Regional Water Supply Planning in Indiana

Defining Regions

Mark Basch & Allison Mann
DNR, Division of Water

August 12, 2020

What are the questions answered by regional water supply planning?

- How much water in the basin?
  - How much groundwater, surface water, wastewater volumes?
  - Where and when is this available?
- How much need, where, when?
- What are the infrastructure alternatives?

What are the critical factors in delineating a water supply planning region?

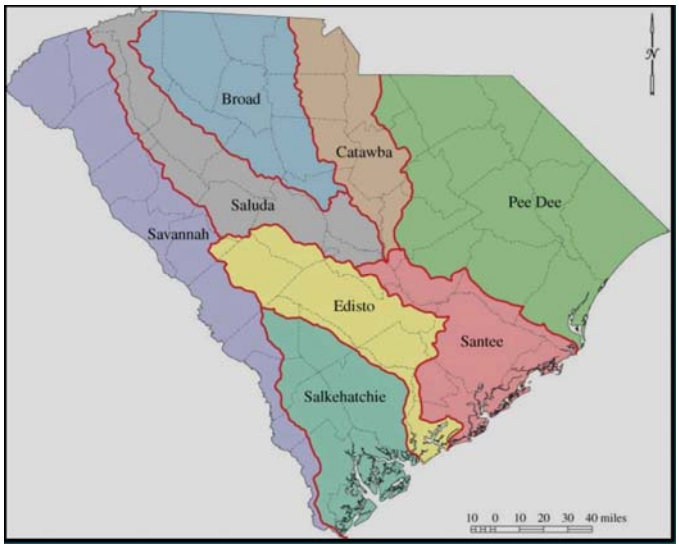
- Who are the users?
  - Are users different in surface water and groundwater?
  - How has use changed over time?
- Does other infrastructure drive changes in use?

Principles of Regional Water Supply Planning

- In riparian states *cooperation is critical to resource management*.
- A water supply planning *region* needs to *share a river or an aquifer.*
- Regions need to identify *common goals and priorities*.
- A water supply planning region needs *to share problems*.
  - Growth in demand
  - Increases in seasonal peak withdrawals
  - Local competition for regional supply
  - Wastewater treatment capacities
- Number of Regions – Avoid too many or too few plans within the the state.
- Population clusters – Municipal systems in larger towns are important but ideally, there are not too many people or too few in each region.

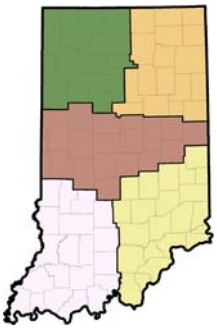
Georgia Planning Regions

Proposed South Carolina Planning Regions

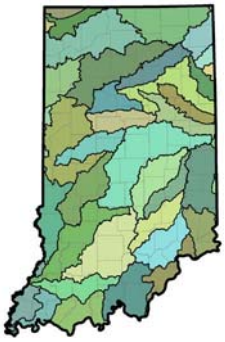


Many options for Indiana Regions

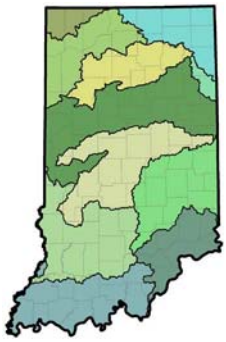
a) Climatic regions



b) Indiana AWWA districts



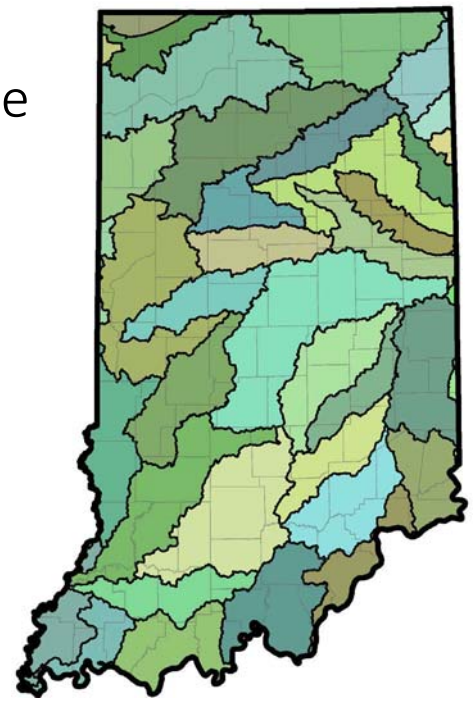
c) Watersheds



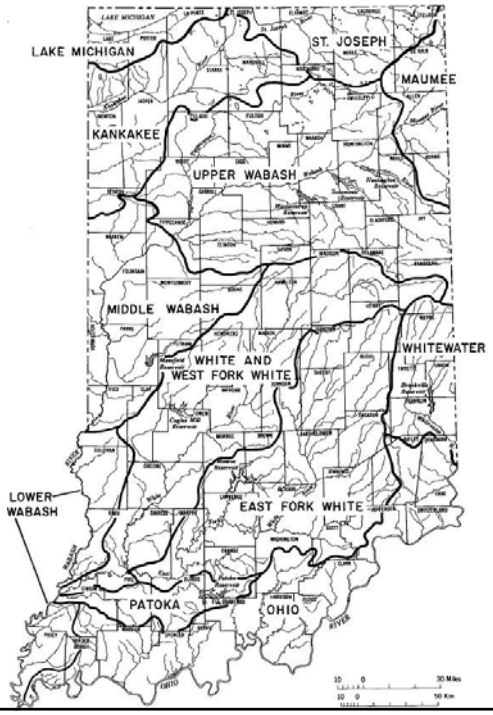
d) Combined watersheds

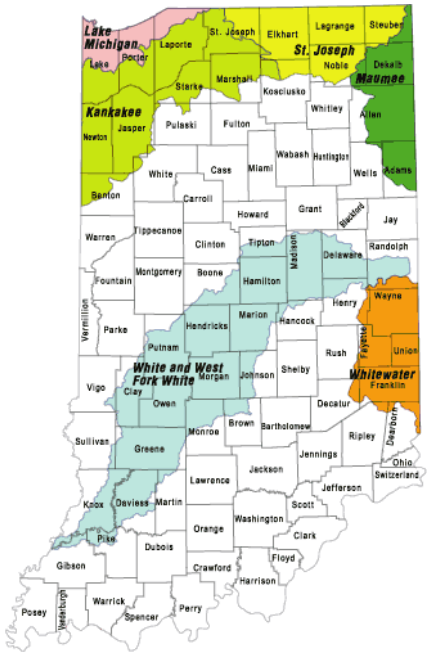
Watersheds scale makes sense

- Grouping watersheds would be practical
  - Water availability
  - Demand forecasts
- Sustainability / adequate supply evaluation
- Water shortage investigations



DNR Water Management Basins

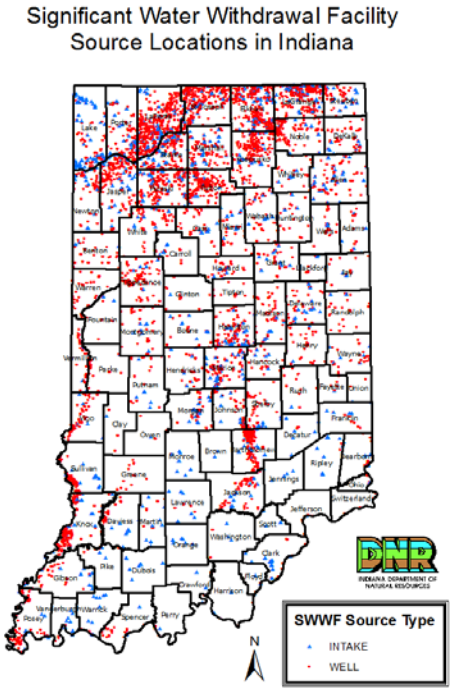


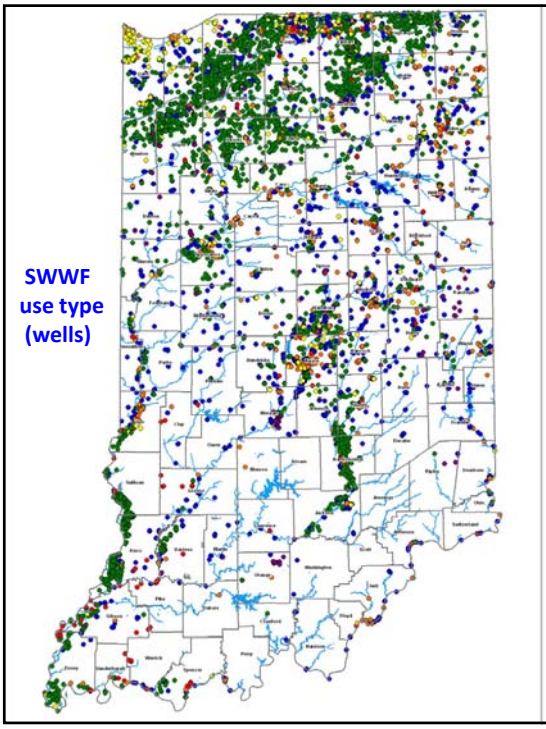


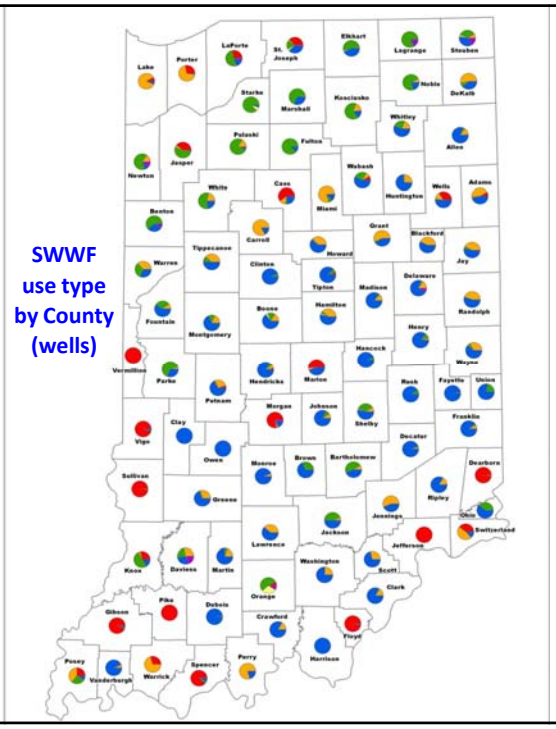
DNR Basin Studies 1987-2002 Six Completed

IC 14-25-7: Water Resources Management Act

- Enacted in 1983
- Requires registration of all SWWF (GW & SW)
- Facility defined as greater than 100,000 GPD capability
- Capability is aggregate of all wells & intakes
- Annual water use reporting required
- Approximately 4200 SWWFs currently registered

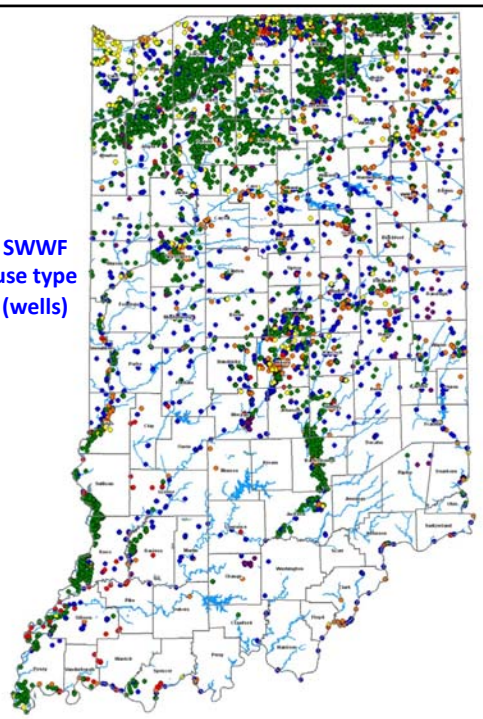




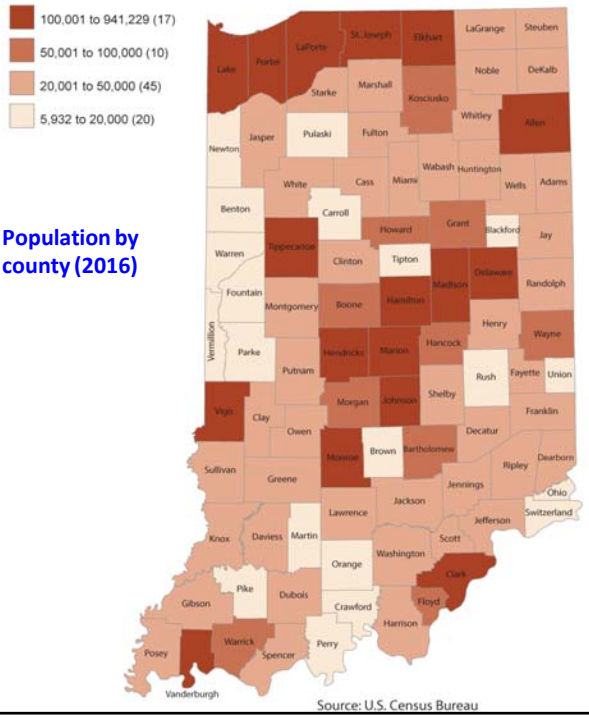


Public Supply
Irrigation
Industrial
Energy Prod.

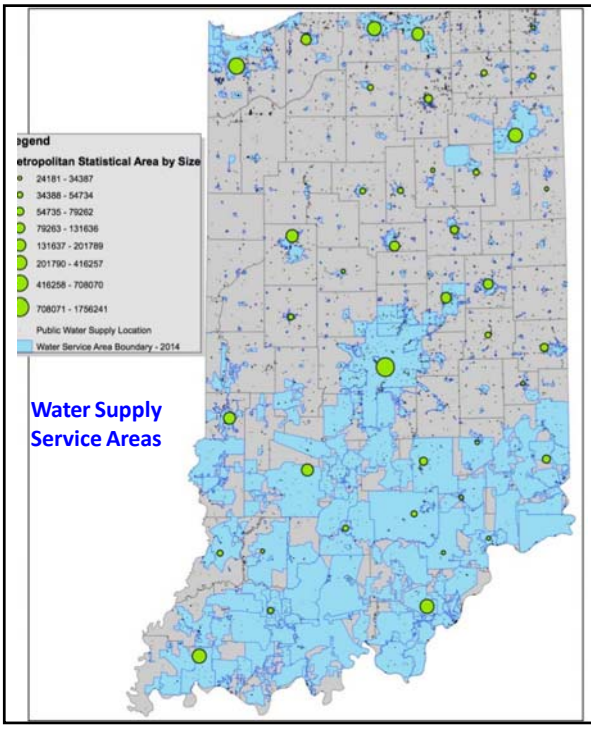
SWWF use type (wells)



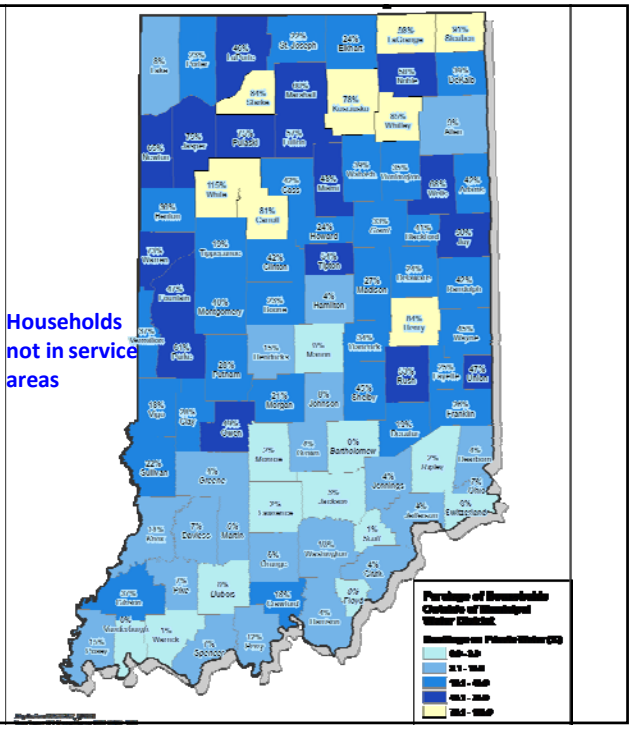
Population by county (2016)



Water Supply Service Areas

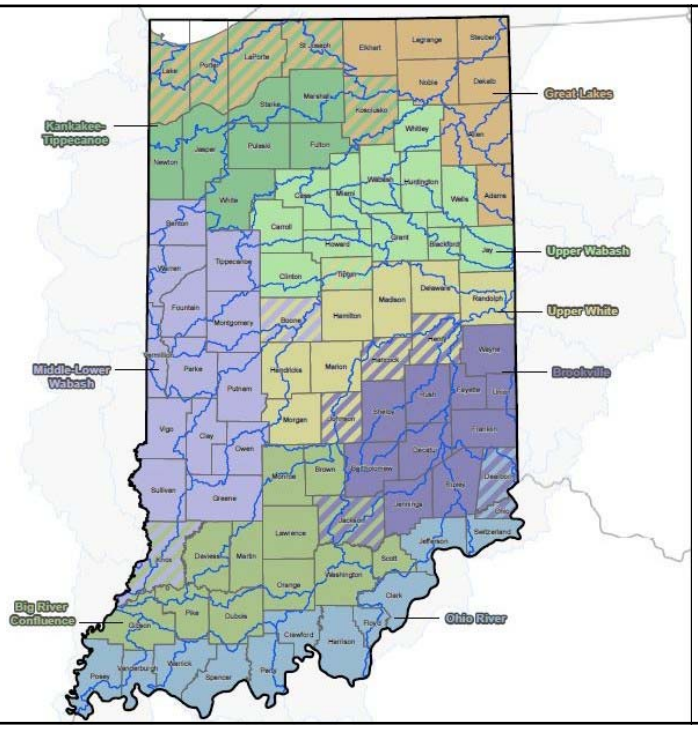


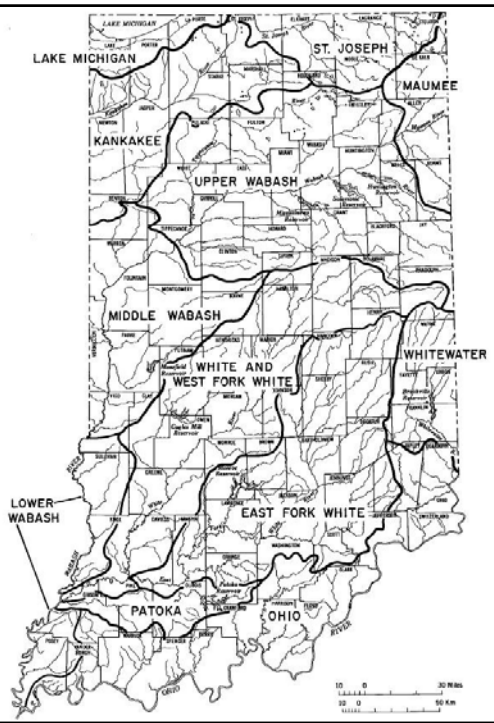
Households not in service areas

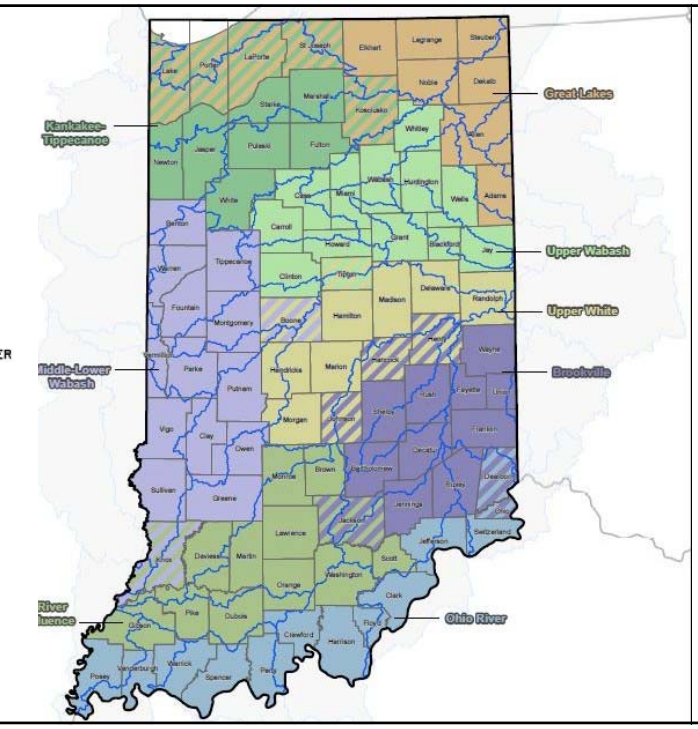


Proposed Planning Regions

(Jack Wittman, 2018)







Southeastern Indiana Regional Water Supply

Indiana Finance Authority Report
2018

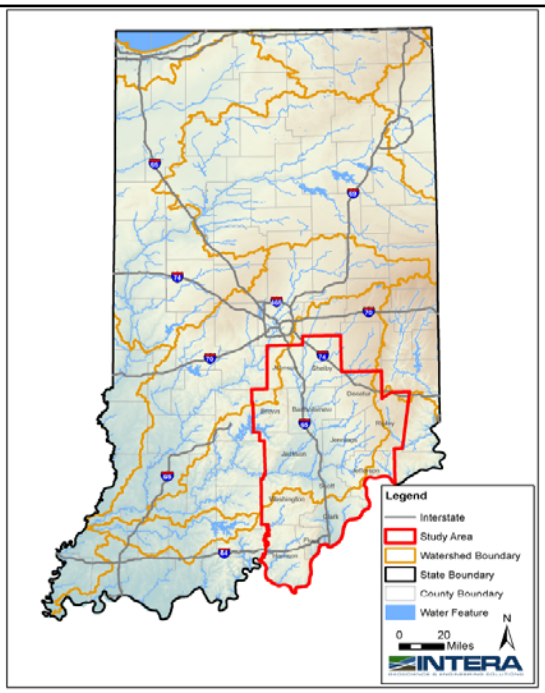
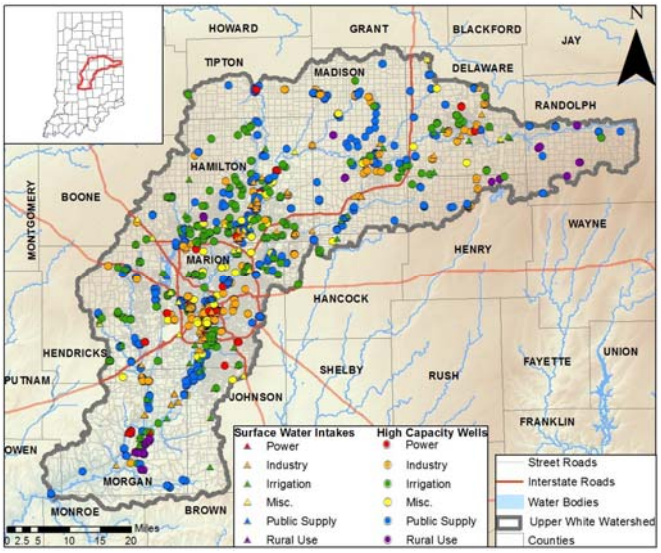


Figure 1. Southeastern Indiana study area and major watersheds.

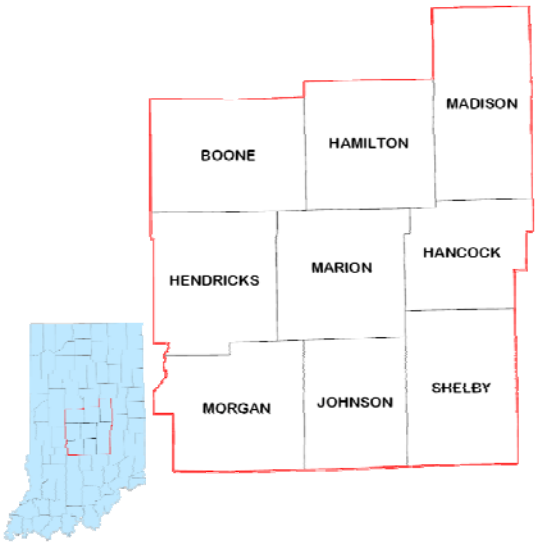
Upper White Fork – Potential Pilot Basin



Central Indiana Water Study

Why study this region first?

- Supplies are shifting with metro demographics.
- Local competition is inefficient. Regional systems could help.
- Regional decisions and growth affect options.
- The increase in groundwater use is driven by growth in PWS use.
- Groundwater use is increasing and we need to manage this asset.
- Is it always wise to plan.



How to Determine Regions for Water Supply Planning?

- Hydrologic (River Basins)
- Political (counties; number/area/population)
- Type of Water Use (AG/IN/PWS/EP)
- Existing infrastructure (Central IN, Patoka, SE IN)
- Combination of above or other criteria?

Any questions?

DNR, Division of Water
Water Rights & Use Section

Mark Basch
mbasch@dnr.in.gov
Allison Mann
almann@dnr.in.gov