



Overview and Evaluation of the Current Hydrologic Data Network

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Presentation outline

- The existing networks
- The road to optimization
- Tools for managers
 - Creating useful **information** from useful **data**

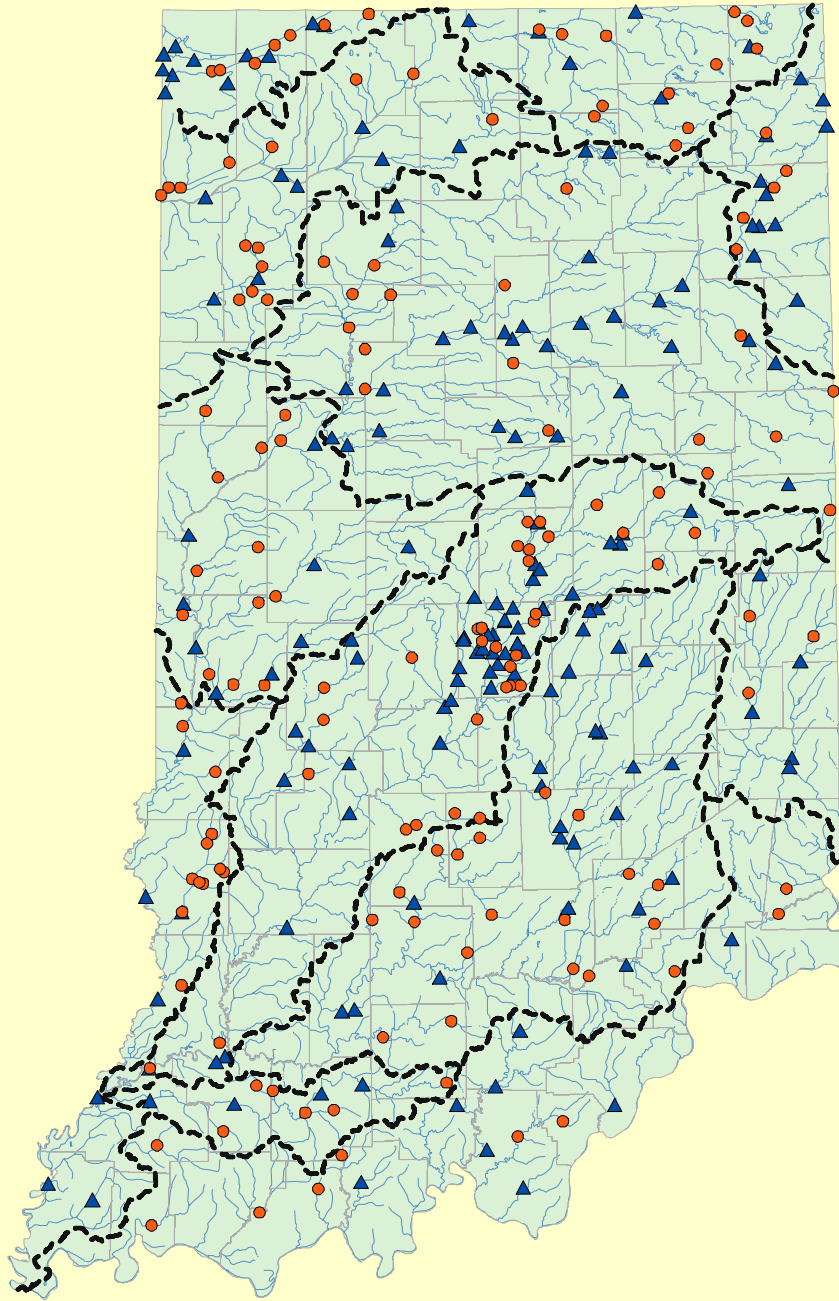
Indiana Hydrologic Monitoring Network

- 165 streamgages
 - 148 streamflow
 - 17 stage-only
- 10 lake gages
- 1 reservoir gage
- 37 GW wells
- 3 QW monitors

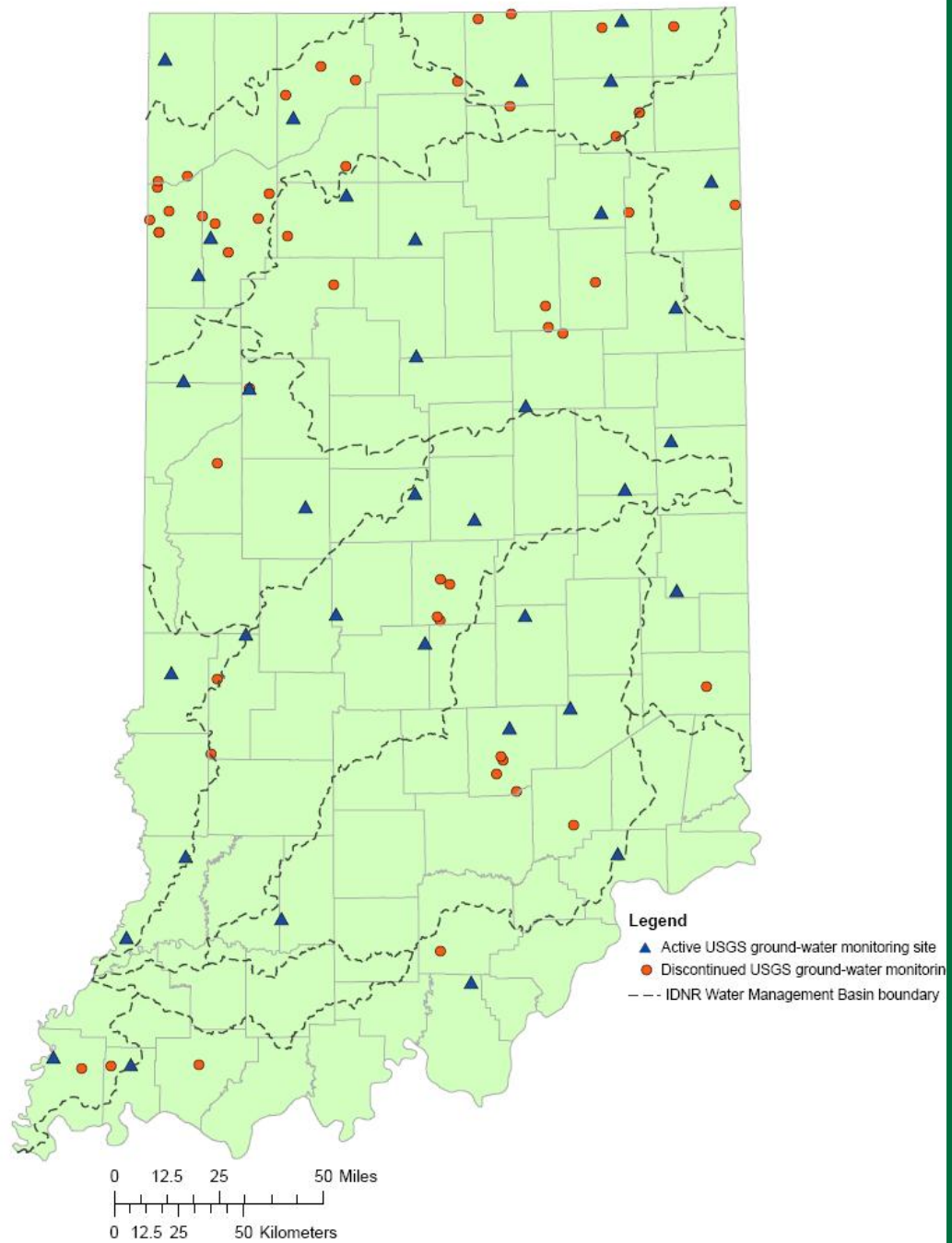


USGS Streamflow Monitoring Network

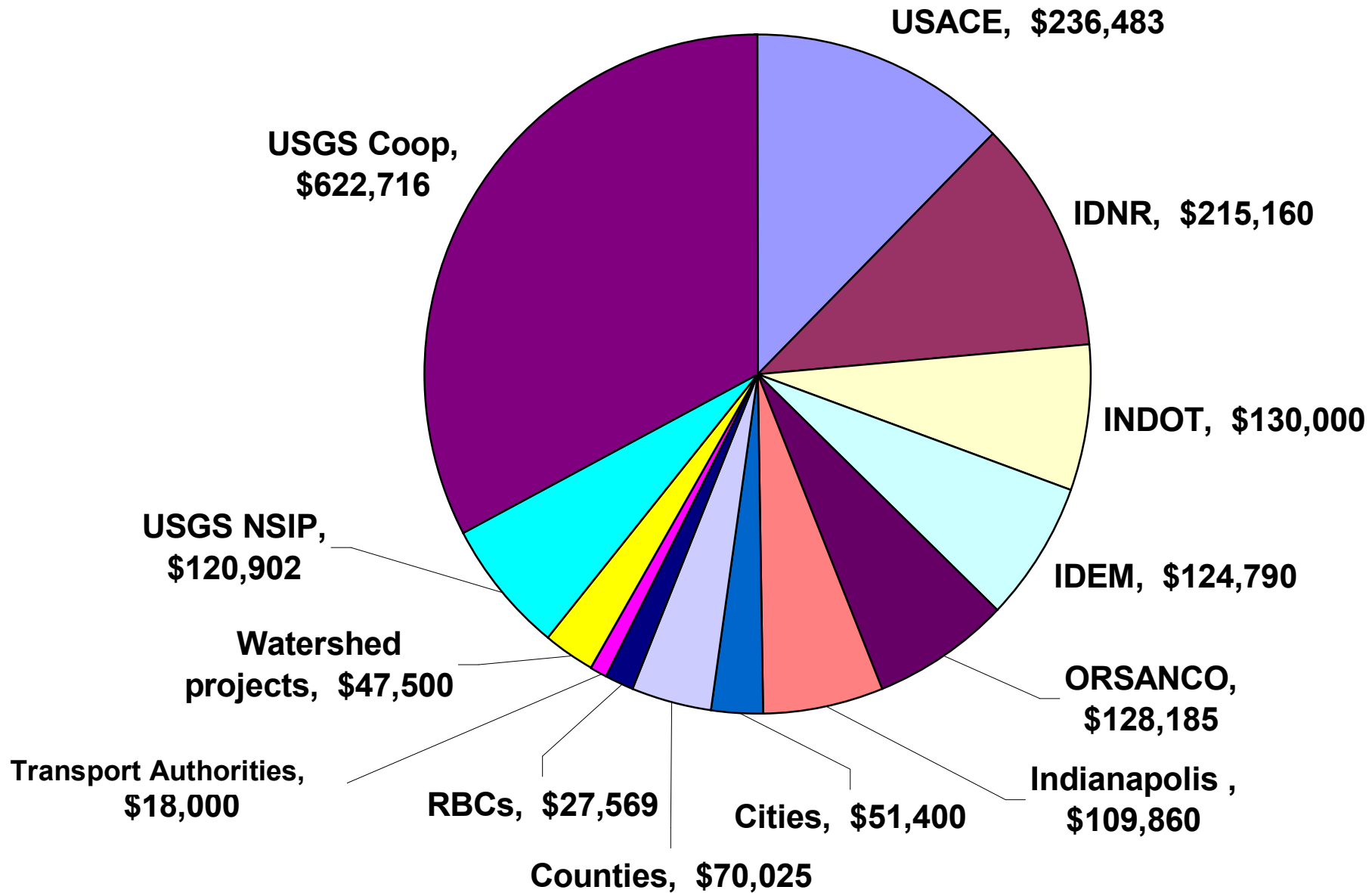
- ▲ Active streamflow-gaging station
- Discontinued streamflow-gaging station



Active and Discontinued USGS Ground-Water Monitoring Sites



SW network funding: \$1.9 Million



GW funding: \$92,913

- IDNR: \$47,250
- USGS: \$43,750
- USGS OGW: \$1,913

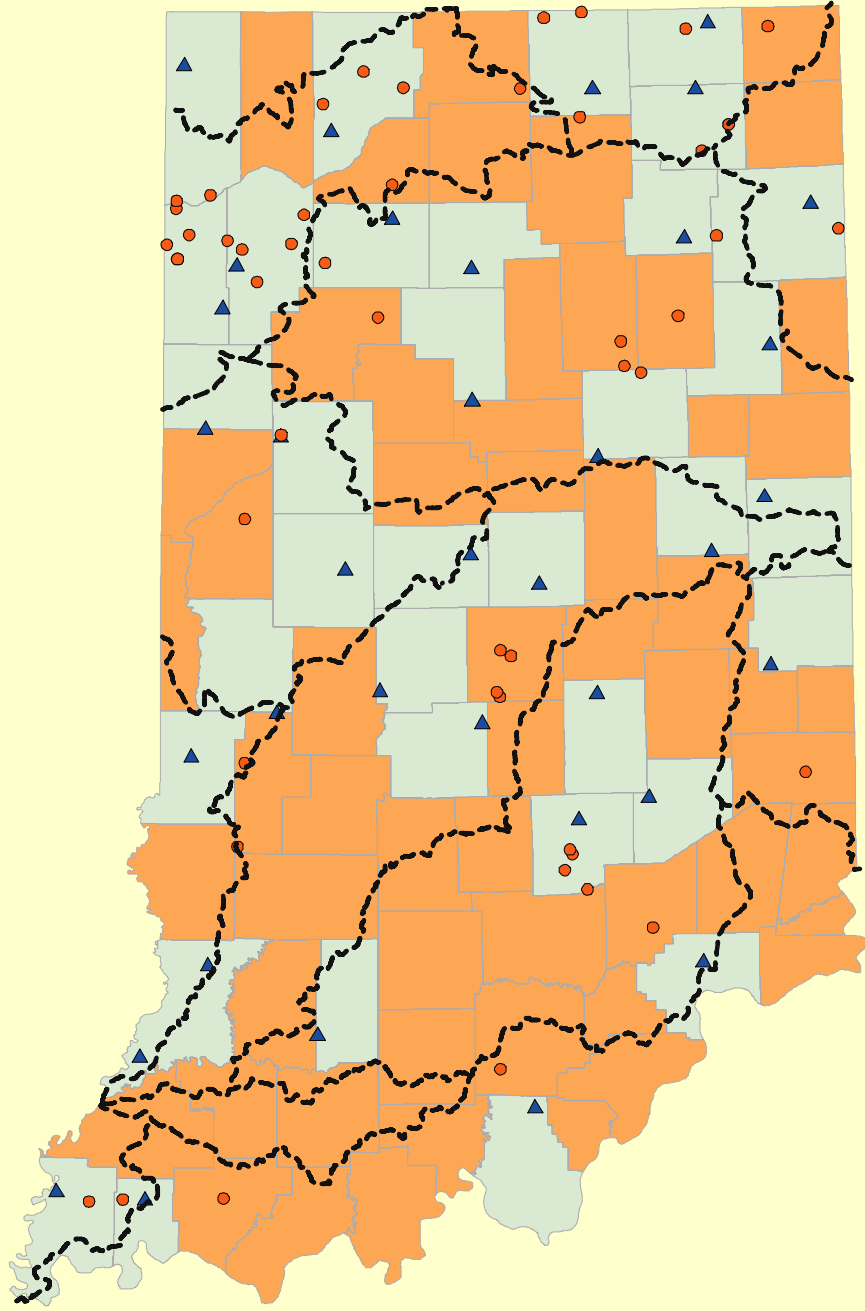


Network challenges

- Growth in gage network may be short term stations
- Coop dollar limits may inhibit further growth
- Agency budgets for longer term stations is level while gage costs increase

USGS Ground-Water Monitoring Network

- ▲ Active ground-water monitoring site
- Discontinued ground-water monitoring site
- Counties that do not have an active ground-water monitoring site



Optimizing for low-flow needs

Needs

- Determine drought triggers
- Determine minimum streamflows
 - Supply
 - Ecological flows
- Provide data for short-term decisions
- Provide data for planning
 - Population growth
 - Economic development
- Water management tools

Optimizing for low-flow studies

Network/data to meet needs:

- **Streamflow & streamflow statistics**
 - Recording streamflow stations
 - Partial record stations
 - Regression equations
- **Ground-water level data**
 - GW monitoring wells
- **GW-SW interaction information**
 - GW-SW interaction models
- **Water use**
- **Water loses (evapotranspiration, consumptive use conveyance)**
- **Recharge rates**

Optimization considerations

- **SW network needs to be representative of varying conditions across the state**
 - Basin characteristics – slope, drainage area
 - Land use
 - Physiography
 - Can use continuous record/partial record station combo
 - Can develop regional estimation equations
- **GW network needs to represent major aquifers**

Tools

- Tools that track trends – are we heading for a problem
- Tools that show impacts – e.g. triggers

Ideal tool combines optimized data with easy to use information



The road to optimization

- Cooperator/data use listening sessions
- Water-monitoring council
- Ranking system for gage uses
- Further study??
 - Network optimizations
 - Tools for managers

