Phase I: Determining the Mahomet Aquifer's Eligibility for Sole Source Designation

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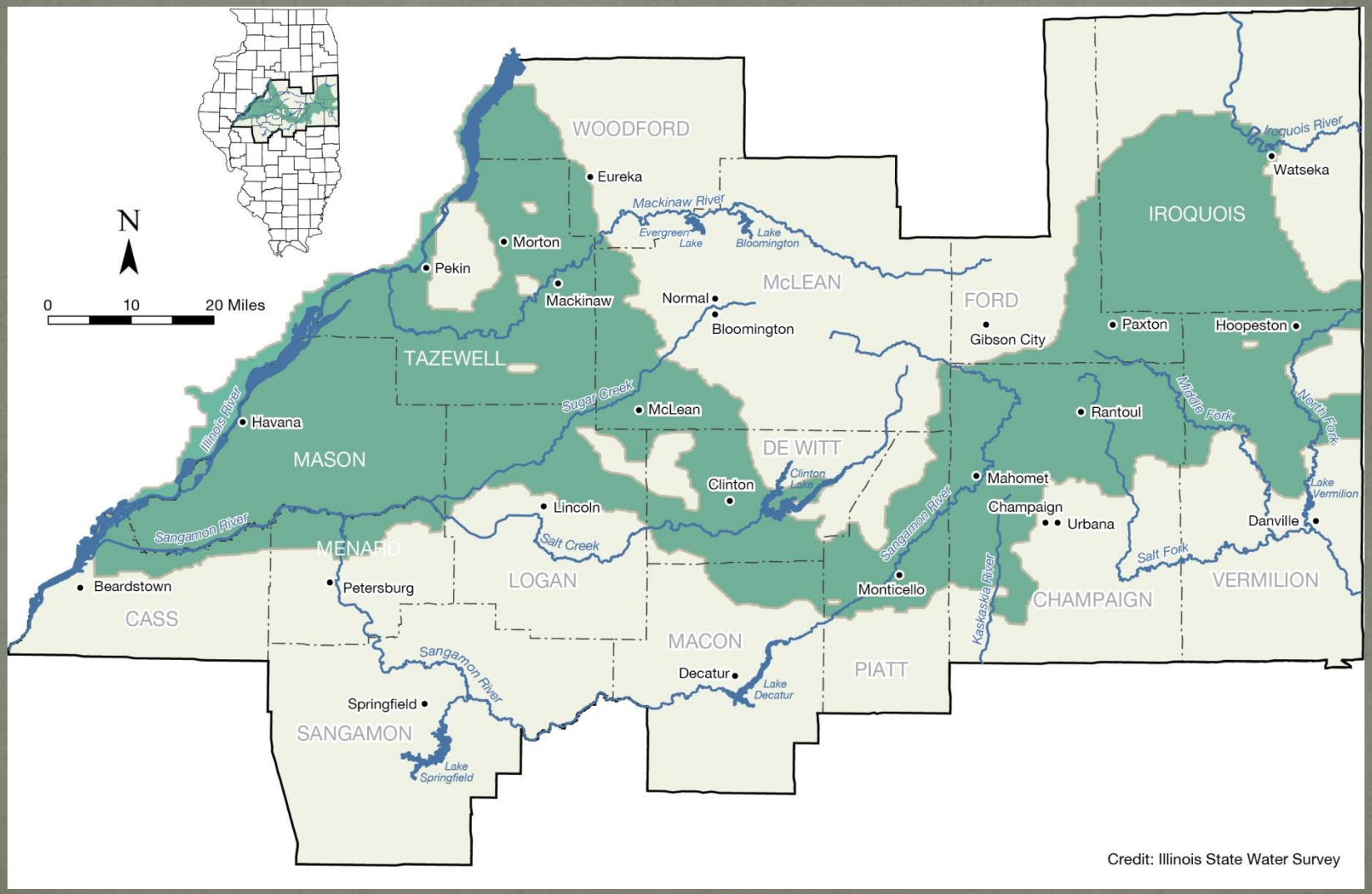
Sole Source Aquifer Definition

- SSA program was established under the Safe Drinking Water Act of 1974
- To be designated as a Sole Source Aquifer
  - The aquifer must supply at least 50% of the drinking water within the aquifer's service area AND
  - The volume of water from alternative sources is insufficient to replace the petitioned aquifer should it become contaminated (as defined by adequacy, economic, *or* legal constraints)

Basic SSA Eligibility Requirements

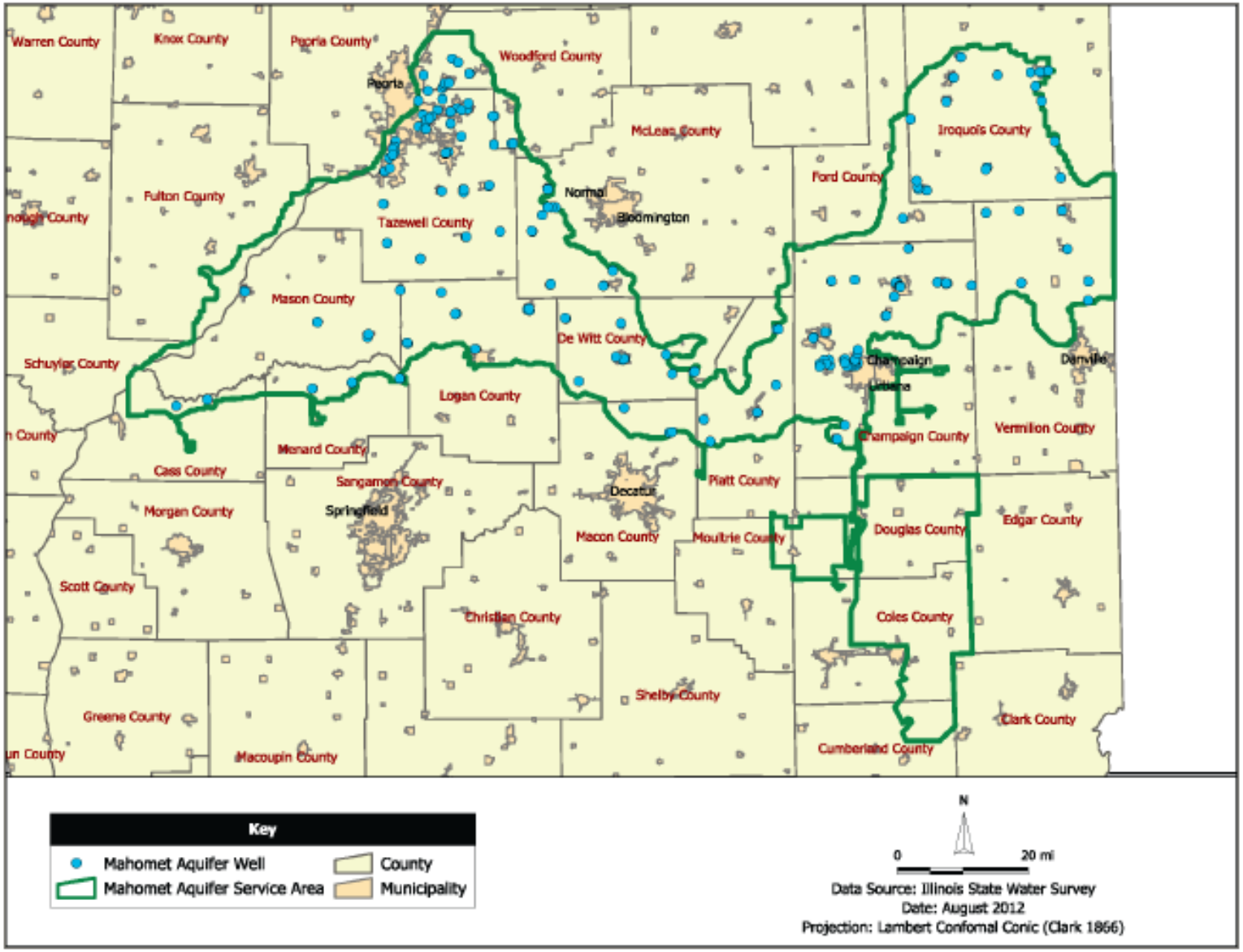
- Definition of aquifer boundaries
- Description of the area served by the aquifer
- Determination of whether the aquifer is sole or primary source of drinking water (based on adequacy, economic, or legal constraints)

Mahomet Aquifer Boundary



Credit: Illinois State Water Survey

Mahomet Aquifer Service Area

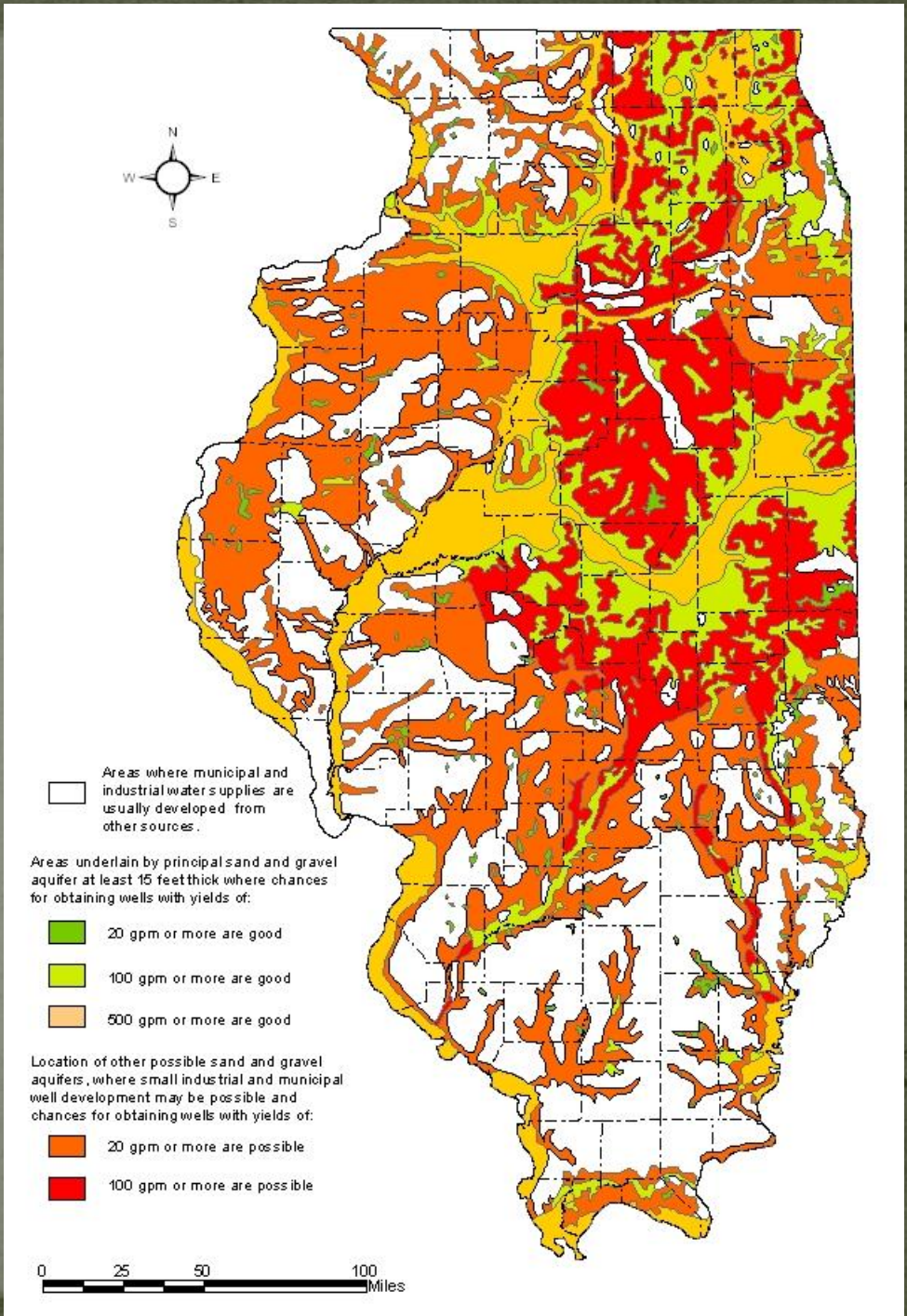


Current Drinking Water Sources for the Mahomet Aquifer Service Area (in gpd)

Source/Use	Public Water Supply (community and non-community)	Private and Other	Total
Petitioned Aquifer	53,148,762	4,311,408*	57,460,170
Other Aquifers	0	0	0
Surface Water	0	0	0
Imported	0	0	0
Total	53,148,762	4,311,408*	57,460,170

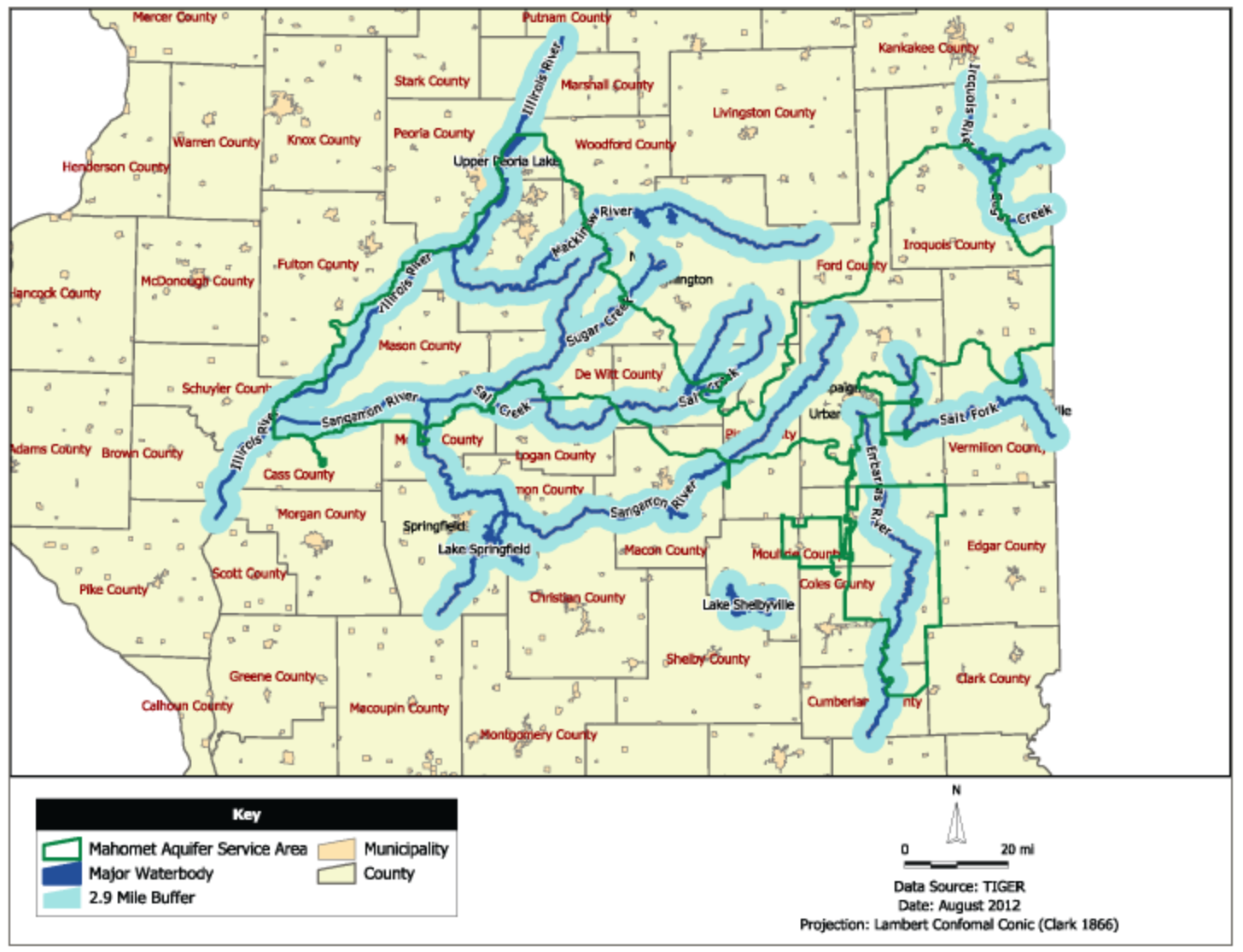
All data from ISWS Illinois Water Inventory Program for 2010,
**except private use data from Kenny et al., 2009 (USGS) with data for 2005*

Yields of sand and gravel wells in Illinois



Surface waters near the Mahomet Aquifer

(with sufficient flow to be a potential CWS)



- Legal Constraints?
  - Rule of Reasonable Use (not a constraint)
  - Water Authorities (possible constraint)
  - Low Flow Protection (constraint for certain surface waters)
- Economic Constraints?
  - Construction of treatment plant alone examined for each community and deemed economically infeasible

Continuing the process of petitioning the USEPA for SSA designation is recommended.

We also recommend:

Including overlying aquifers as part of the petition because of hydraulic connections to the Mahomet,

Excluding areas previously mapped to the west of the Illinois River because of a lack of hydraulic connection, and

Not extending the petitioned aquifer boundary beyond published (and modeled) boundaries, as current hydrogeologic information does not support doing so.

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