The stated goal of the observation network was to:

- Determine the relationship between precipitation and groundwater levels
- Obtain reliable and continuing groundwater level data of confined, unconfined and artesian aquifers
- Determine to what extent fluctuations in groundwater levels can forecast stream flow and lake level
Wisconsin Statewide Groundwater Monitoring Network

• Funded by WDNR, USGS, UW-Extension
• Water-level data is used for a variety of applications
  – Well siting and water supply system design
  – Contaminant investigations
  – Calibration targets for groundwater flow
  – Documenting impacts of pumping, drought, flooding, climate change
  – Groundwater resource modeling and research
Principal Wisconsin aquifer systems

- Crystalline bedrock
- Sandstone and dolomite
- Eastern dolomite
- Sand and gravel
Recent history of the Network

- Pre 1996: 170 wells
- 1997 onwards: 127 wells
- By 2012: 97 wells
Monitoring drawdown (and rebound) in Brown Co.  
Record back to early 1950s with more recent data in deeper aquifer system
Response to 2008 flood at Spring Green

Agencies supported: WDNR, WGNHS, USGS, WEMA, FEMA

Wells utilized: DN-83 (real-time, water-table well)
Transboundary Issue of Note:

Response of Cambrian-Ordovician Aquifers to Changing Stresses in SE Wisconsin/NE Illinois

Change in heads from the Cambrian-Ordovician sandstone aquifers between 1980 and 2014
Respond to expansion of high-capacity well permit applications

Trends are dominated by Irrigation

Figures provided courtesy of B. Smail (WDNR)

Aquifer type
- Galena-Plateville
- Precambrian
- Sand and gravel
- Sandstone
- Silurian

14/19
Extra images and content on following slides
Groundwater contaminant susceptibility

Nitrate – Concentration (ppm)

Wisconsin DNR

UWSP – Well Water Quality Viewer (Private Well Data)