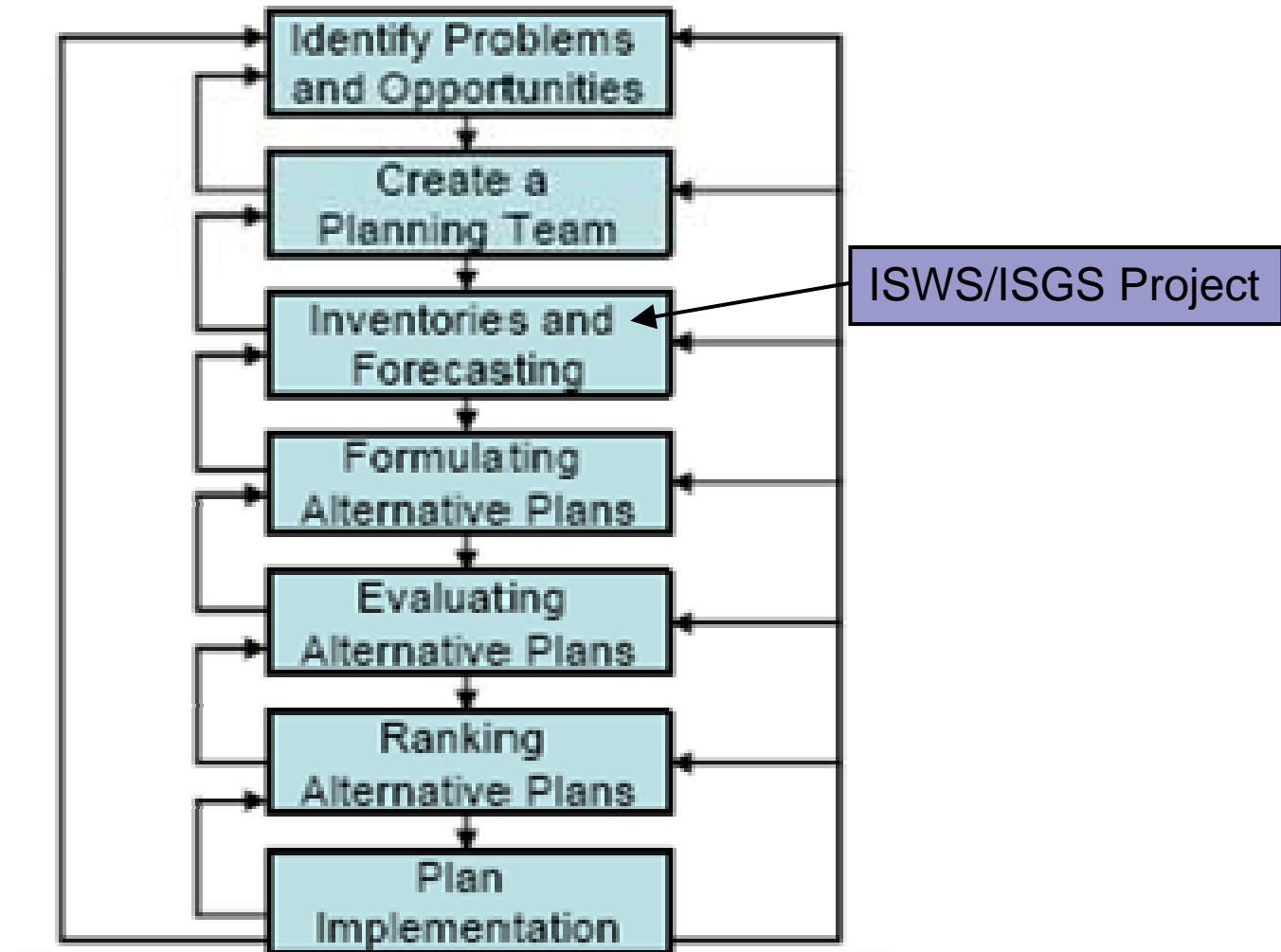


Summary

Scott C. Meyer, P.G.
Illinois State Water Survey
Illinois Department of Natural Resources

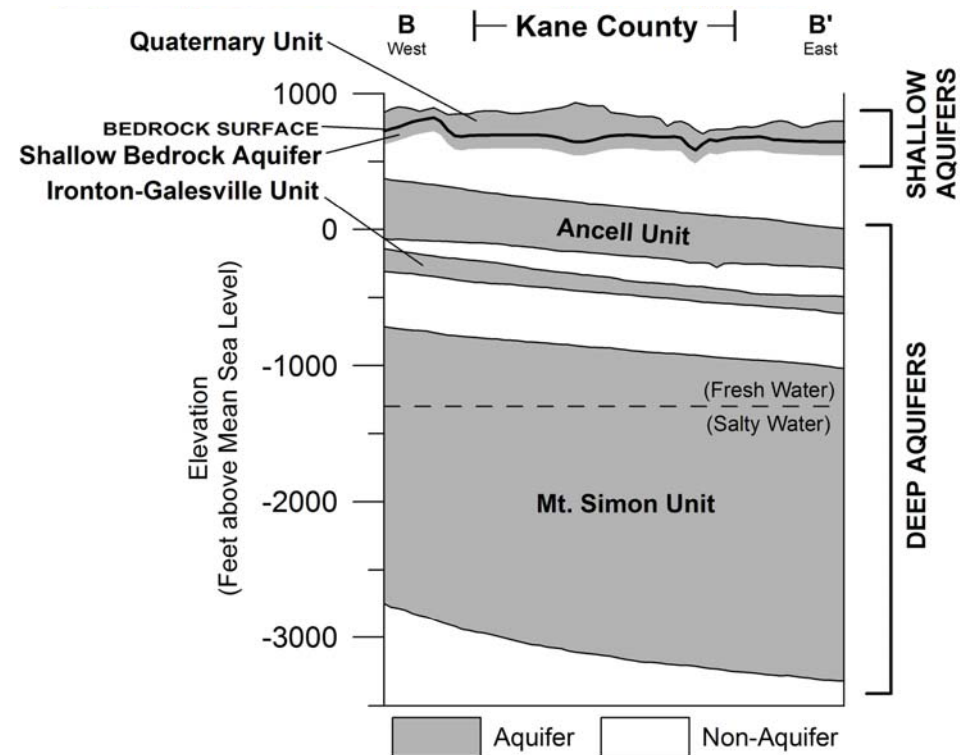


Water Resources Planning Process



Summary

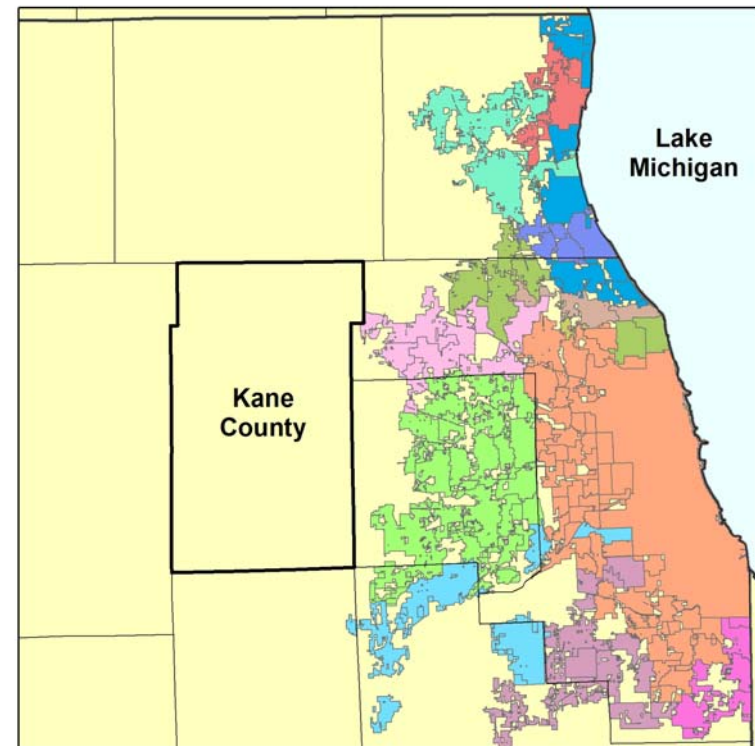
- Sources of water for Kane County
 - Fox River (Aurora, Elgin) (~23 mgd in 2003)
 - Groundwater (~40 mgd in 2003)
 - Shallow aquifers: irregularly distributed, replenished rapidly
 - Deep aquifers: continuously distributed, replenished very slowly, deep parts salty



Summary

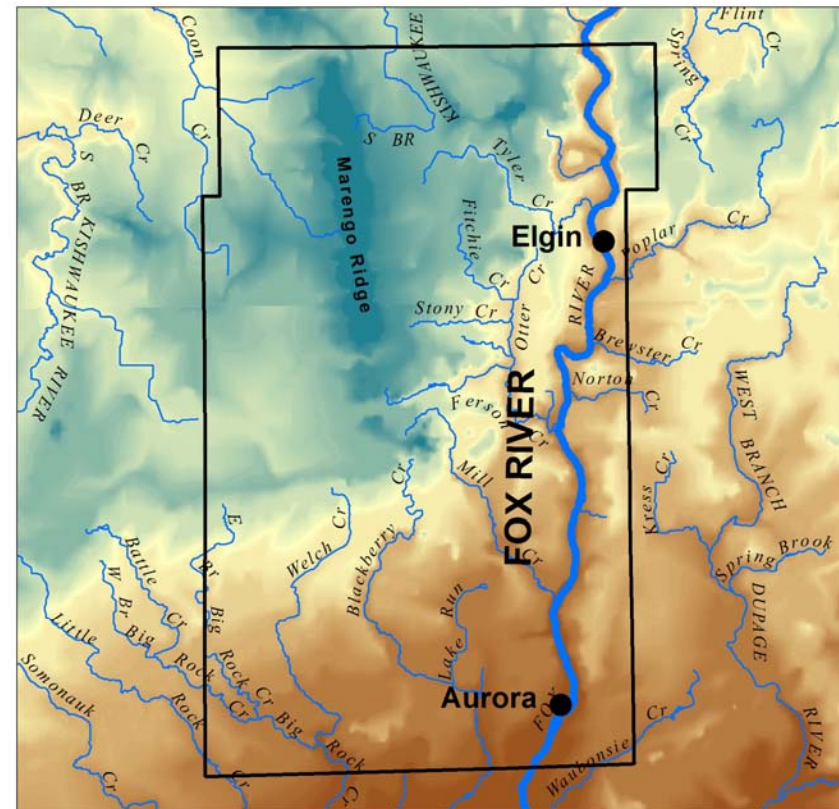
- Lake Michigan is not expected to be an important source of water for Kane County.

Lake Michigan Service Area (2007)



Summary

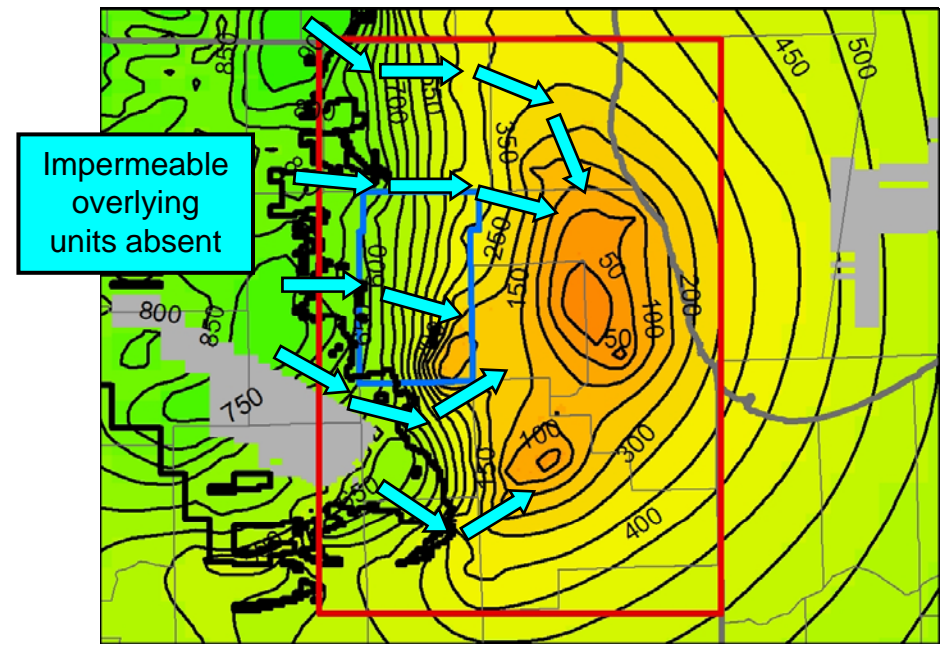
- Future flow availability in the Fox River will depend on ...
 - Upstream water use, including from groundwater sources, and associated effluent discharges;
 - Impact of climate variation on droughts.



Summary

- Source of water pumped from the deep aquifers in NE Illinois is north-central Illinois
- Total drawdown in deep aquifers exceeds 650 ft.
- Drawdown continues at major pumping centers (notably Joliet and Aurora).

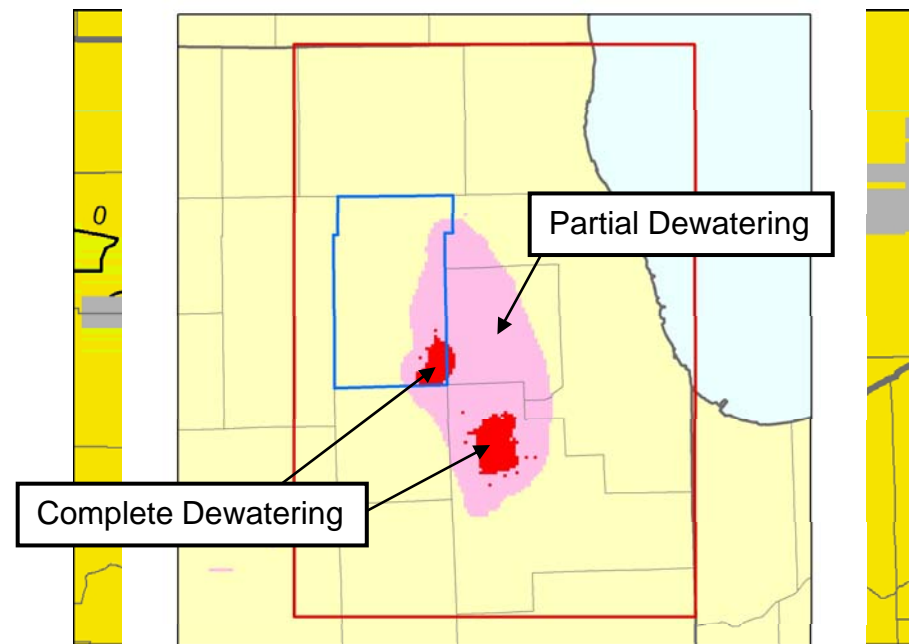
Total Drawdown (ft), Aurora, Illinois (2002)



Summary

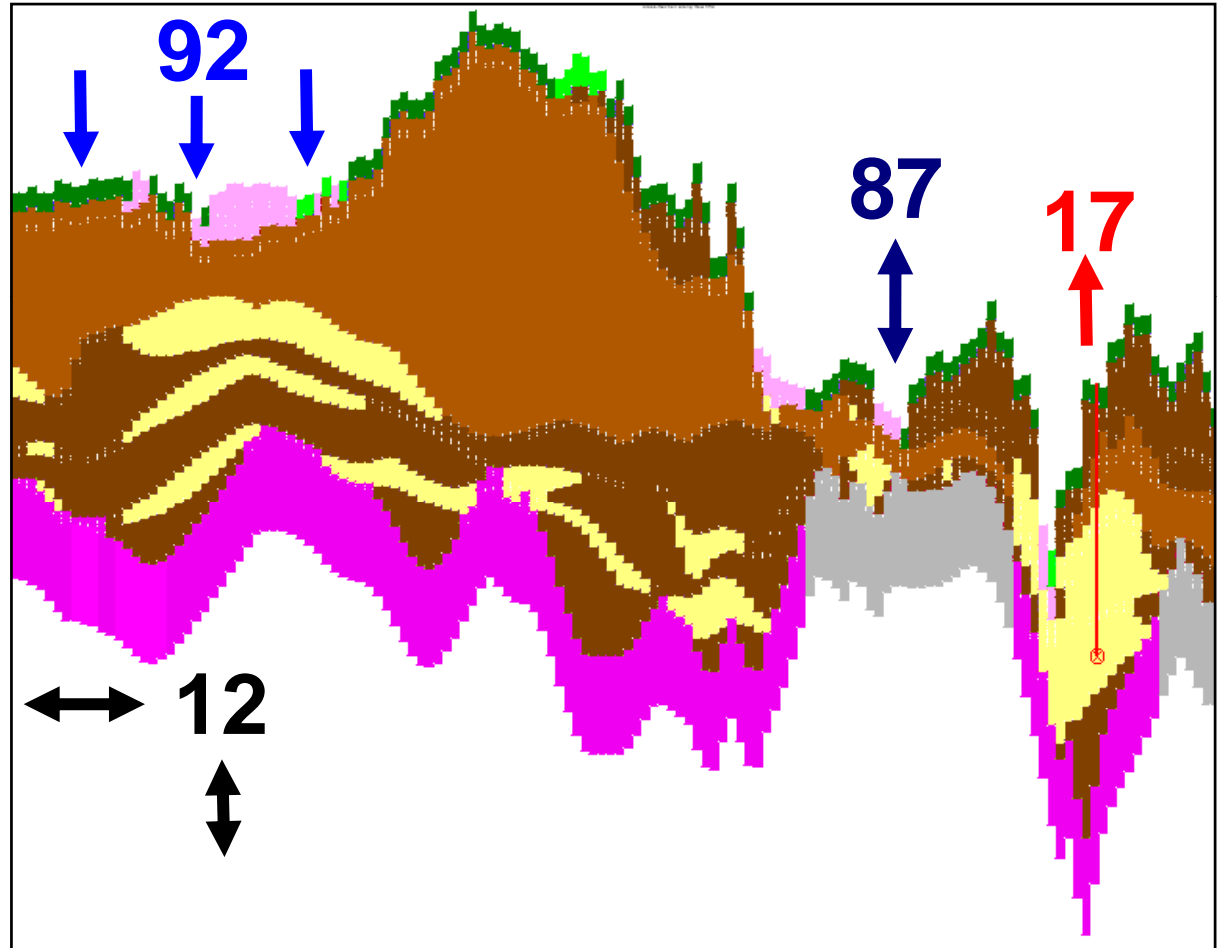
- More than 150 feet of additional drawdown is expected by 2050 in the Joliet and Aurora areas.
- Some dewatering of the upper Ancell and base of the Galena-Platteville is expected by 2050 (possible well productivity and water-quality impacts).
- Extended pumping at 2002 rates would cause partial dewatering of the Ancell Unit over a large part of NE Illinois and complete dewatering in the Joliet and Aurora areas.

Expected Additional Drawdown of Ancell
(Extended 2002 Pumping at Base Rates)



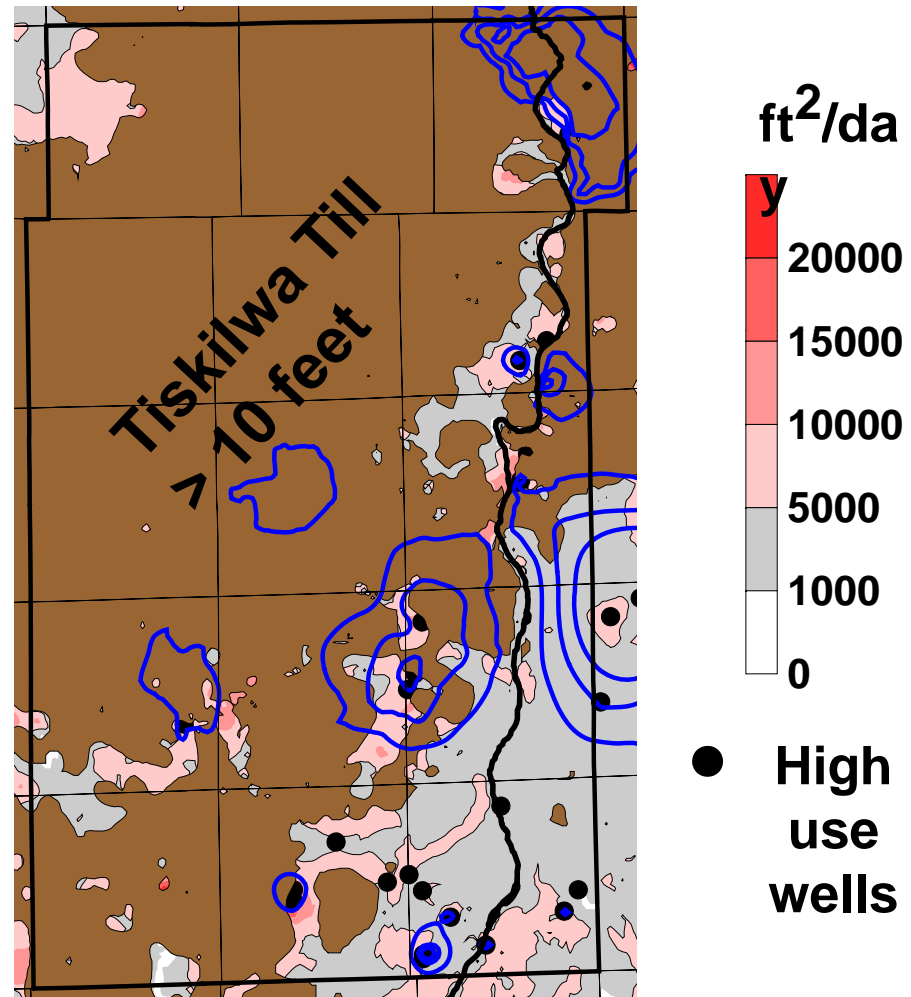
Summary

- Groundwater flow through Kane County is ~104 mgd



Summary

- Results of future use scenarios dependant on local geology and hydrology
- Development of new large wellfields
 - Many of the prime locations are currently used
 - Impacts to existing users
 - Impact to low flows in streams





Summary

- The ISWS has nearly completed two groundwater flow models of the aquifers supplying Kane County that permit ...
 - Greater understanding of groundwater circulation;
 - Prediction of impacts of future groundwater development in the area.

- The ISWS has completed a surface water accounting model that ...
 - Quantifies streamflow in Kane County;
 - Permits prediction of impacts on Fox River flows resulting from future water use and effluent discharge scenarios.

- The ISGS has developed a 3D geologic model of the shallow materials in Kane County which was used to ...
 - Generate maps of bedrock geology, aquifer distribution, and aquifer sensitivity to contamination;
 - Generate Cross sections;
 - As input for the local-scale groundwater flow model.