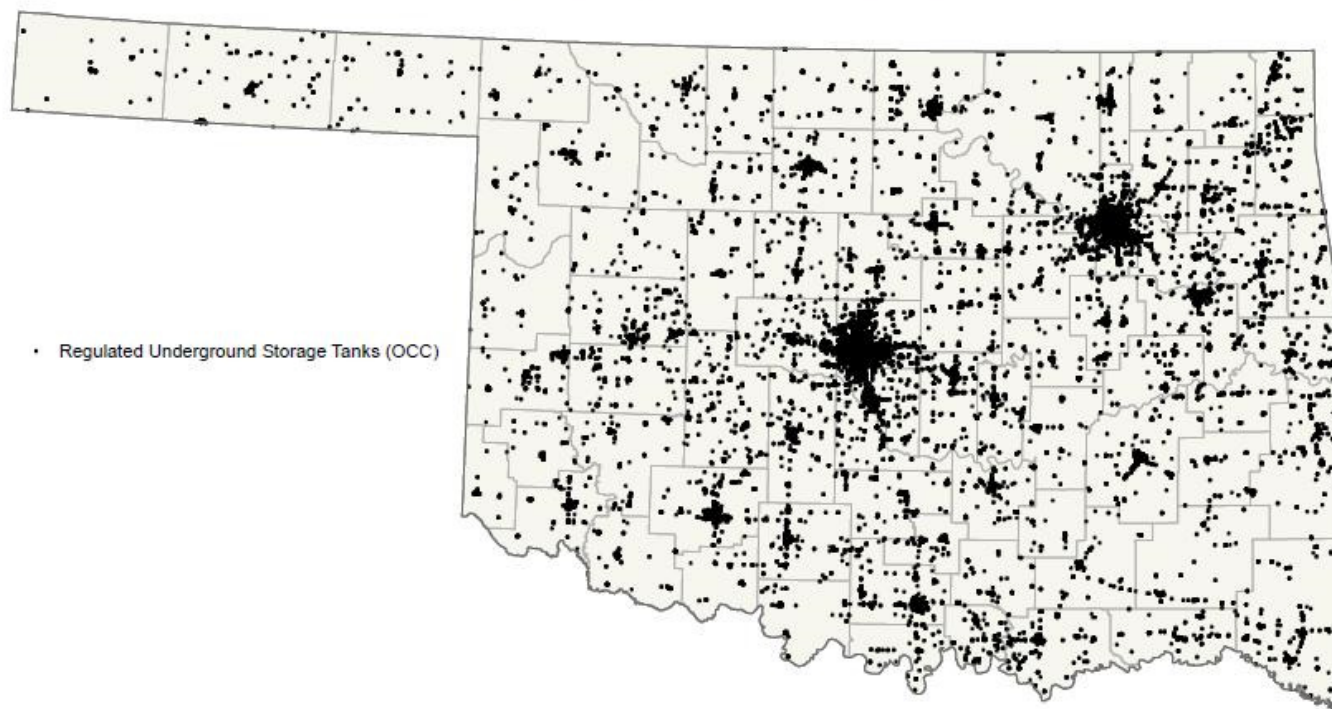


## Acknowledgement

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## Oklahoma Corporation Commission Regulated Underground Storage Tanks

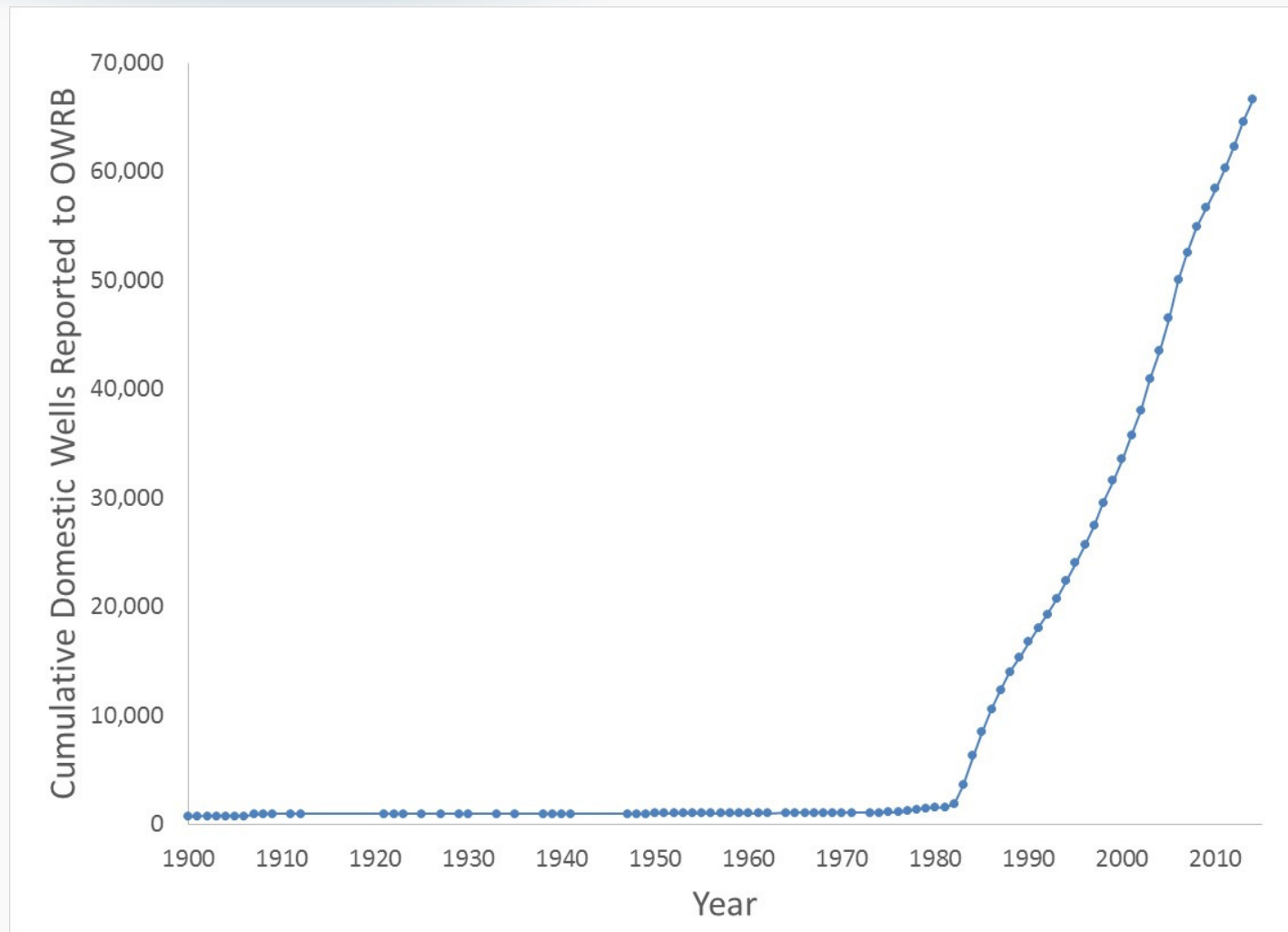


This map shows the locations of underground storage tanks as identified in the Oklahoma Corporation Commission's UST database. For more information regarding the UST program visit the OCC Petroleum Storage Tank Division's web site at ( <http://www.occ.state.ok.us/Divisions/PST/pst.htm> )











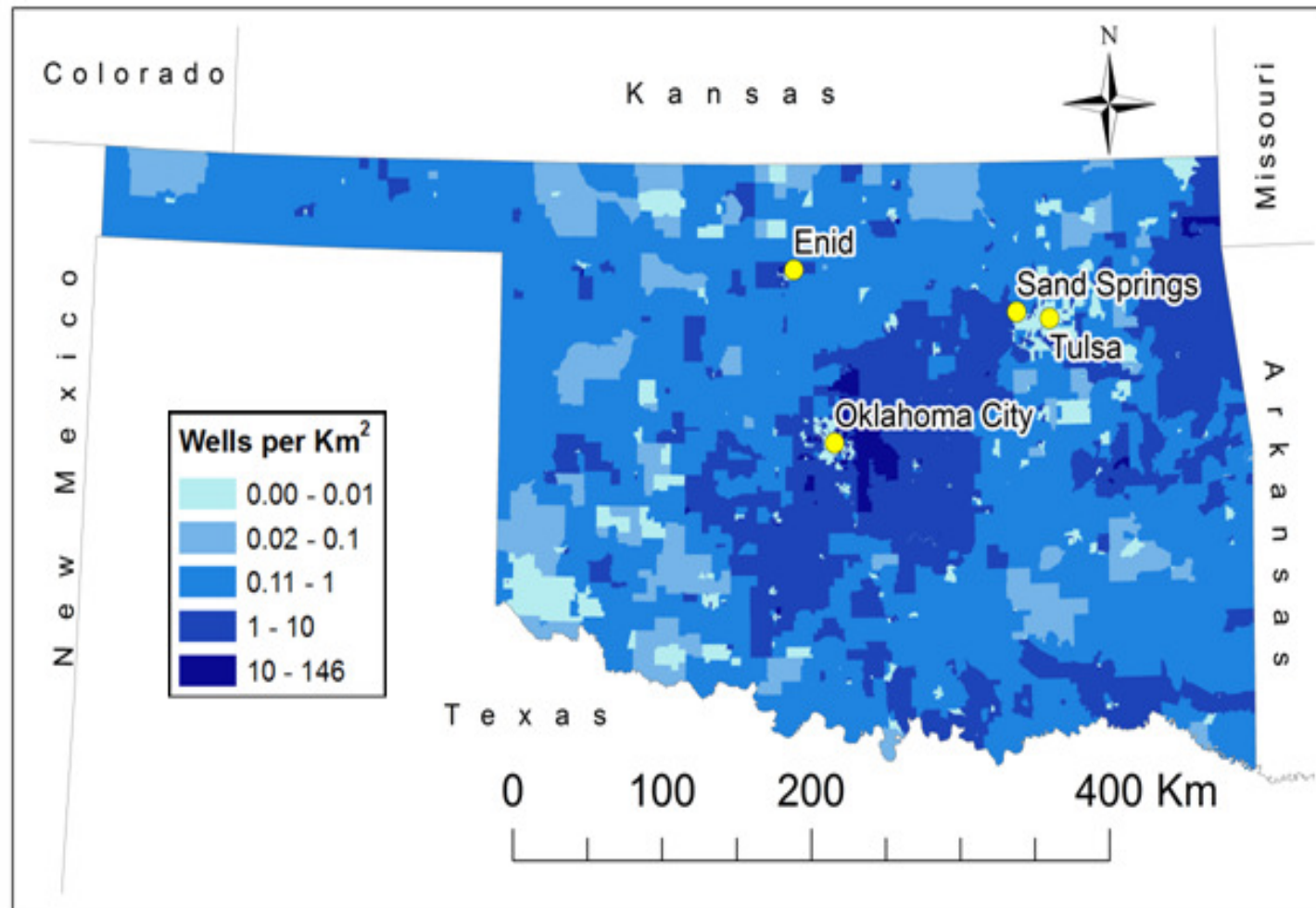
# Data Sources

- Well logs
  - Vary by state:
    - Permit required?
    - Water rights?
    - Historical duration?
    - Completeness?
    - Availability
      - Compiled electronically?
      - Legal to distribute?

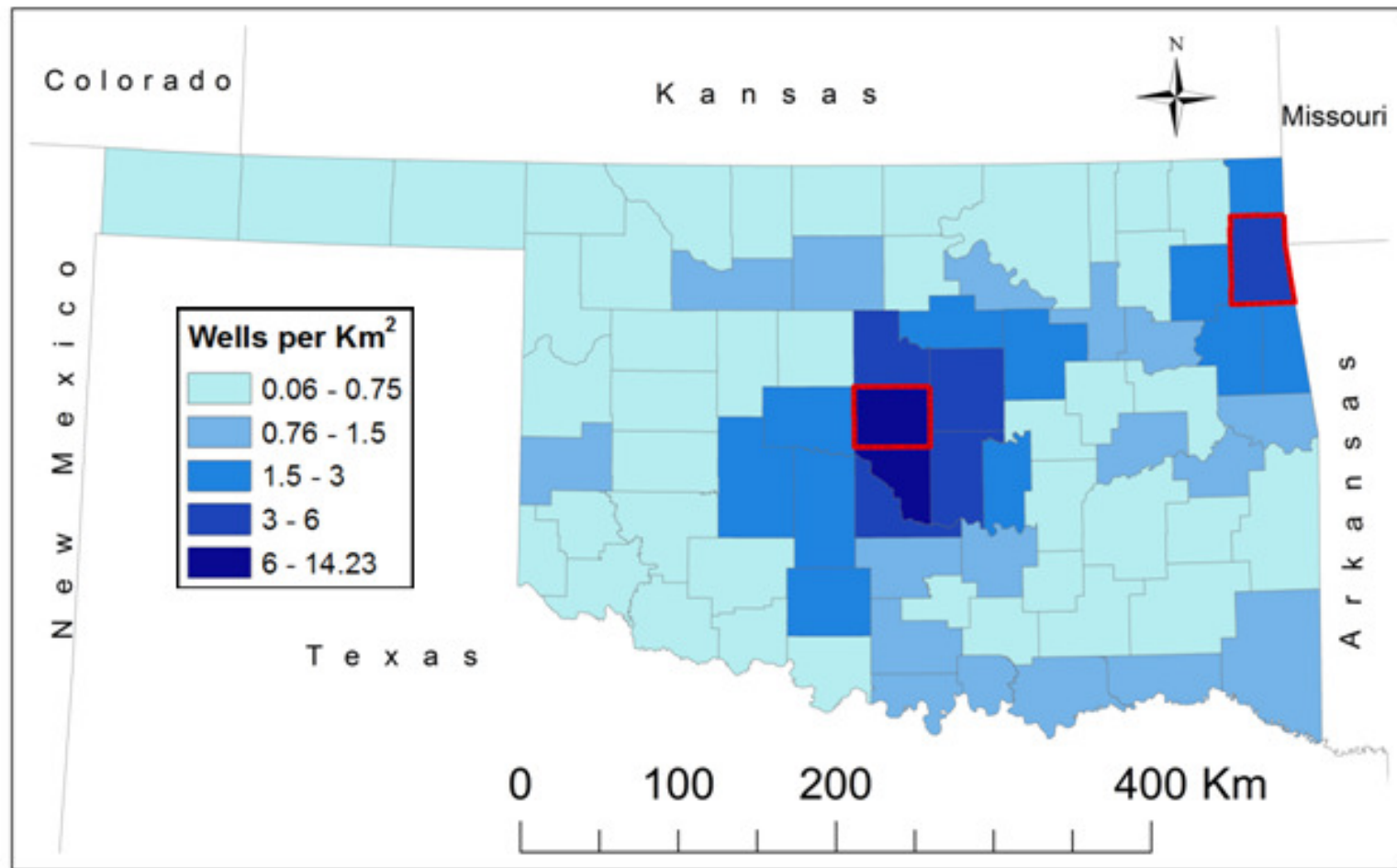


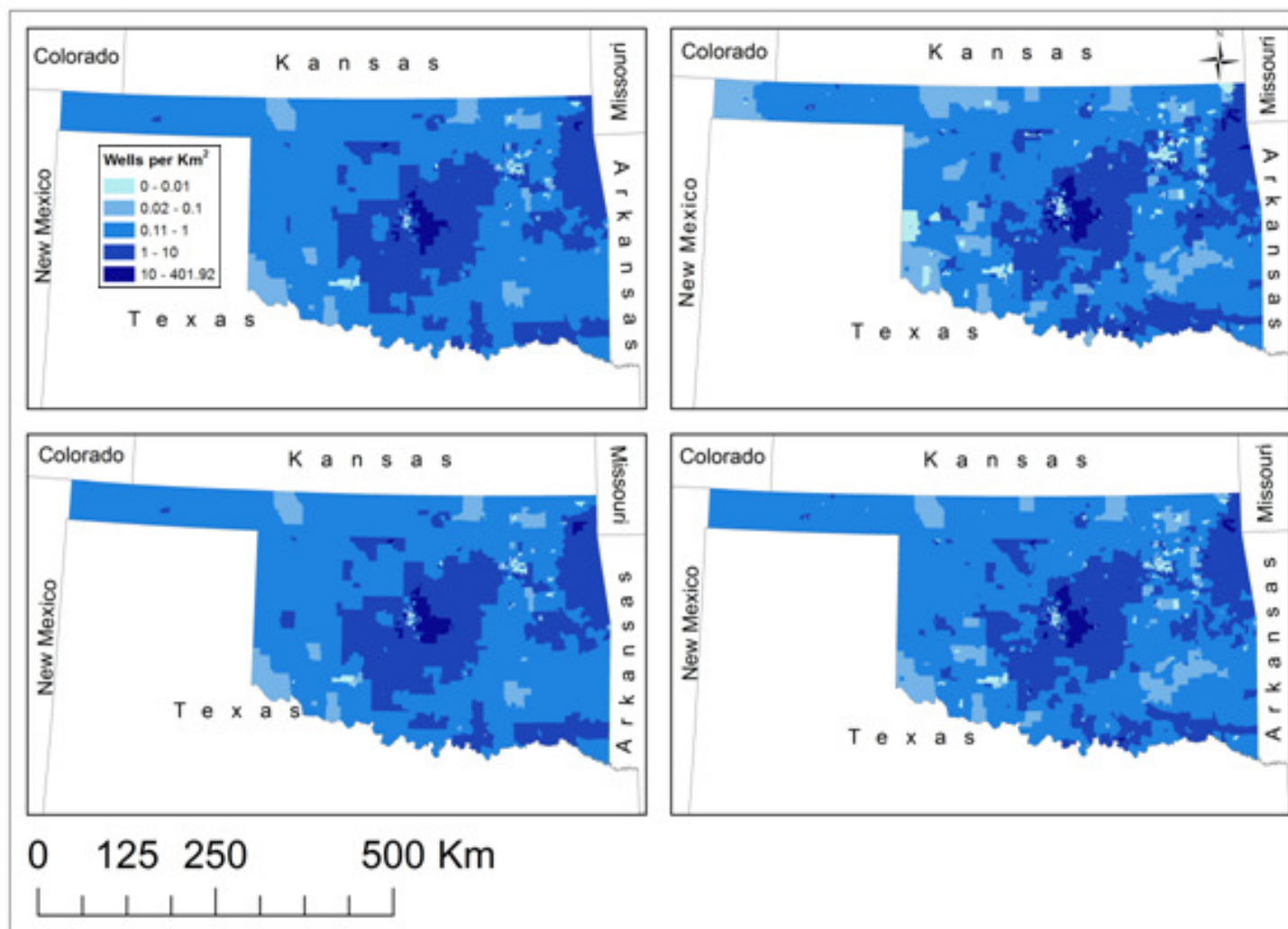
## Alternatives

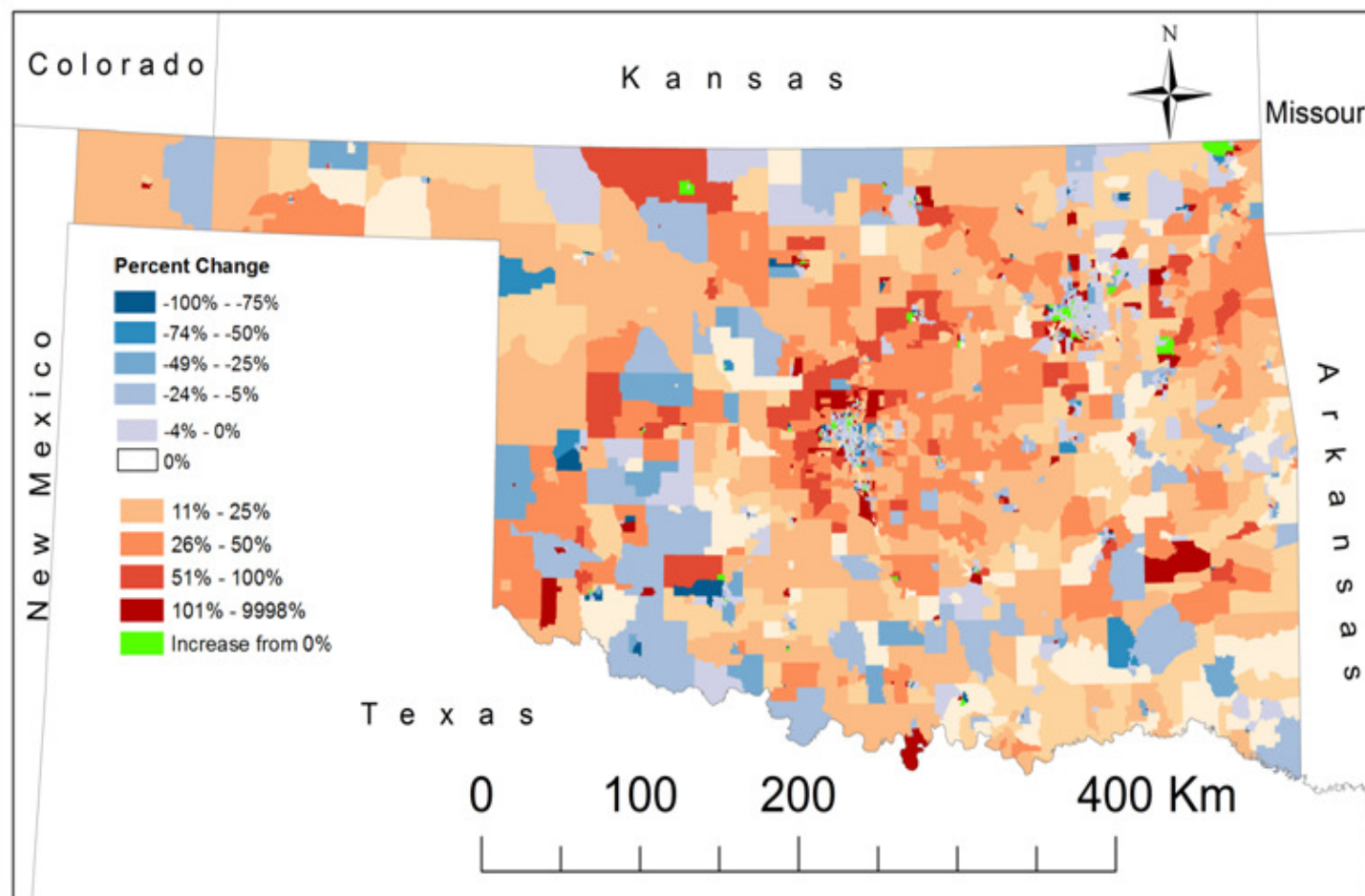
- Negative inference
  - Where are there no water mains/water customers?
    - Large number of purveyors (747 in Oklahoma)
- County Health Departments
- County assessor records
  - 77 counties in Oklahoma
- American Community Survey question on cost of water/sewer
- Long form 1990 Census
  - Public water system vs. private well



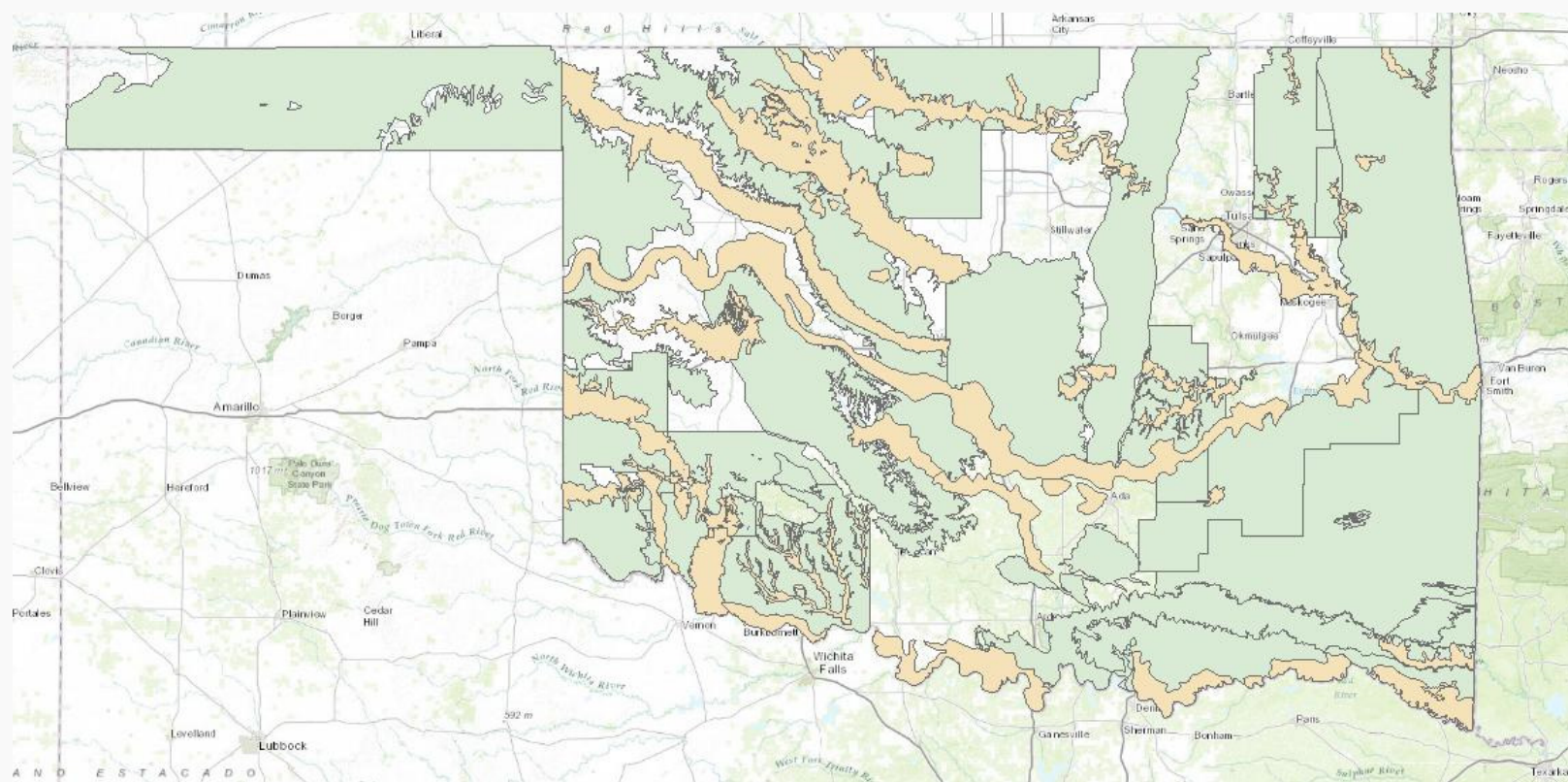


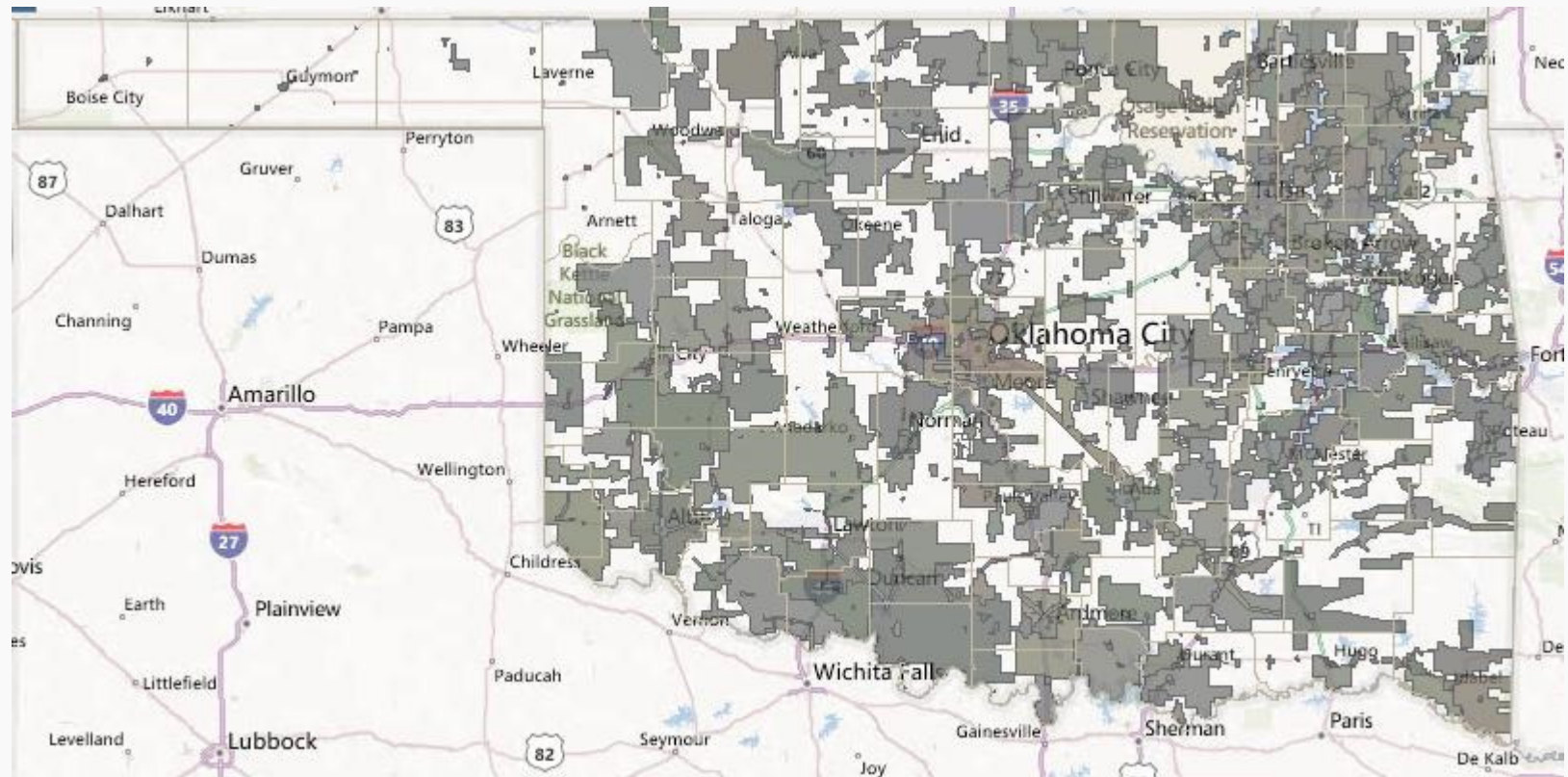




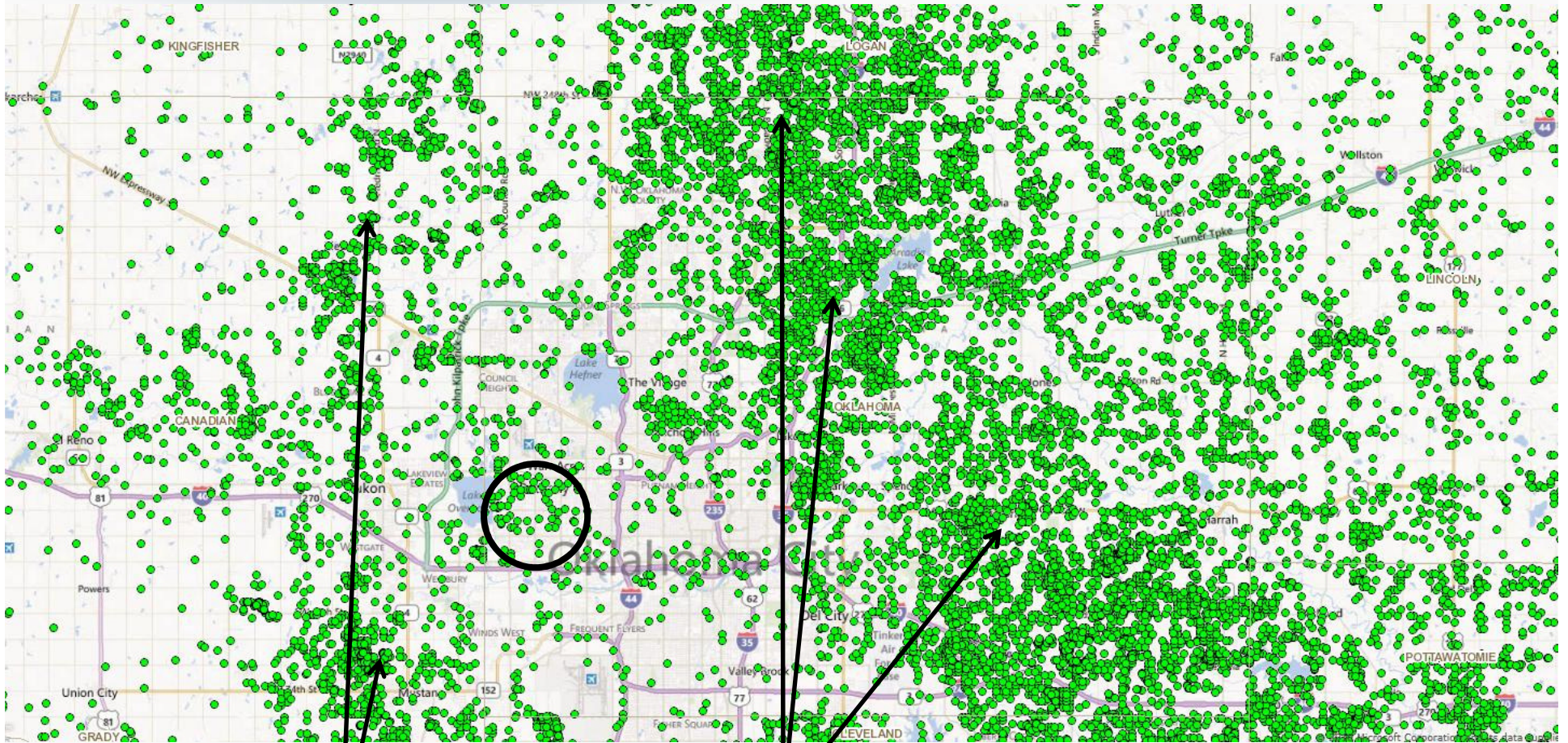








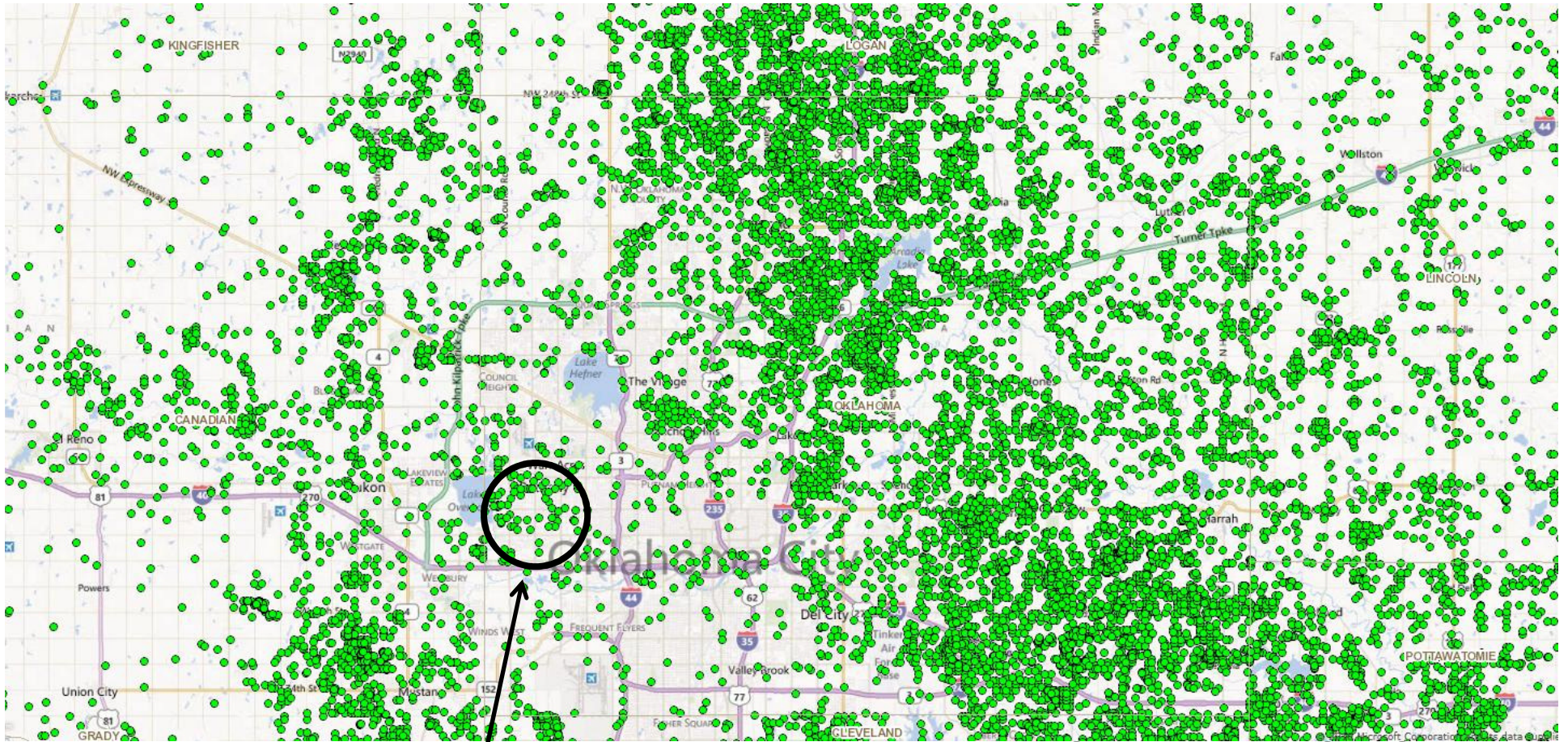




Most wells (all types considered) outside center city  
**Well Locations around Oklahoma City**



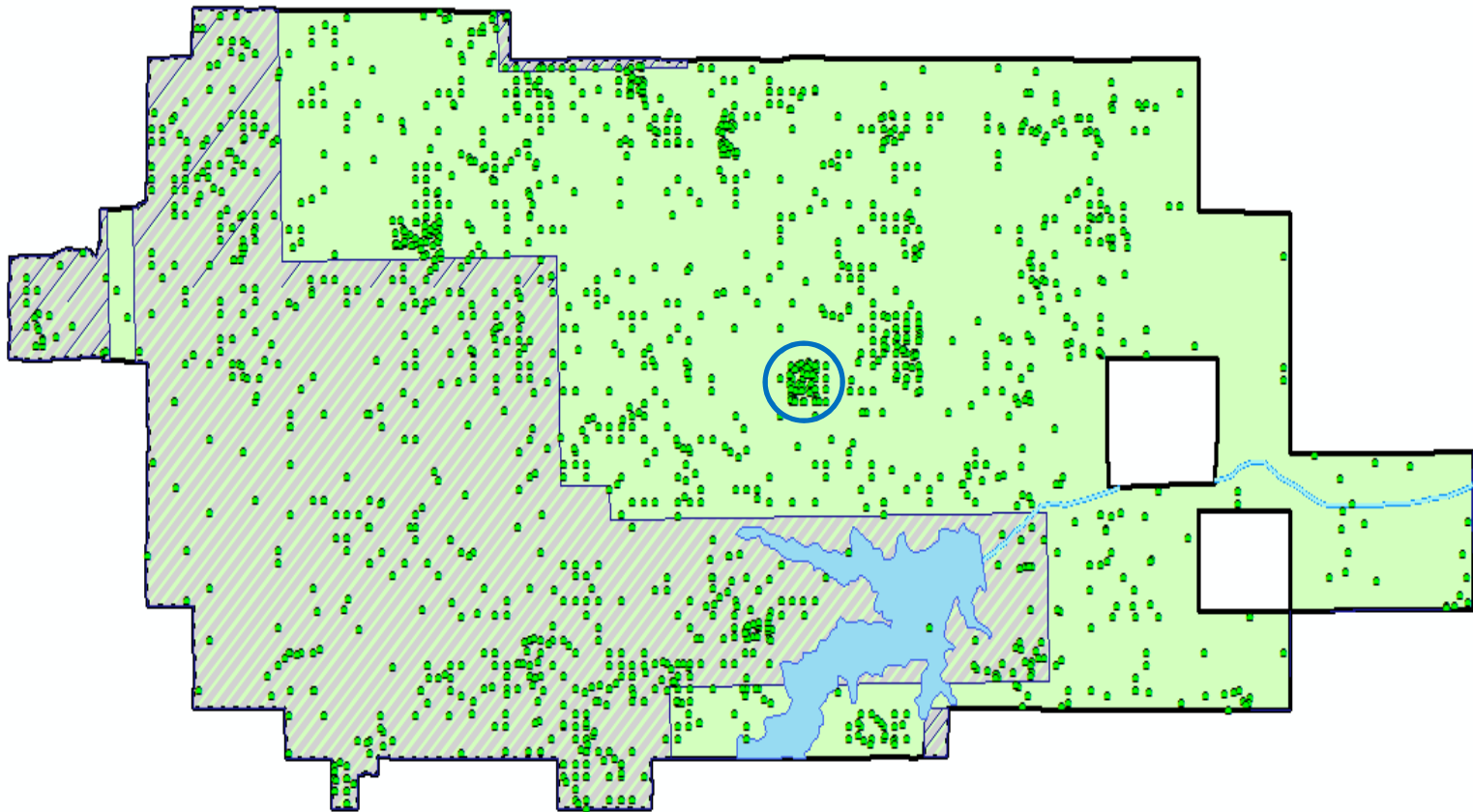
# Well Locations around Oklahoma City



Bethany—Independent City within OKC  
boundary  
Homes built in 1940s with individual wells



# Edmond, OK

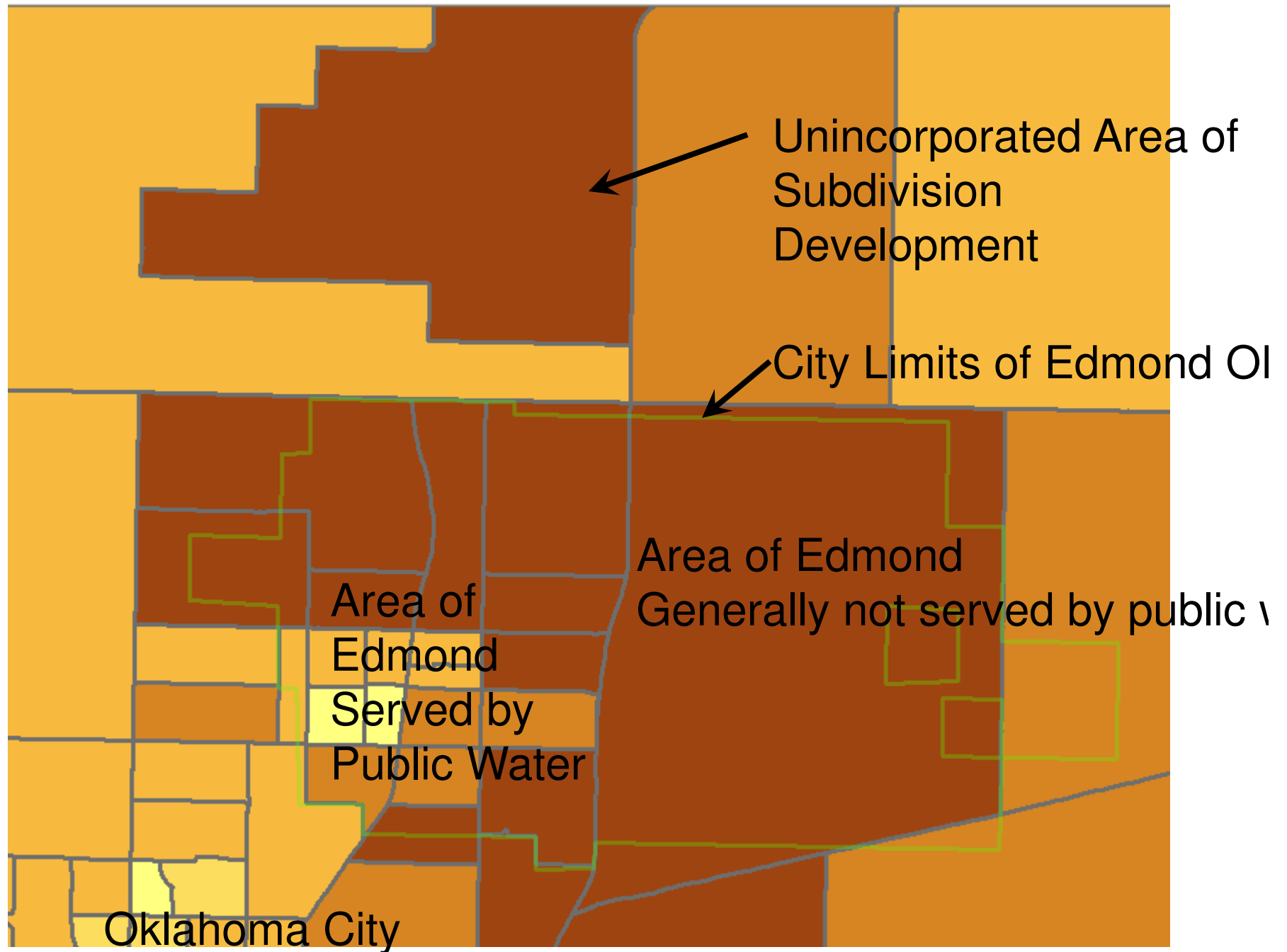


Public Water Supply System

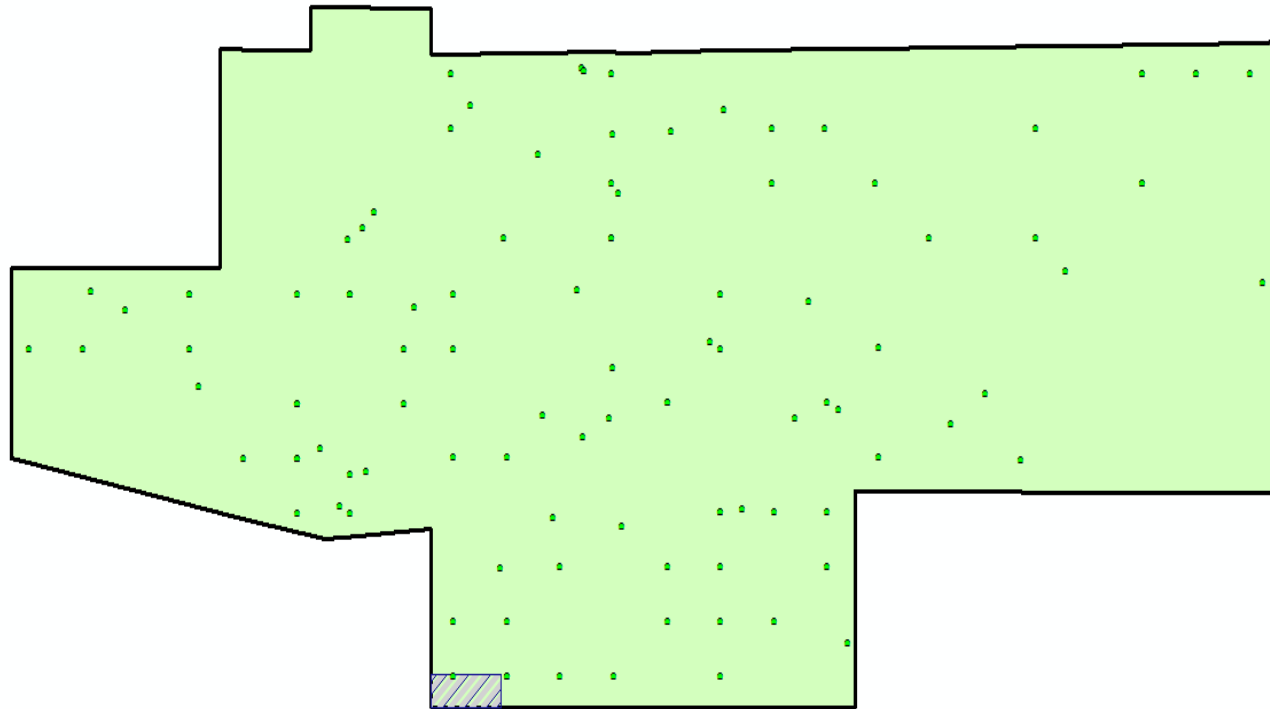


City Limits

- Water system not built to full boundaries
- Subdivisions on individual private wells
  - In circle above 77 homes counted, 55 wells reported
  - Houses built after 2005
- Census bureau classifies undeveloped land as rural
- Local densities higher than block group estimates



## Nicoma Park, OK



Public Water Supply System

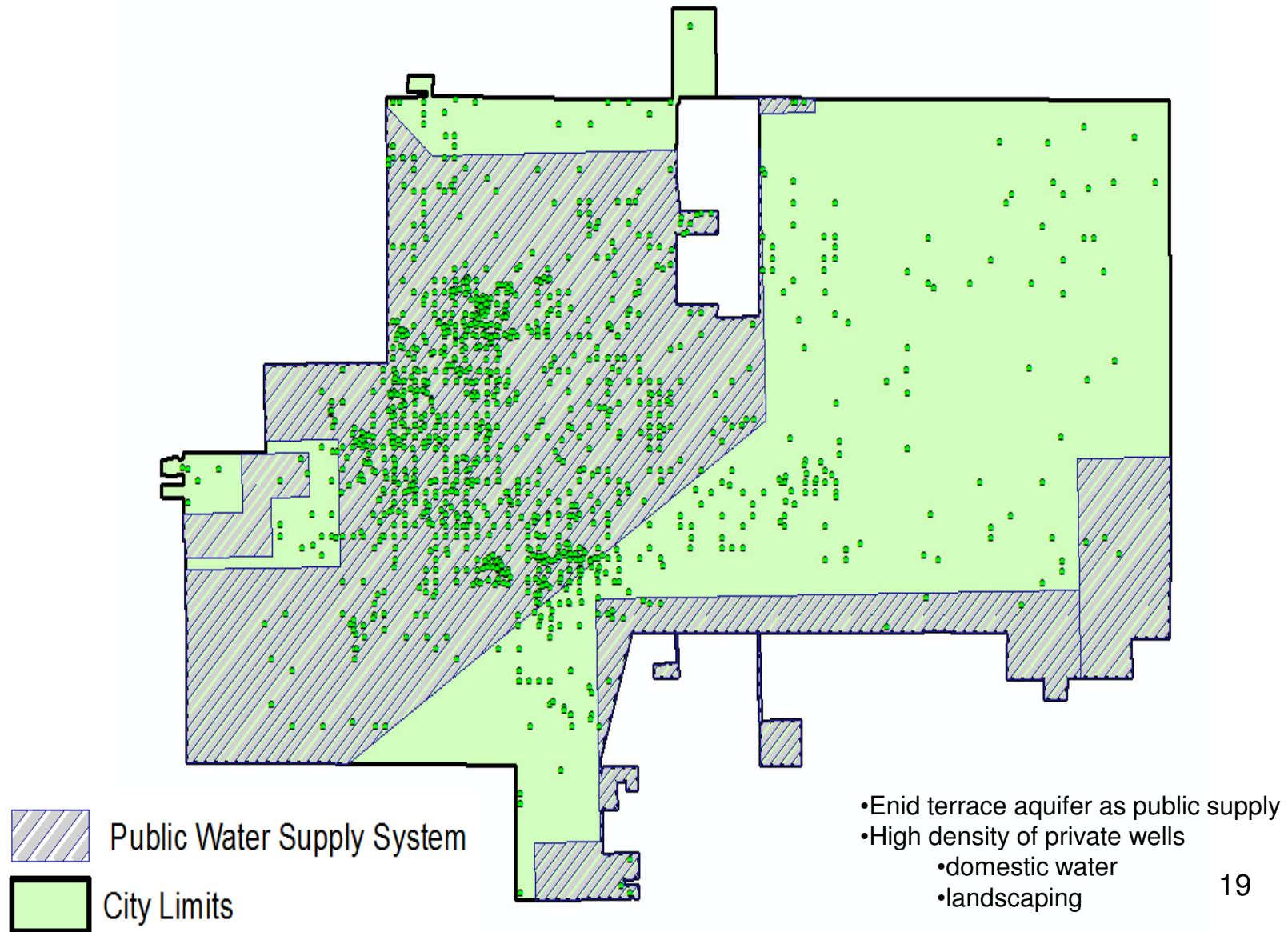


City Limits

- No public water system; 2/3 on public sewer
- Small number of wells reported to OWRB
- 551 buildings in one square mile vs. estimate of
- 409 wells/square mile



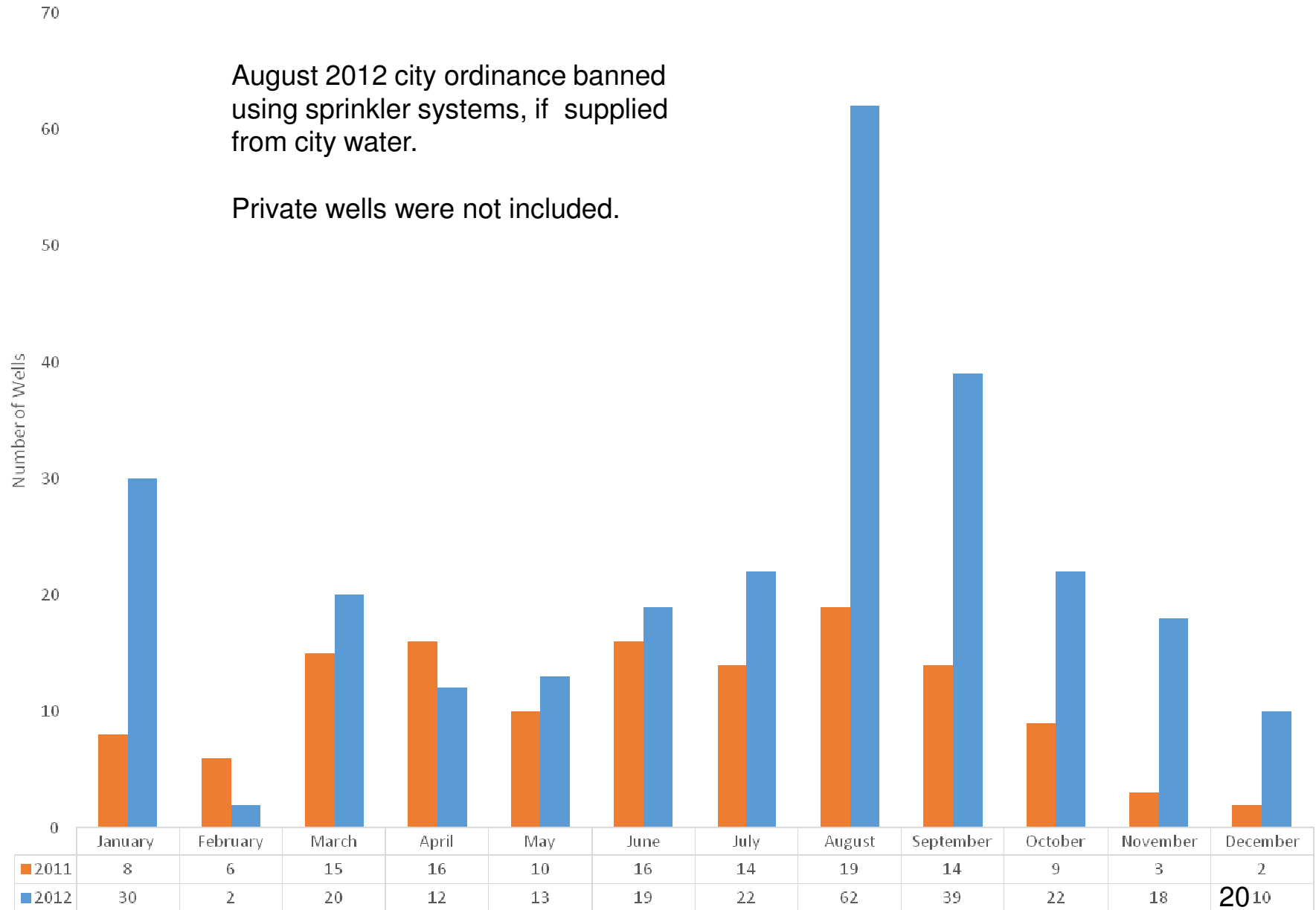
# Enid, OK

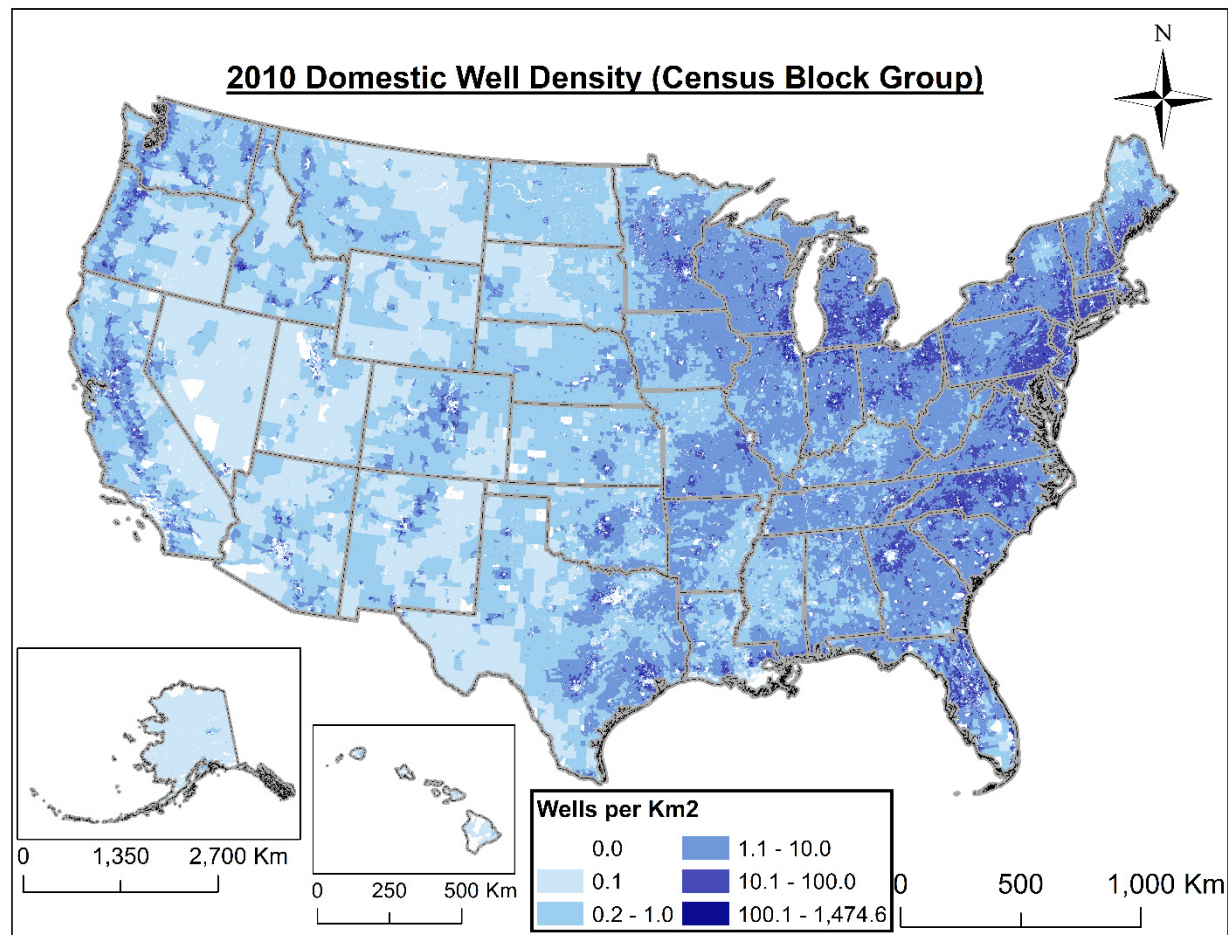


# Number of Wells Drilled in Garfield County, OK for 2011-2012

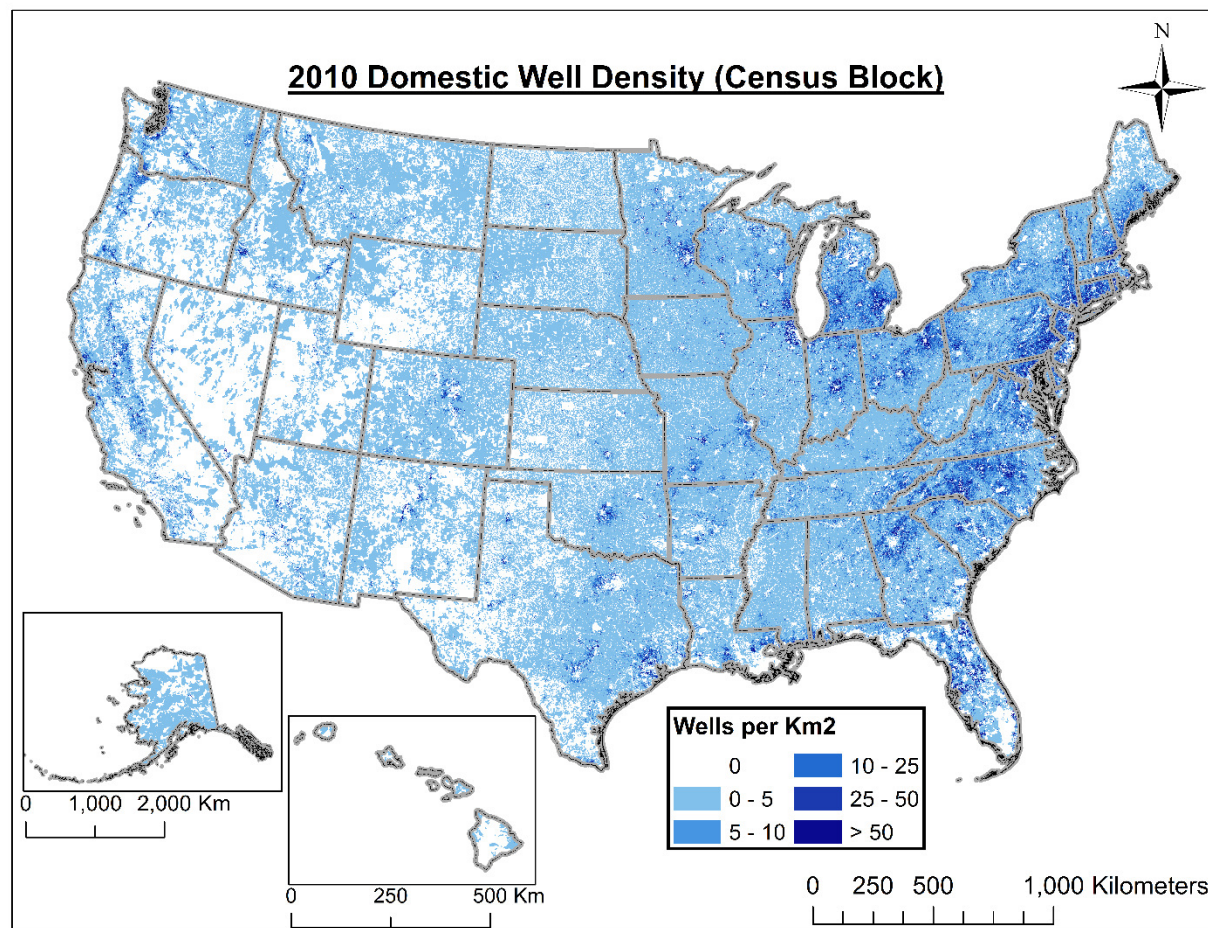
August 2012 city ordinance banned using sprinkler systems, if supplied from city water.

Private wells were not included.

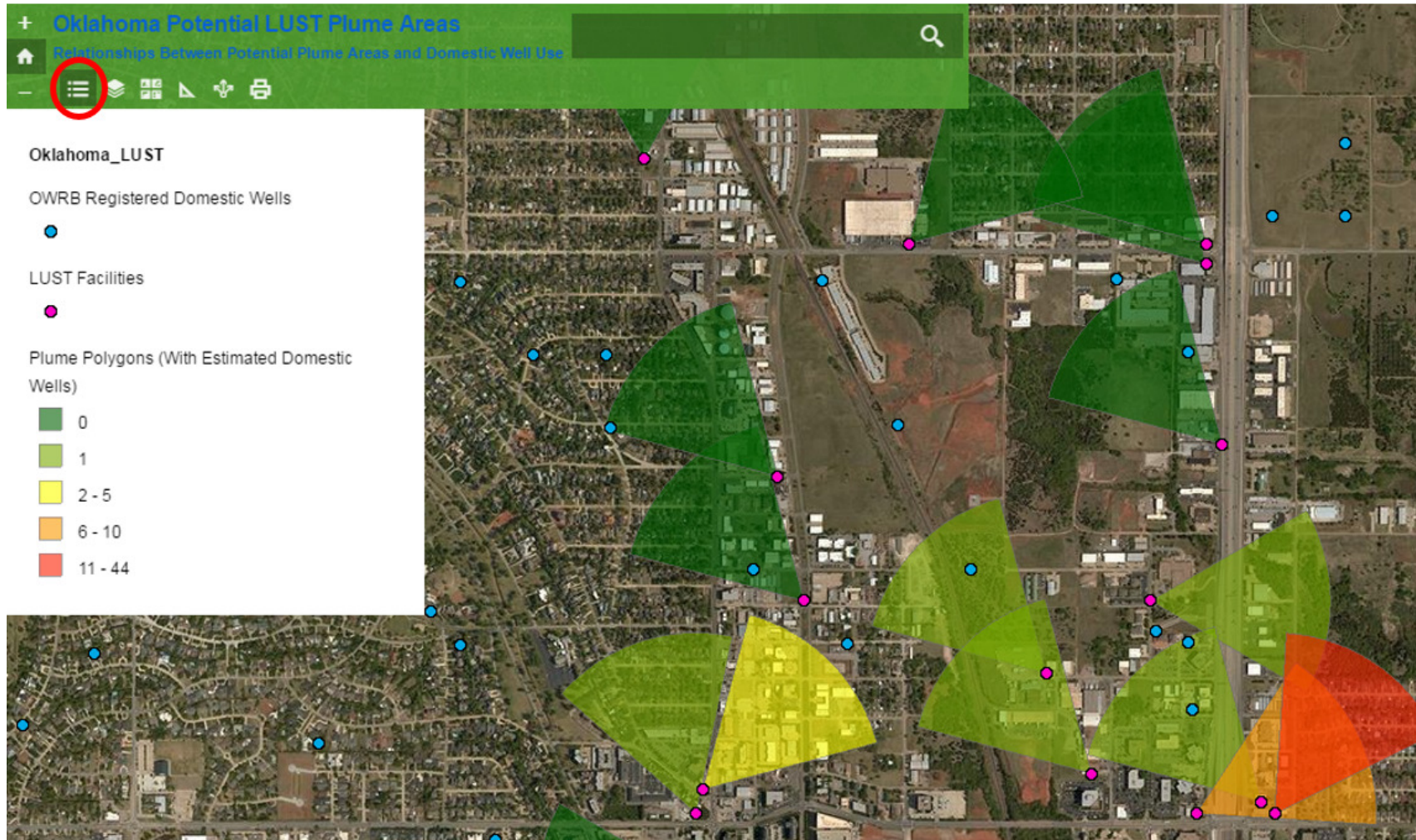




# U.S. Estimate Census Block











## Methodology

- 1990 as only nationwide baseline
- Advance estimates by
  - U.S. Census housing unit data
  - Reported Well logs
- County/Census Tract/Census Block Group too large for some purposes
  - Neighborhood—census block improved



## Locations of high reliance on private wells:

- Rural areas without rural public water
- Exurbs, Expanding Satellite Cities
  - Territories expanding ahead of water mains
- Un-annexed and unincorporated areas
- Enclaves within cities
- Unique locations of personal preference



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