

4th Quarter December 2, 2014



Financials

- Cash Balance as of Sept. 30, 2014
 - \$139,824.63
- YTD Expenditures
 - \$14,255.79
- Approval of claims

Old Business

- Basin Updates

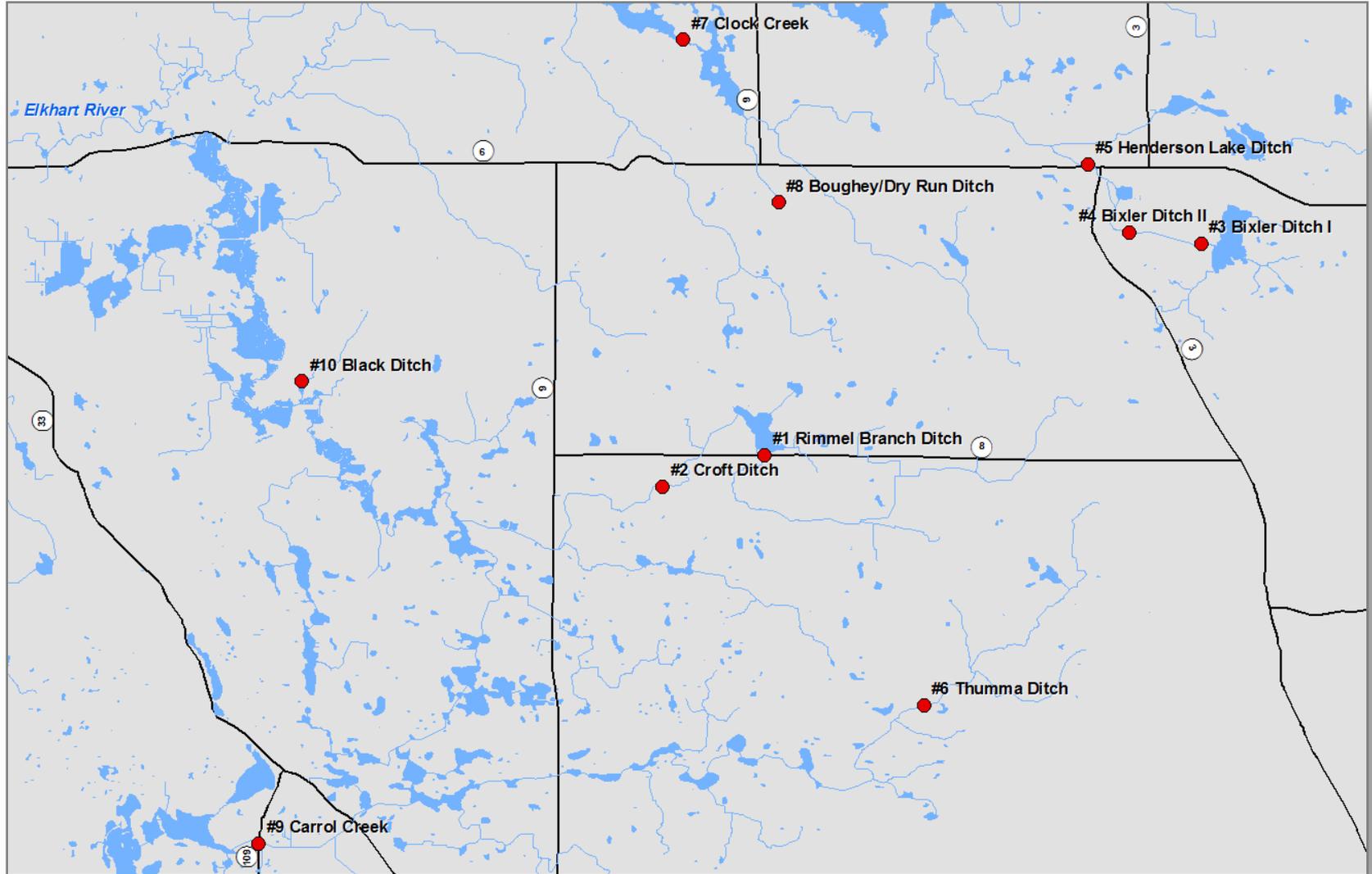
Old Business

- Basin Updates
- **New SJRBC Website**
 - <http://sjrbc.com/5742871829/index.html>



Old Business

- Basin Updates
- New SJRBC Website
- **Water Quality Testing Program**



Site Testing Parameter Averages

Average by Site	pH	Temp °C	Dissolved oxygen mg/l	BOD mg/l	BOD %	Chlorides mg/l	Conductivity μS/CM	Total Dissolved Solids mg/l	<i>Escherichia coli</i>	Nitrate-Nitrite mg/l	Total Phosphorus mg/l	Turbidity ntu	Total Suspended Solids mg/l	Flow cf/s
1	7.82	14.24	7.93	2.14	26.18	15.71	654.4	333.9	525.00	4.16	0.61	47.63	85.50	2.726
2	7.90	15.31	8.00	2.10	25.06	11.33	644.9	328.9	1971.43	3.71	0.38	18.57	27.29	15.790
3	7.80	15.88	7.16	2.78	41.03	19.24	595.6	315.6	180.00	2.86	0.38	13.40	20.20	3.448
4	7.86	15.51	8.29	1.99	23.32	12.45	739.9	376.4	62.50	2.36	0.23	7.50	12.63	2.047
5	7.63	16.40	8.11	3.08	36.96	18.48	1045.8	533.5	118.75	2.74	0.34	12.63	18.00	2.532
6	8.02	14.78	8.32	1.15	13.22	10.08	578.3	295.0	106.25	2.31	0.37	14.50	18.25	4.213
7	7.92	14.73	8.70	1.89	21.11	9.19	590.1	300.9	1168.75	3.24	0.44	11.50	15.00	7.879
8	7.76	13.93	5.97	1.68	31.06	12.25	655.3	334.2	733.33	4.70	0.49	17.17	19.50	2.078
9	7.80	14.68	7.58	1.91	24.61	12.63	686.8	350.3	68.75	3.70	0.34	12.88	17.38	13.423
10	7.87	17.10	5.70	1.63	29.05	9.53	580.9	296.3	68.75	1.96	0.37	3.50	8.75	41.715

Old Business

- Basin Updates
- New SJRBC Website
- Water Quality Testing Program
- **Ontwa Township Wastewater Treatment Facility**

Controversial sewer plant project scrapped by new Ontwa Township board

Foes of the proposed plant packed into the meeting and cheered when the officials voted to halt the project.



Tim Vandenack
Posted on Nov. 11, 2014 at 12:49 p.m.



Cyndy Herms — active in the push against a proposed sewage treatment plant in Ontwa Township, Mich. — suspected from the start that her side would prevail.



Protecting Cobus Creek, which would have received waste from the facility, is "the only thing that makes sense," said the Elkhart County woman, one of many foes on both sides of the Indiana-Michigan line who united against the project.



New Business

- Meeting Schedule for 2015
 - Quarterly meetings dates 2015
 - March 3
 - June 2
 - September 1
 - December 1
 - Indiana St. Joseph River Basin Symposium 2015
 - May 15

New Business

- Meeting Schedule for 2015
- **Election of 2015 Officers**
 - **President – Daragh Deegan**
 - **Vice-President – Jon Roberts**
 - **Secretary – Paula Reinhold**

New Business

- Meeting Schedule for 2015
- Election of 2015 Officers
- **Watershed Partnerships**
 - **Michiana Stormwater Partnership (MSP)**

New Business

- Meeting Schedule for 2015
- Election of 2015 Officers
- **Watershed Partnerships**
 - Michiana Stormwater Partnership (MSP)
 - **SWCD Stormwater Contractors Workshop**
 - Information Meeting: **December 17, 2014 1:00pm**
 - Contact Nancy Brown, Elkhart County SWCD
nancy.brown@in.nacdnet.net

New Business

- Meeting Schedule for 2015
- Election of 2015 Officers
- **Watershed Partnerships**
 - Michiana Stormwater Partnership (MSP)
 - SWCD Stormwater Contractors Workshop
 - **St. Joseph County Health Department**

New Business

- Meeting Schedule for 2015
- Election of 2015 Officers
- Watershed Partnerships
- **FEMA Flood Risk MAP Discovery Project**
 - <https://www.fema.gov/risk-mapping-assessment-and-planning-risk-map>

New Business

- Meeting Schedule for 2015
- Election of 2015 Officers
- Watershed Partnerships
- FEMA Flood Risk MAP Discovery Project
- **2015 Indiana Watershed Leadership Academy**

Indiana Watershed



Leadership Program

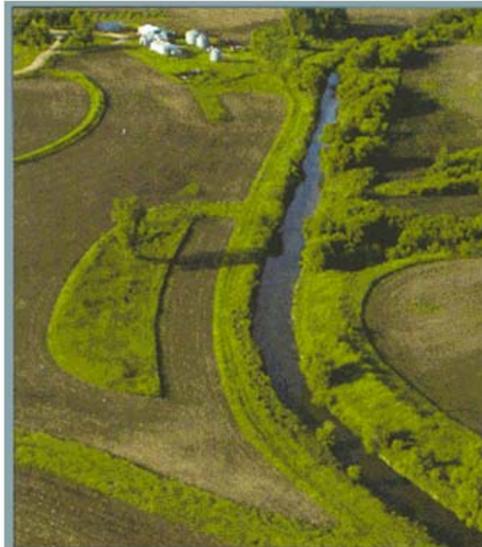
New Business

- Meeting Schedule for 2015
- Election of 2015 Officers
- Watershed Partnerships
- FEMA Flood Risk MAP Discovery Project
- 2015 Indiana Watershed Leadership Academy
- **St. Joseph River Basin Filter Strip Initiative**

St. Joseph River Basin Filter Strip Initiative

Education and Outreach of Indiana's Filter Strip Law IC 6-1.1-6.7

11/18/2014
St. Joseph River Basin Commission Plan -
Jeremy Reiman



Mission

The mission of the St. Joseph River Basin Filter Strip Initiative is to increase The St. Joseph River Basin Community's knowledge and participation in the Indiana Filter Strip Law IC 6-1.1-6.7

Phases

1. Committee Establishment
2. Application Process
3. Brainstorming
4. Implementation
5. Assessment

Water and Economic Development in Indiana

St. Joseph River Basin Commission Meeting

December 2, 2014

Jack Wittman, PhD
Principal Geoscientist



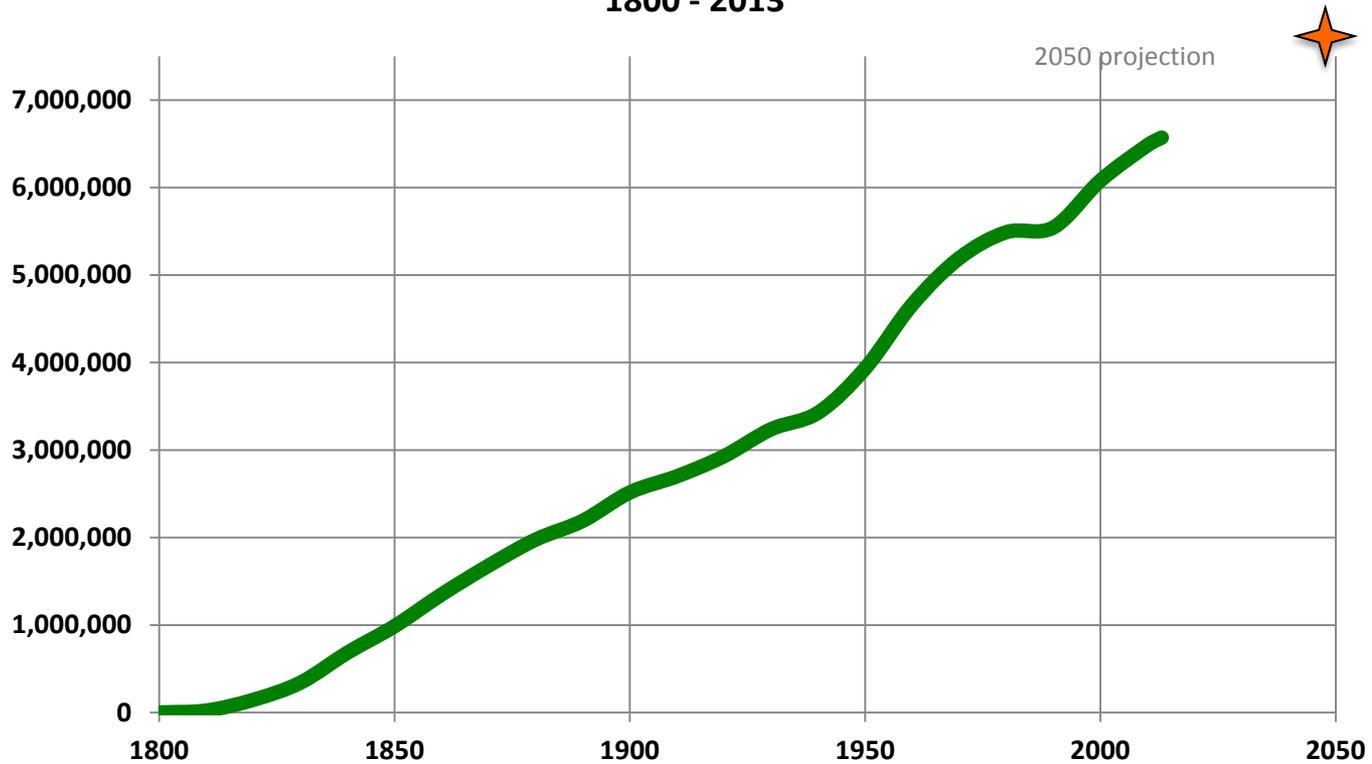


Indianapolis population surging since 2010

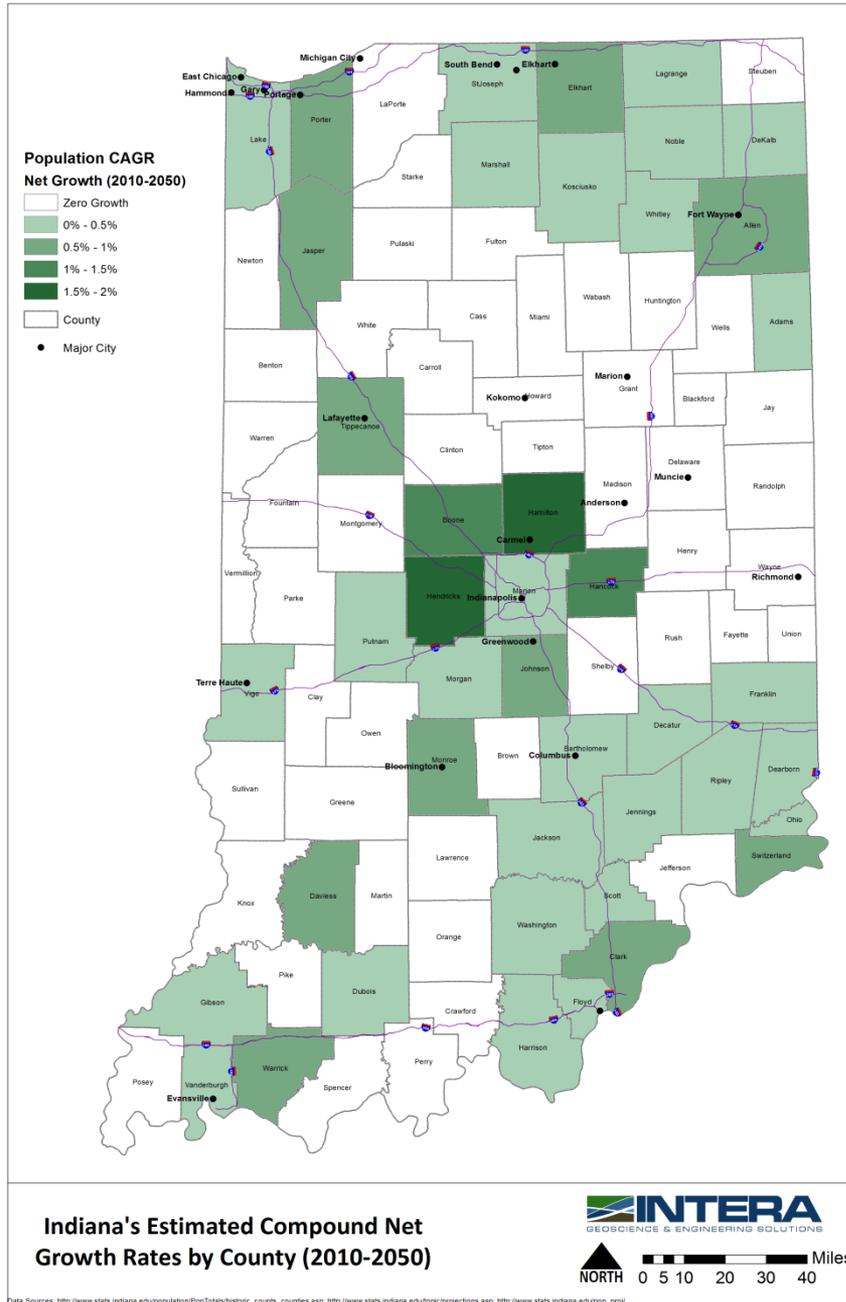
Associated Press, @ap 8:02 a.m. EDT May 22, 2014



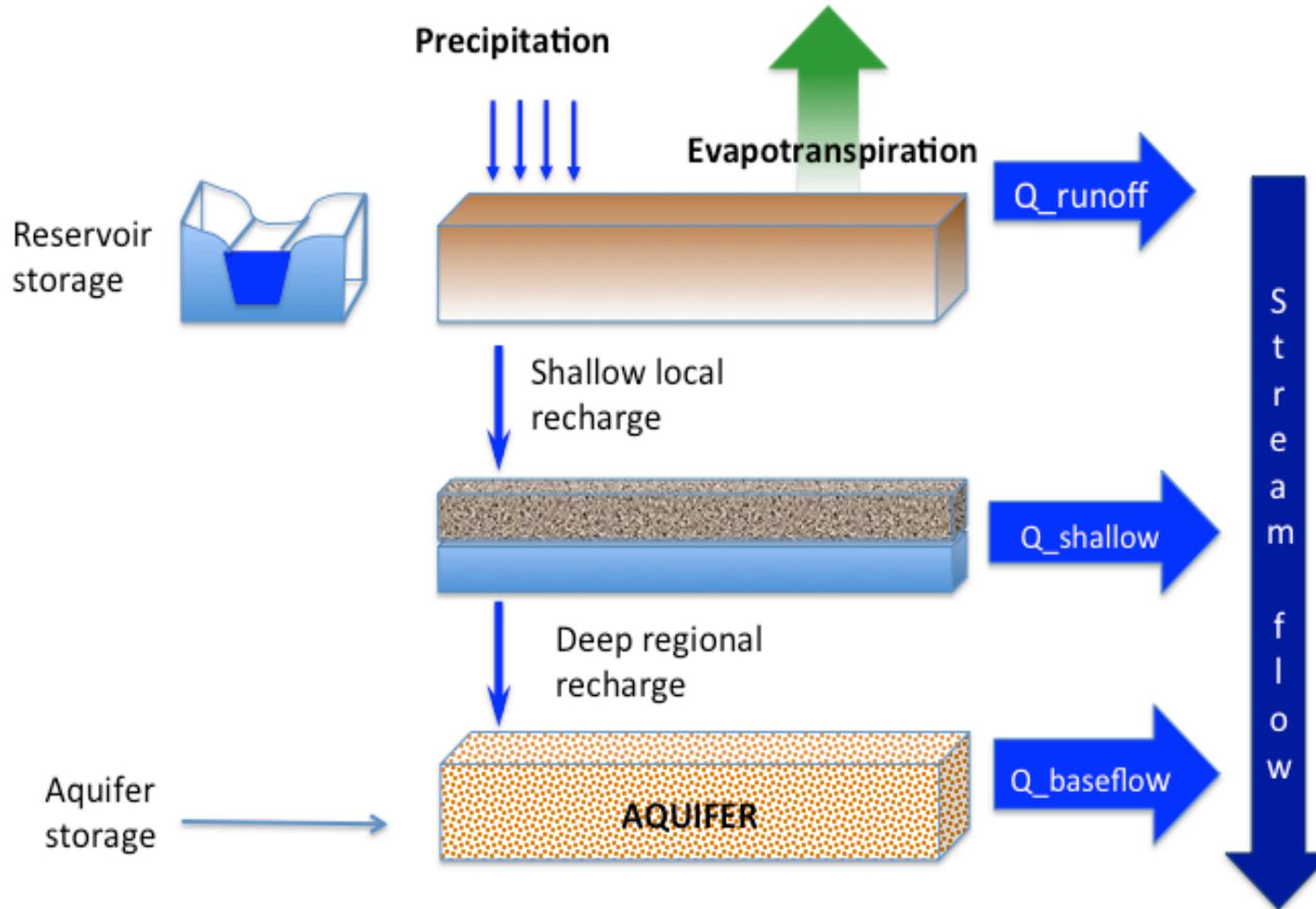
Indiana Population 1800 - 2013



GROWTH 2010 - 2050



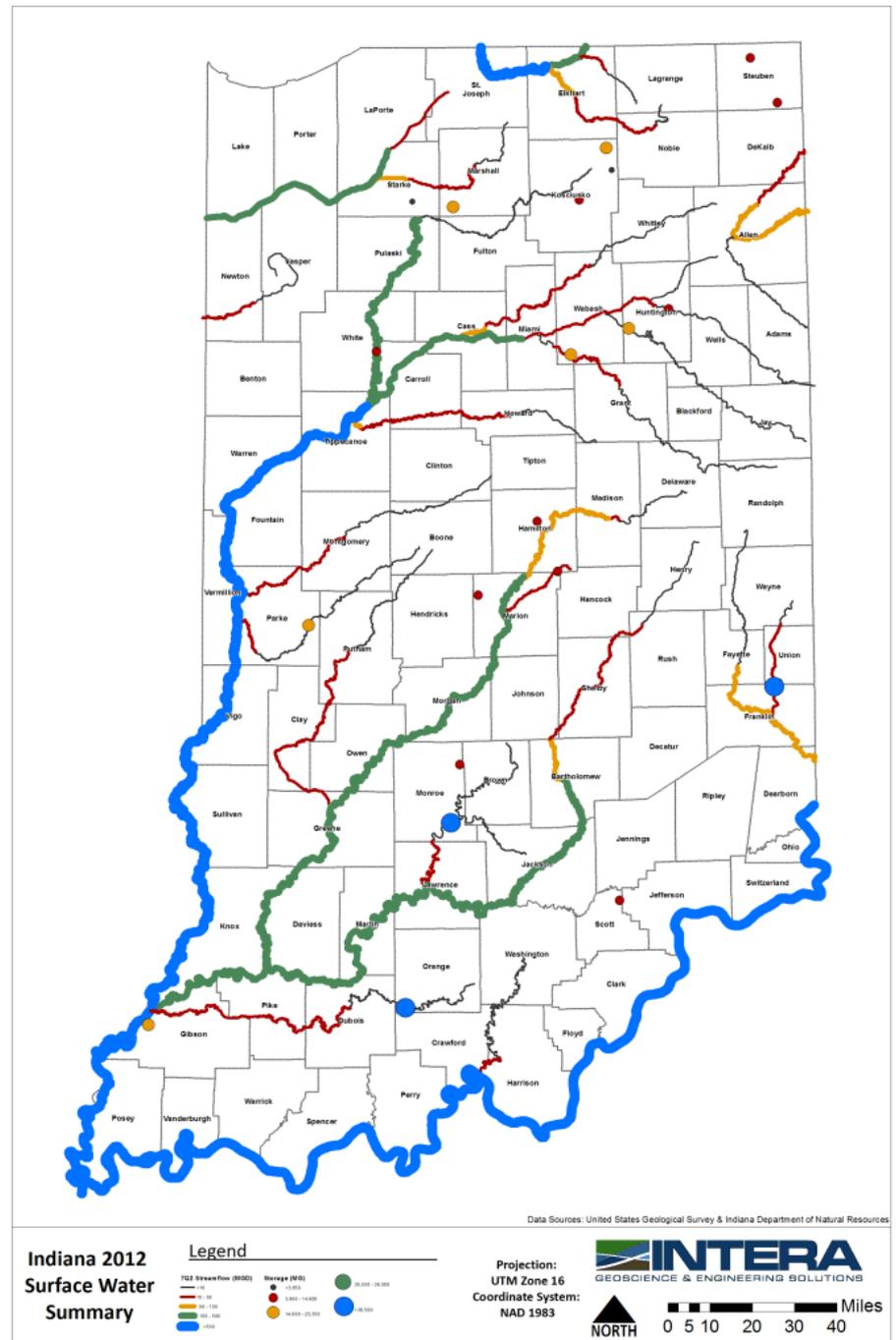
WATER AVAILABILITY



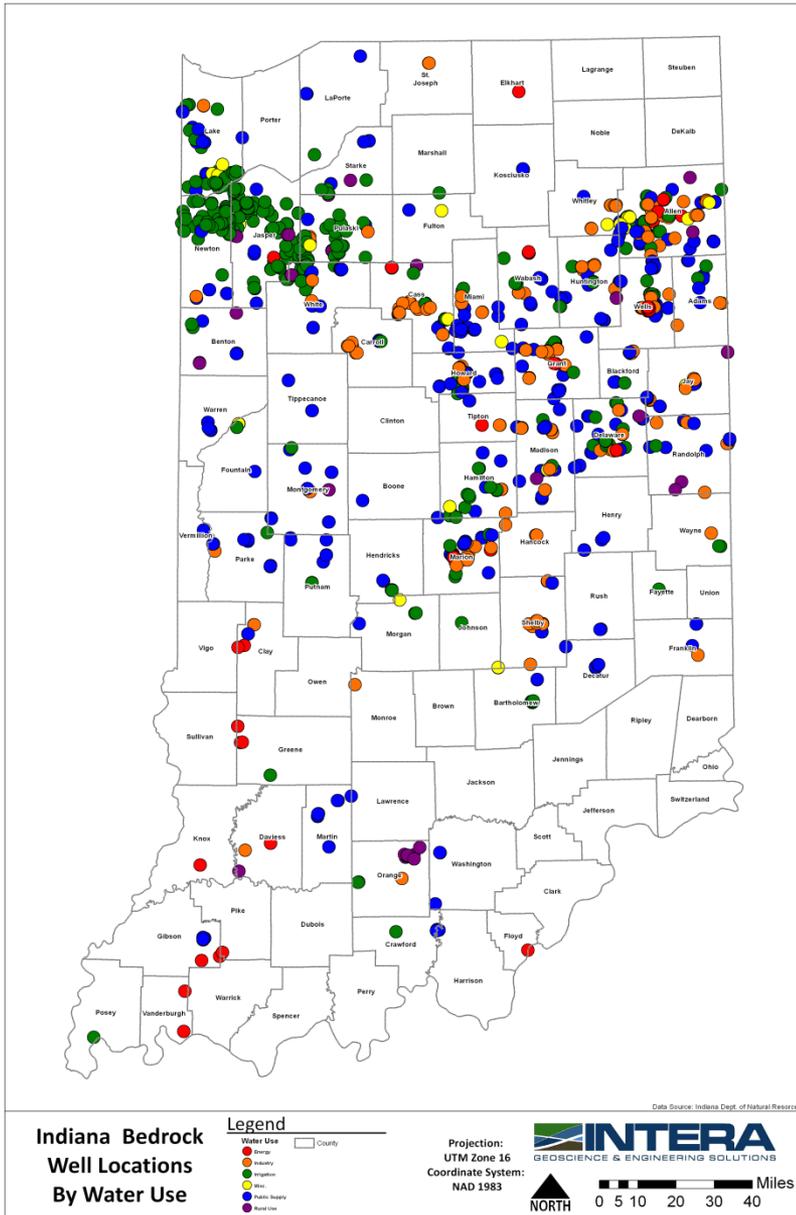
Available Surface Water

7Q2 - Stream Flows - major streams

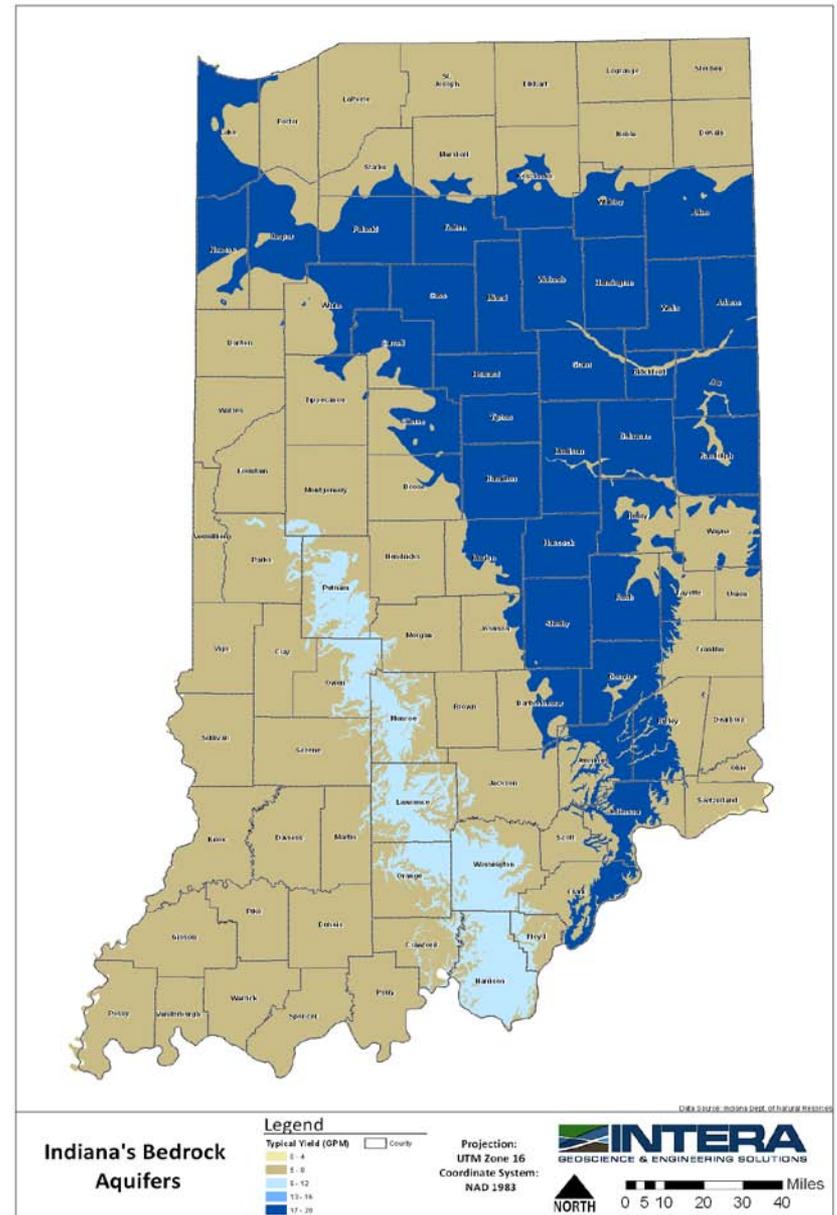
Reservoir Storage (dots)



Bedrock Well Locations

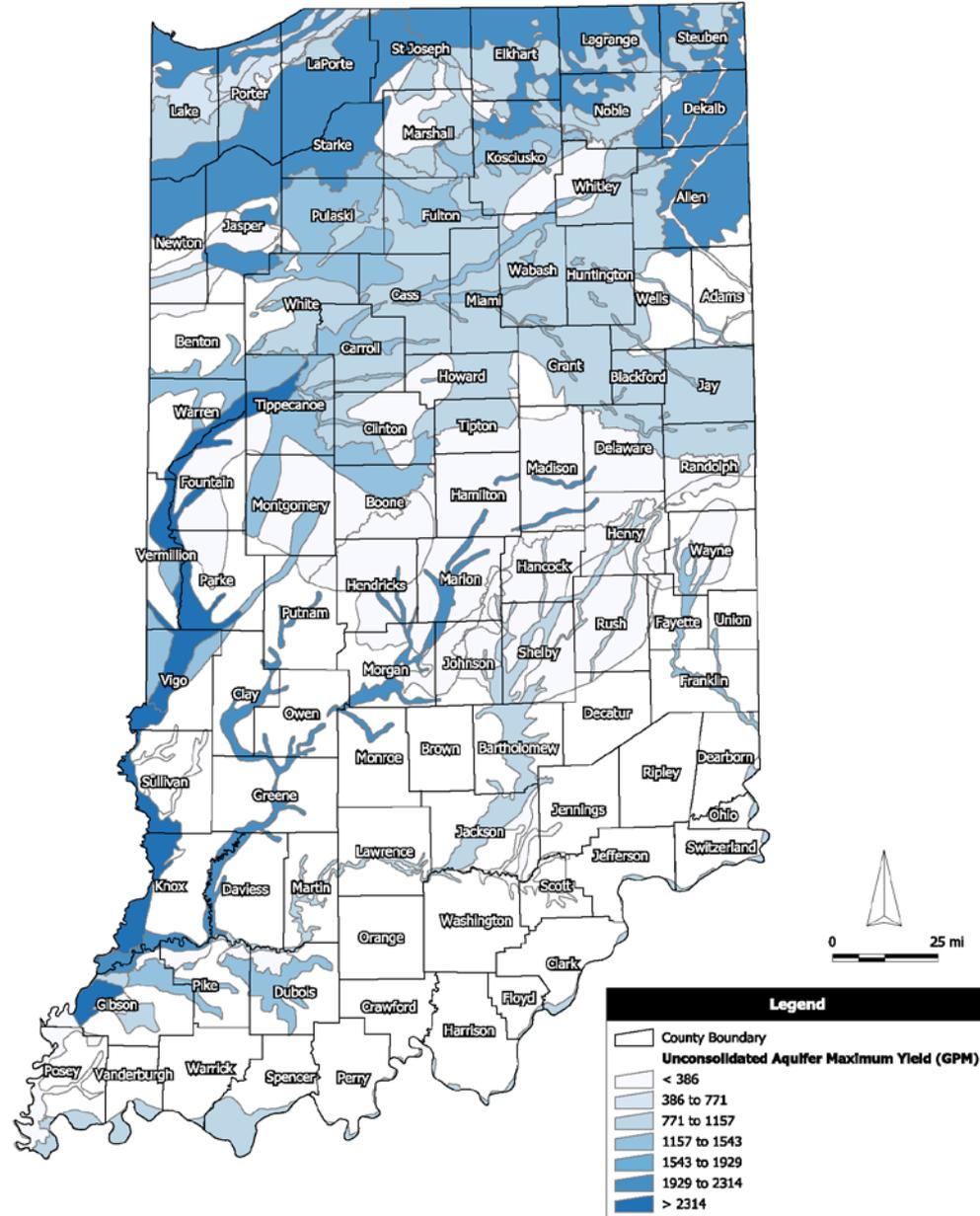


Bedrock Aquifers

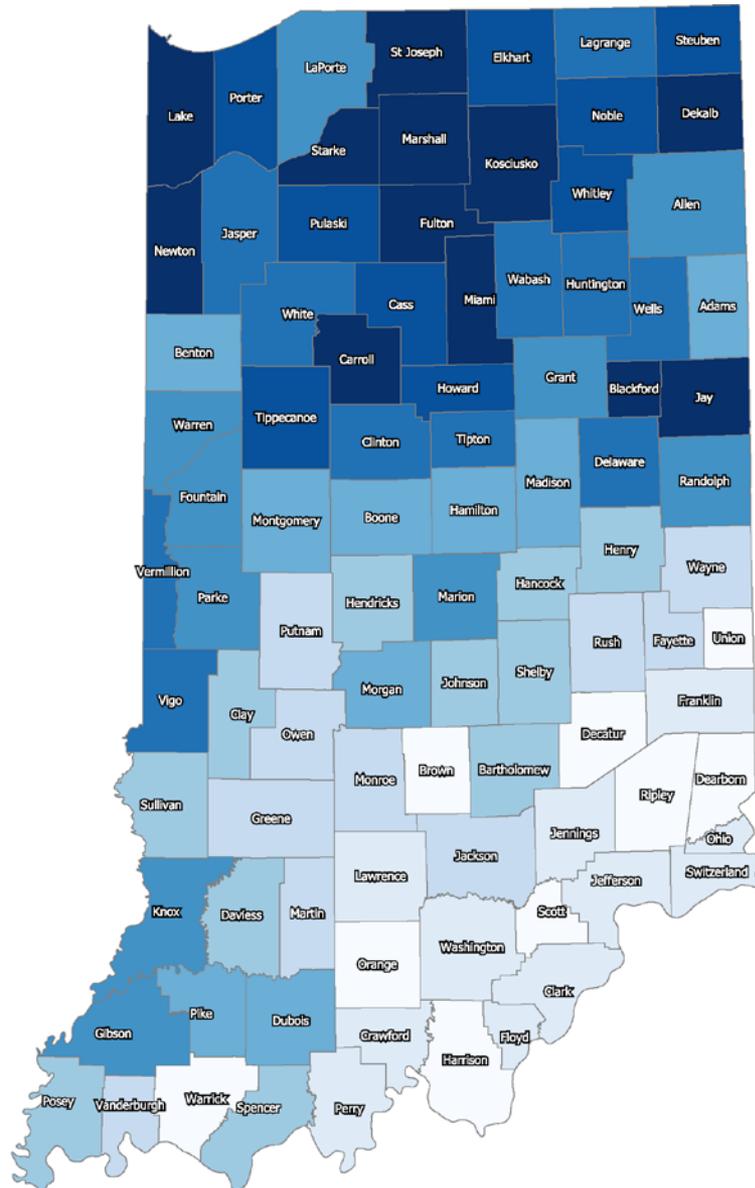


Unconsolidated Aquifer Maximum Yield

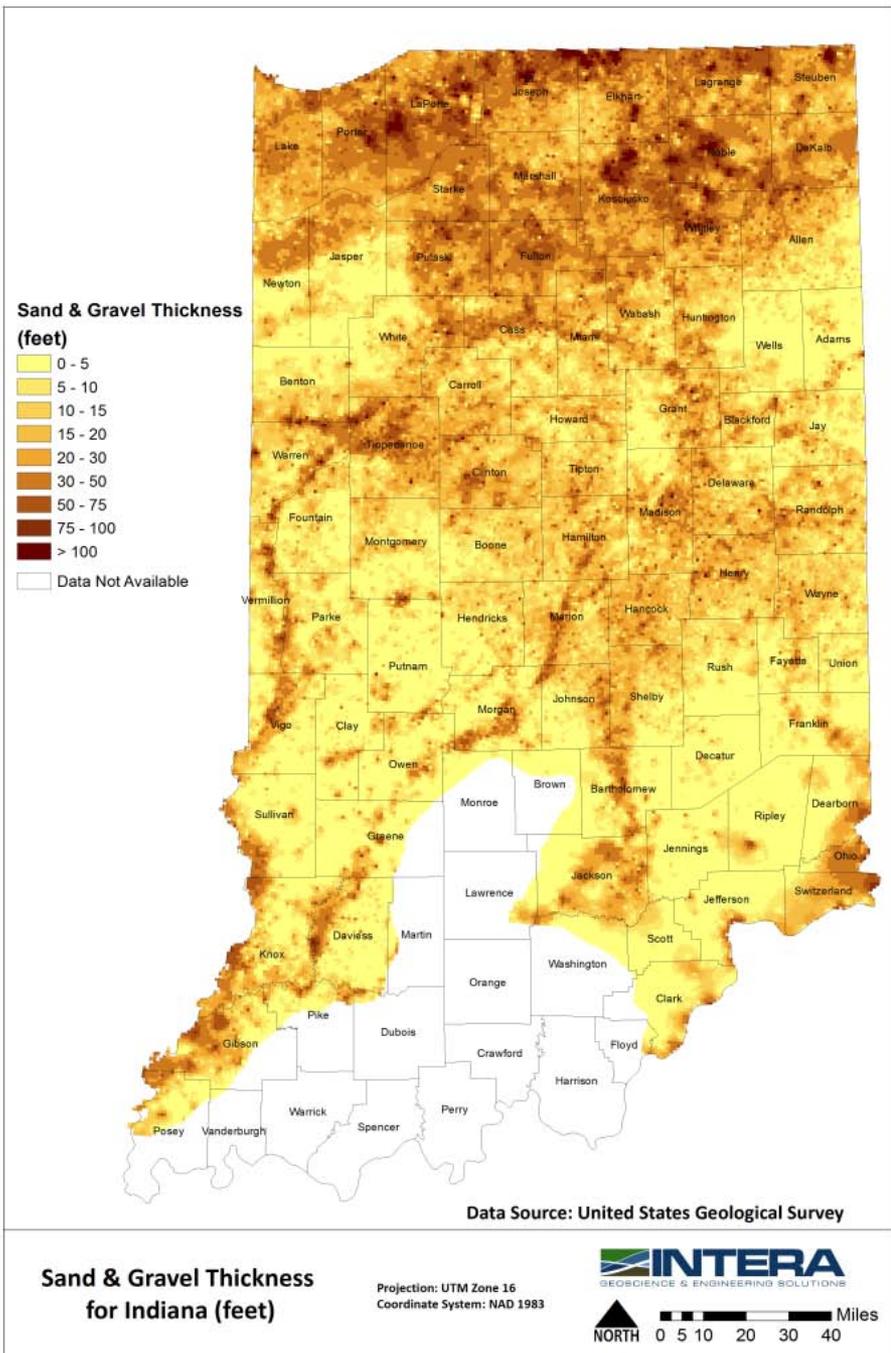
Maximum Yield from
Unconsolidated Aquifers
For individual wells

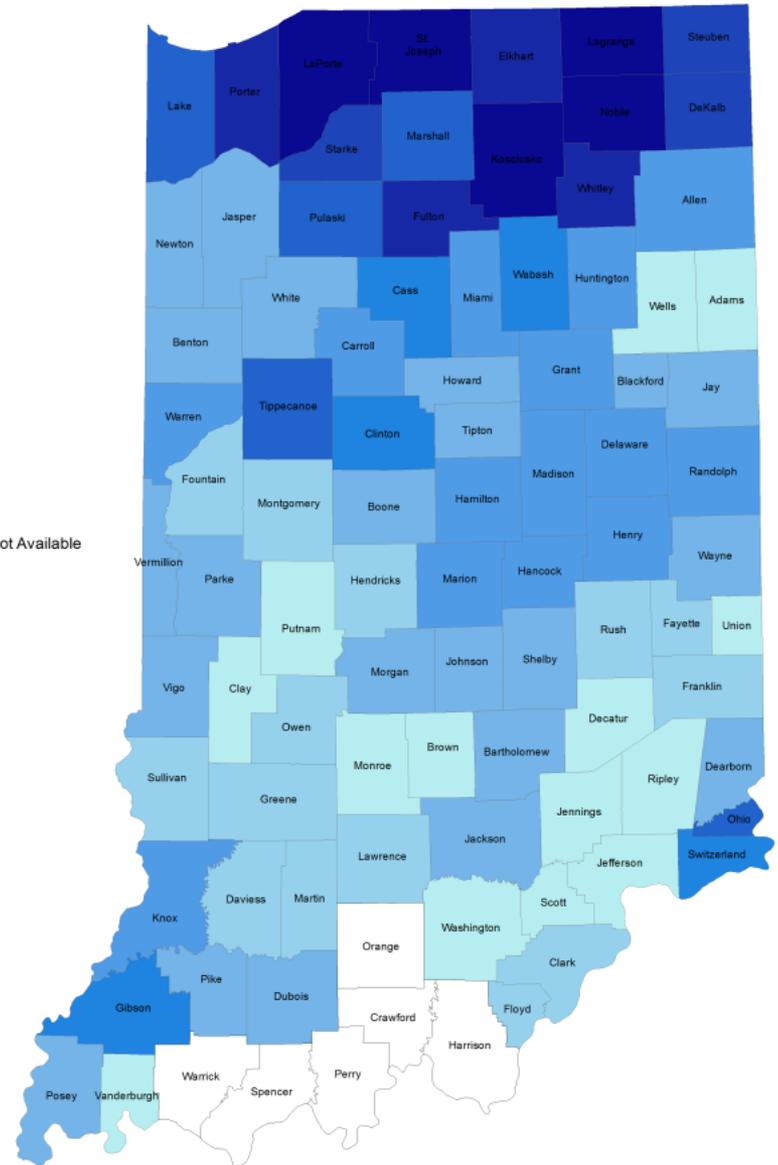
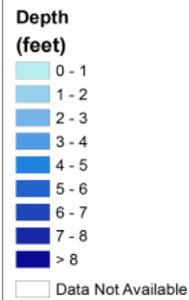


Groundwater availability - unconsolidated aquifers)



Estimated Groundwater Storage





Data Source: United States Geological Survey

**Equivalent Depth of Storage
in Sand & Gravel Layer
by County (MG)**

Projection: UTM Zone 16
Coordinate System: NAD 1983

INTERA
GEOSCIENCE & ENGINEERING SOLUTIONS

NORTH 0 5 10 20 30 40 Miles

Where are we using water, for what purpose?

WATER USE

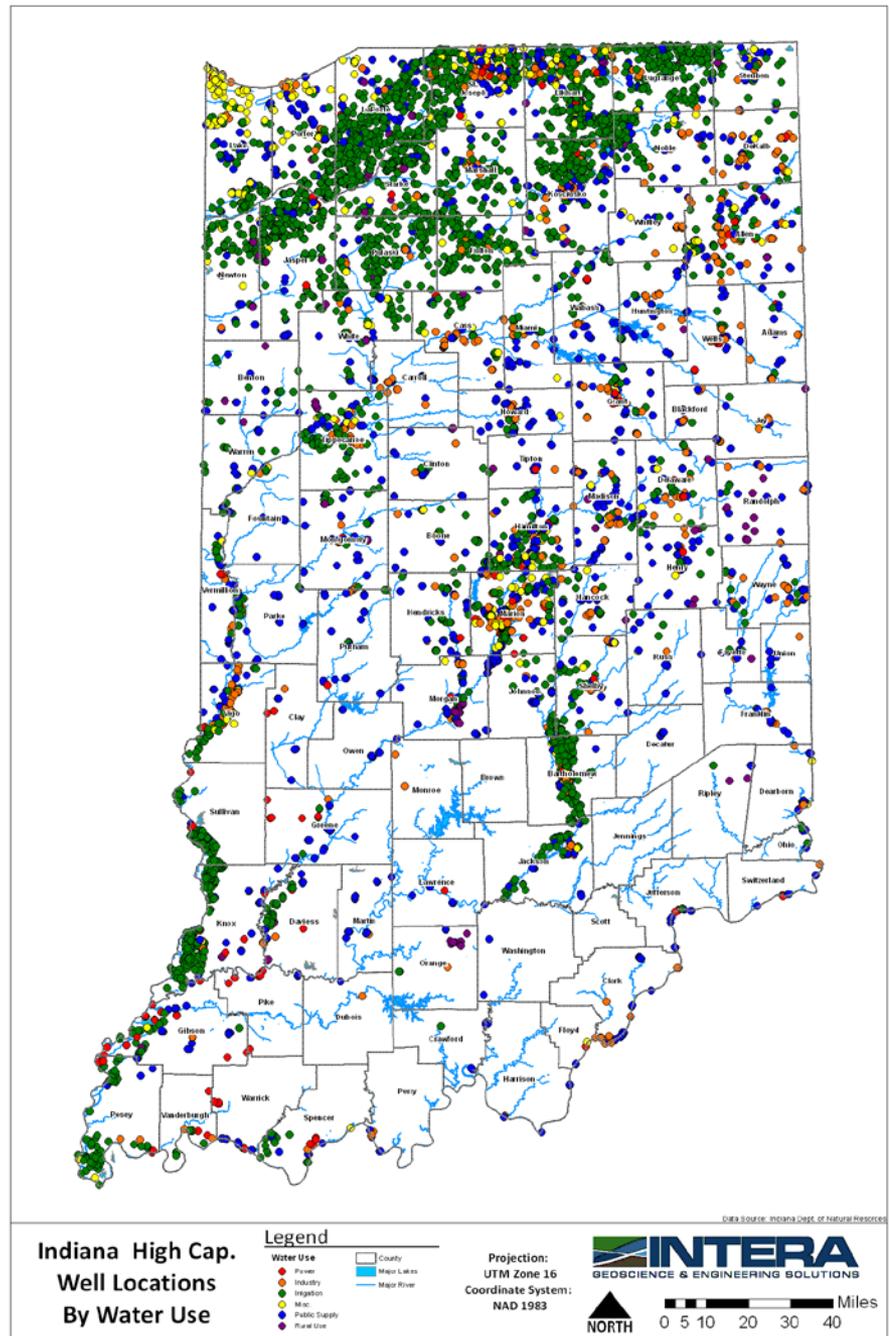
Groundwater Users

Agriculture

Industrial

Public Supply

Mining and Power



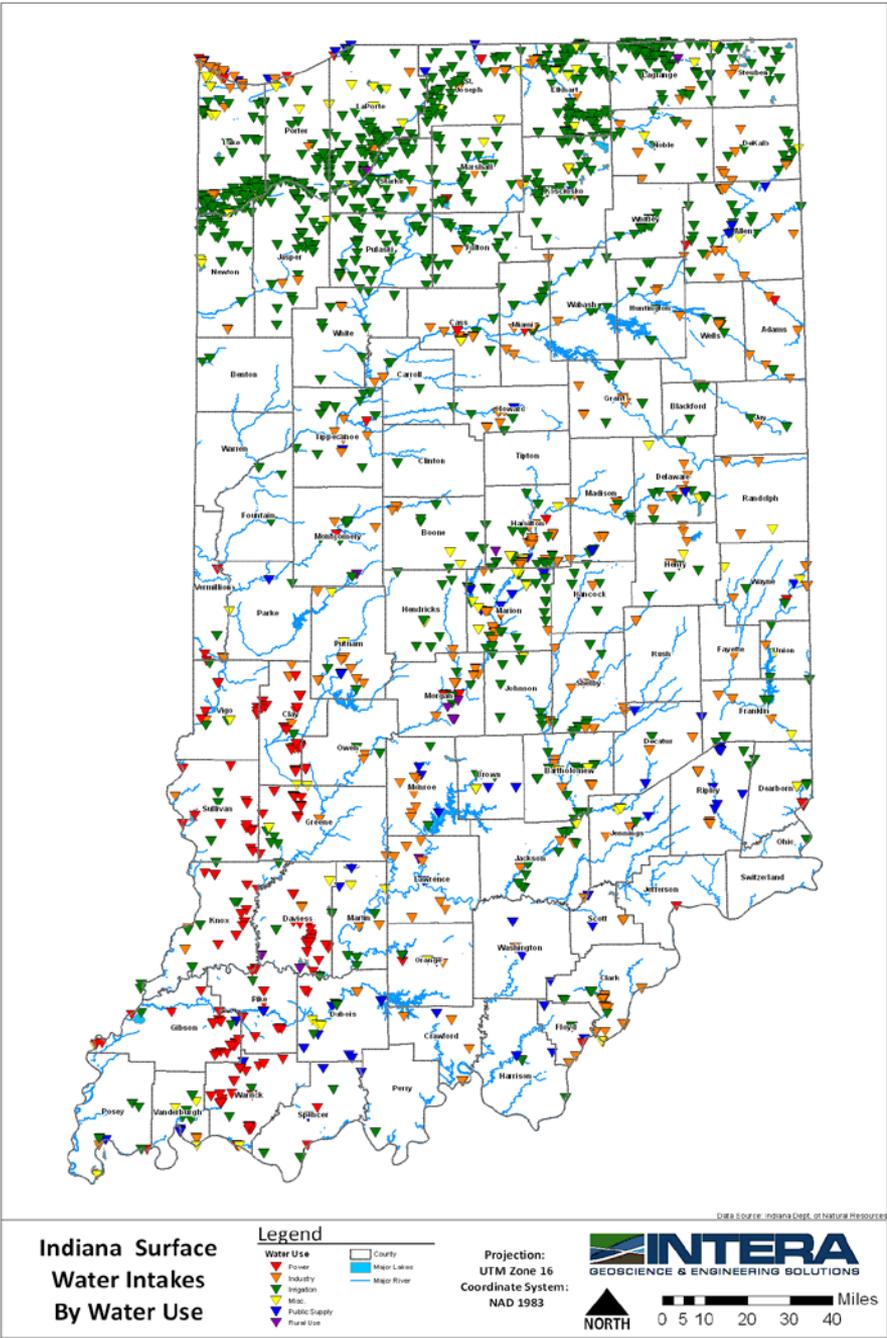
Surface Water Users

Agriculture

Industrial

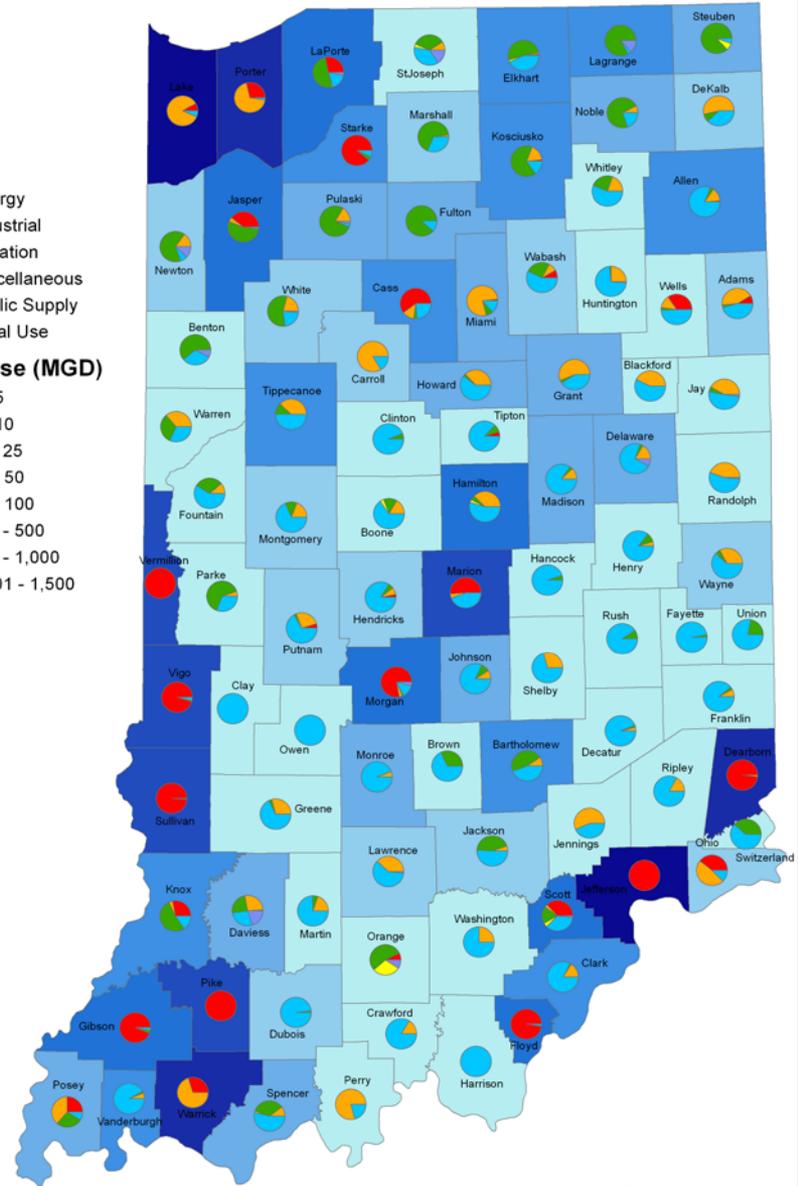
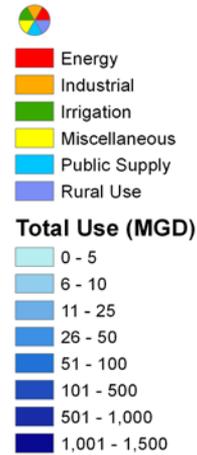
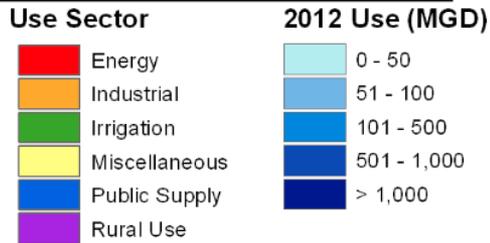
Public Supply

Mining and Power



Total Water Use by County

Legend



Data Source: Indiana Department of Natural Resources

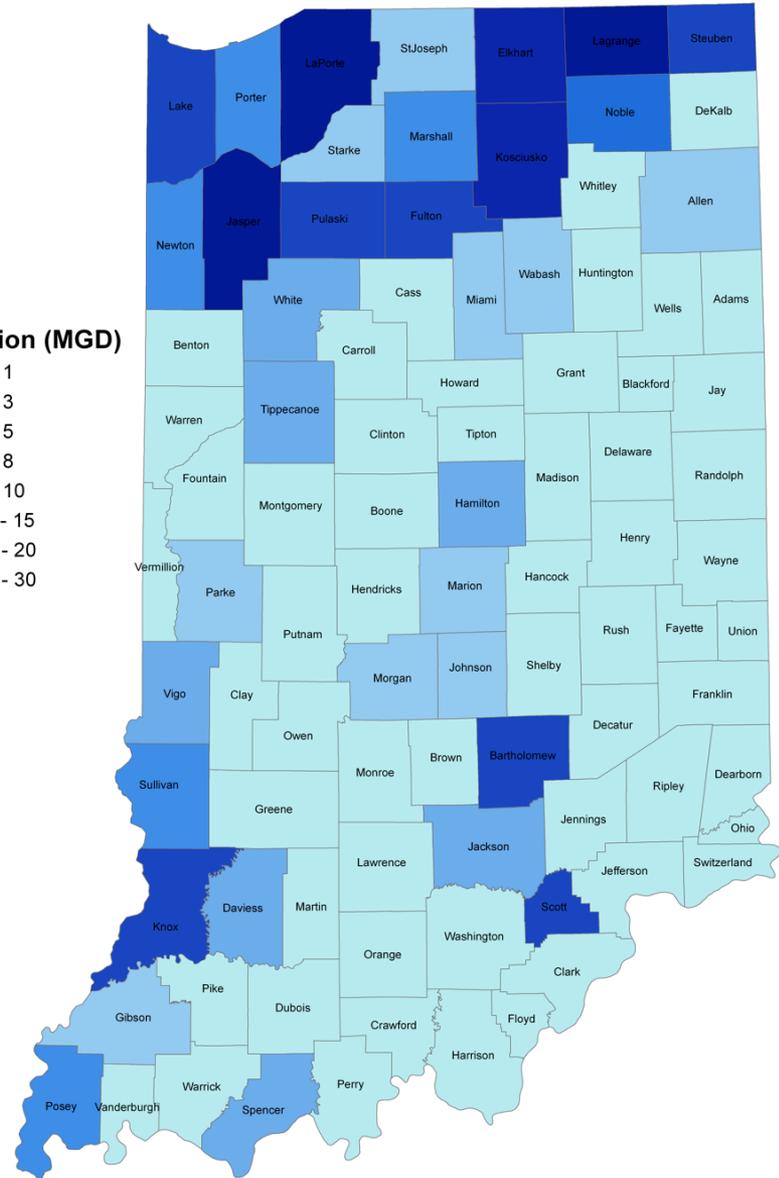
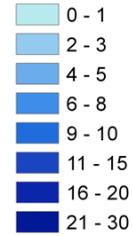
2012 Indiana Water Use
By County and Sector

Projection: UTM Zone 16
Coordinate System: NAD 1983



Irrigation Water Use by County

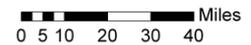
Irrigation (MGD)



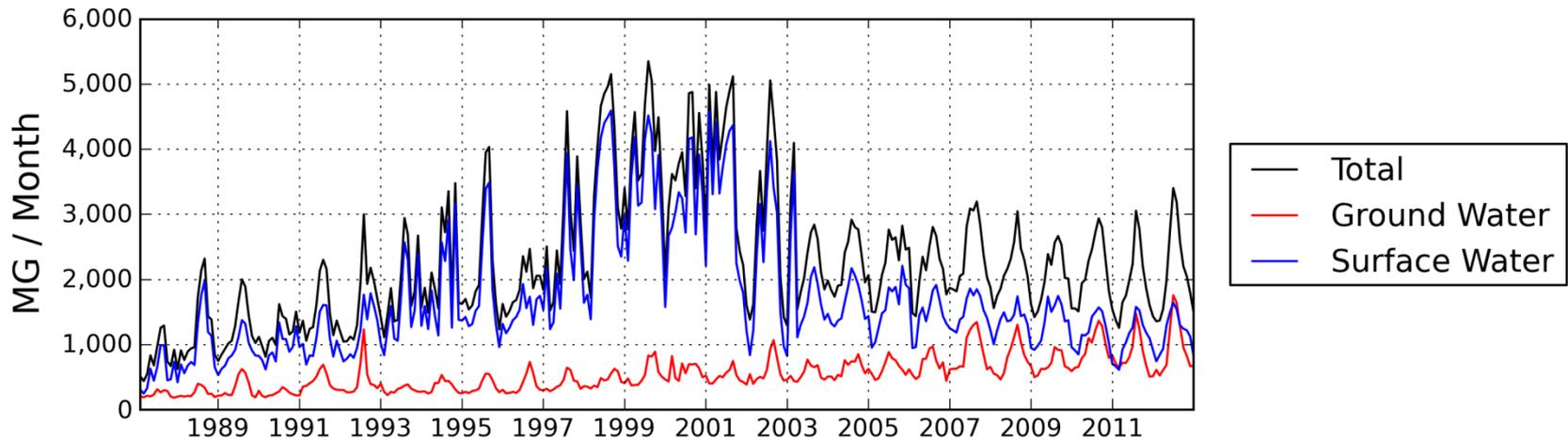
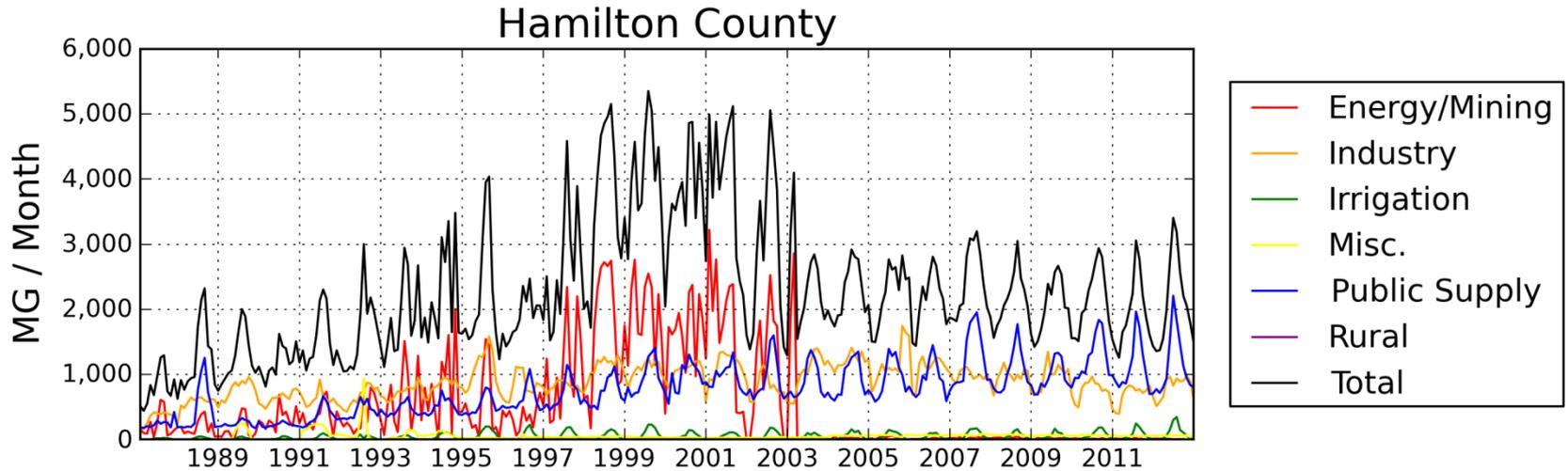
Data Source: Indiana Department of Natural Resources

2012 Indiana Irrigation Water Use by County

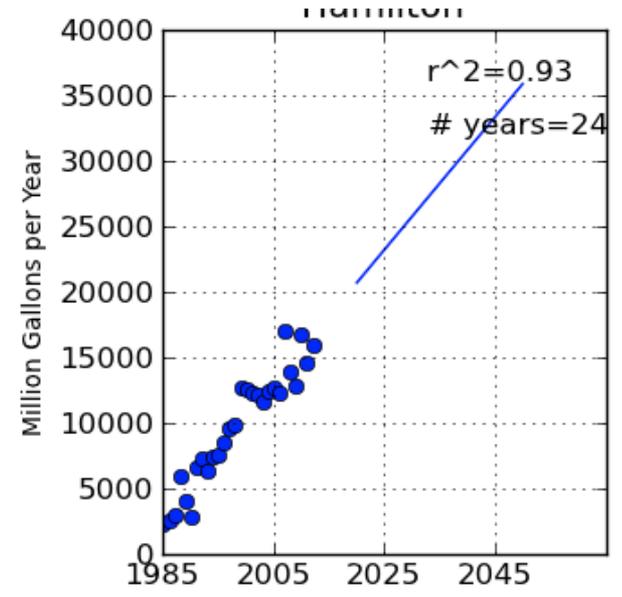
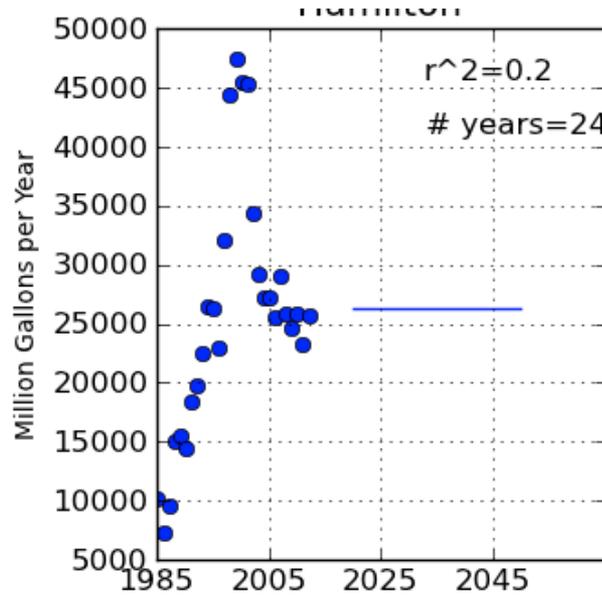
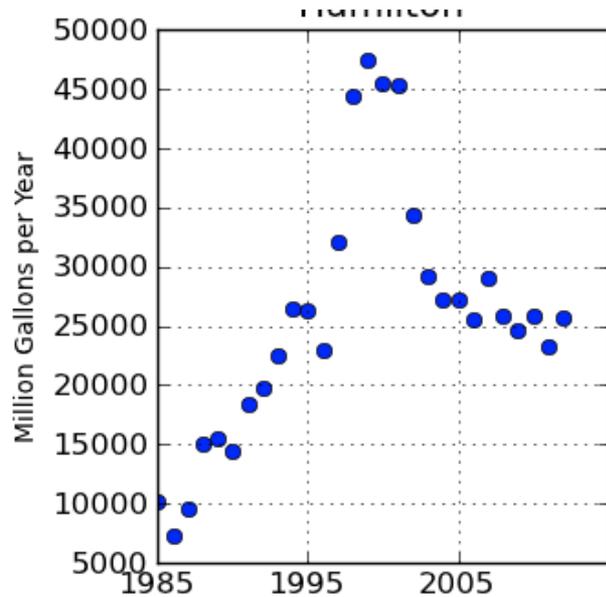
Projection: UTM Zone 16
Coordinate System: NAD 1983



Hamilton County Example



Hamilton



Annual Withdrawal Data

Annual Total w/ Forecast

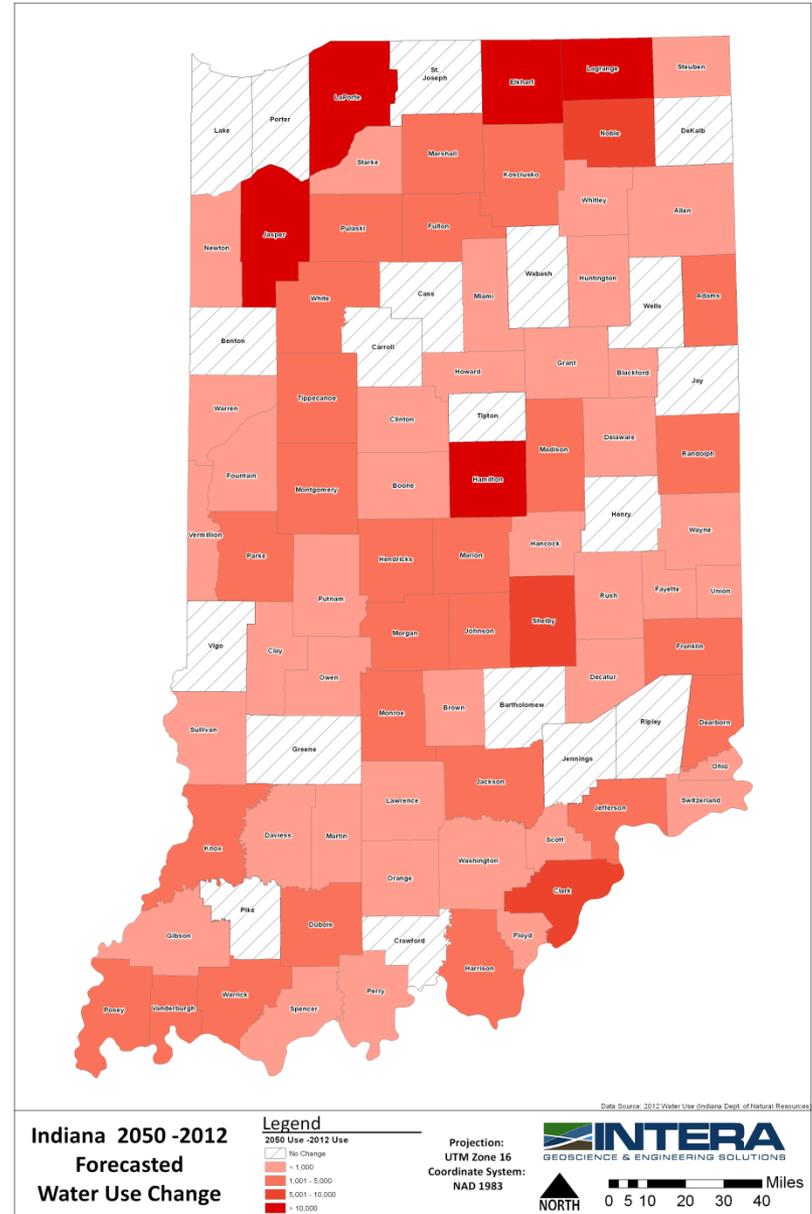
Annual Total (without Energy or Industrial Uses)

County	Energy	Industry	2012	2020	2030	2040	2050
Hamilton	1,000	11,000	28,000	33,000	38,000	43,000	48,000

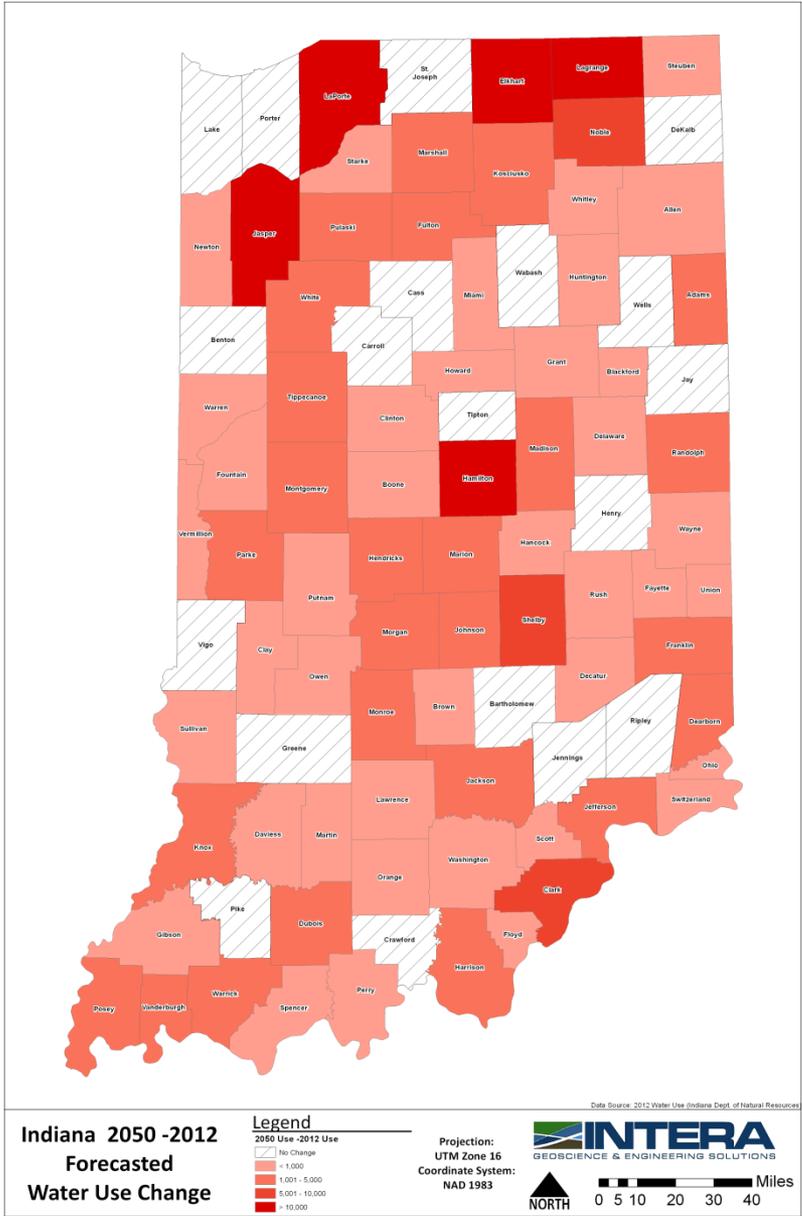
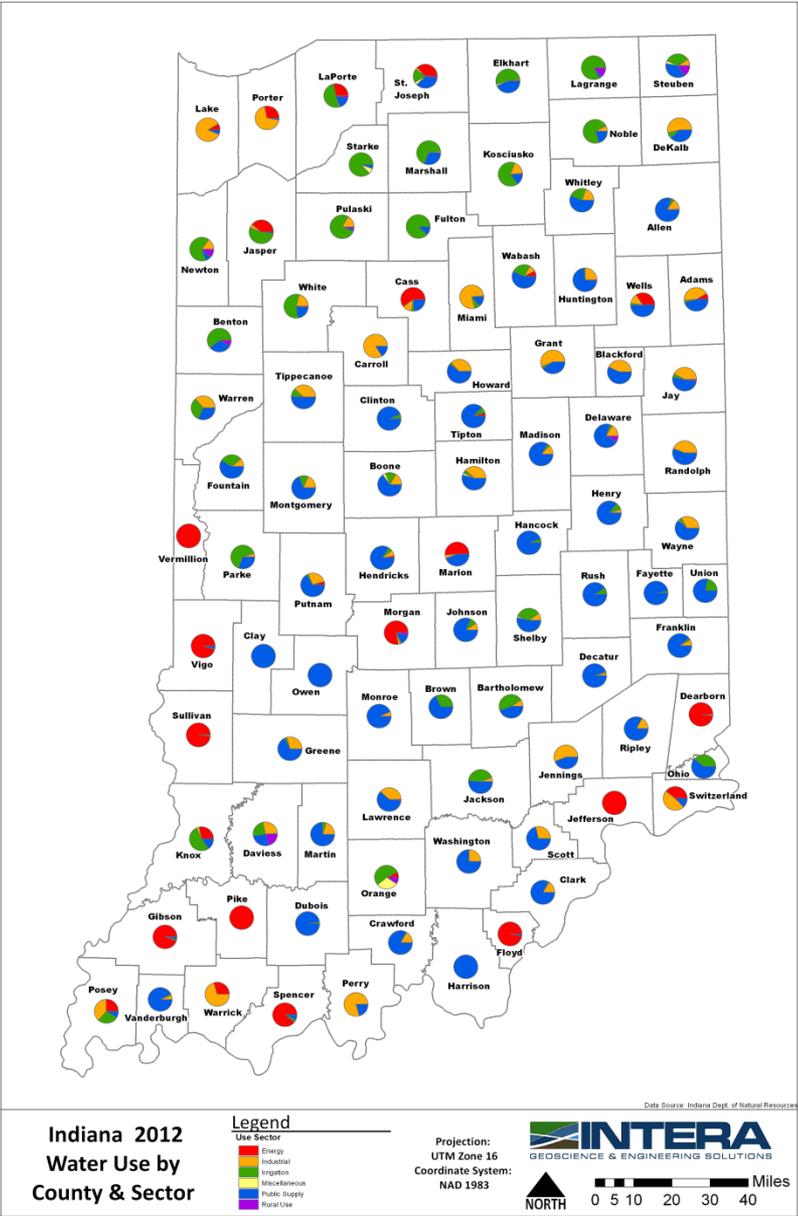
*values are in Million Gallons per Year

2050 Water Demand MG/yr

2050 Use -2012 Use



What drives future demand?



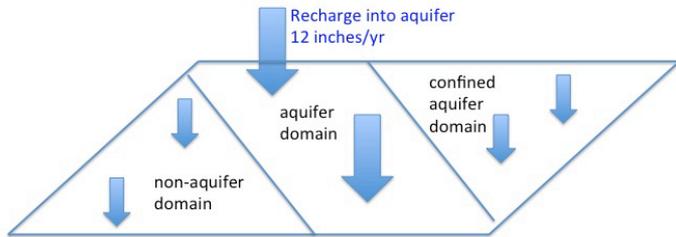
Can We Satisfy Future Needs?

SUSTAINABILITY

GW Recharge Map

County regional recharge rate estimation

North – confined aquifer = 0.5 aquifer
 Middle – confined aquifer = 0.25 aquifer
 South – confined aquifer = 0.1 aquifer
 Non-aquifer = 0.05 aquifer

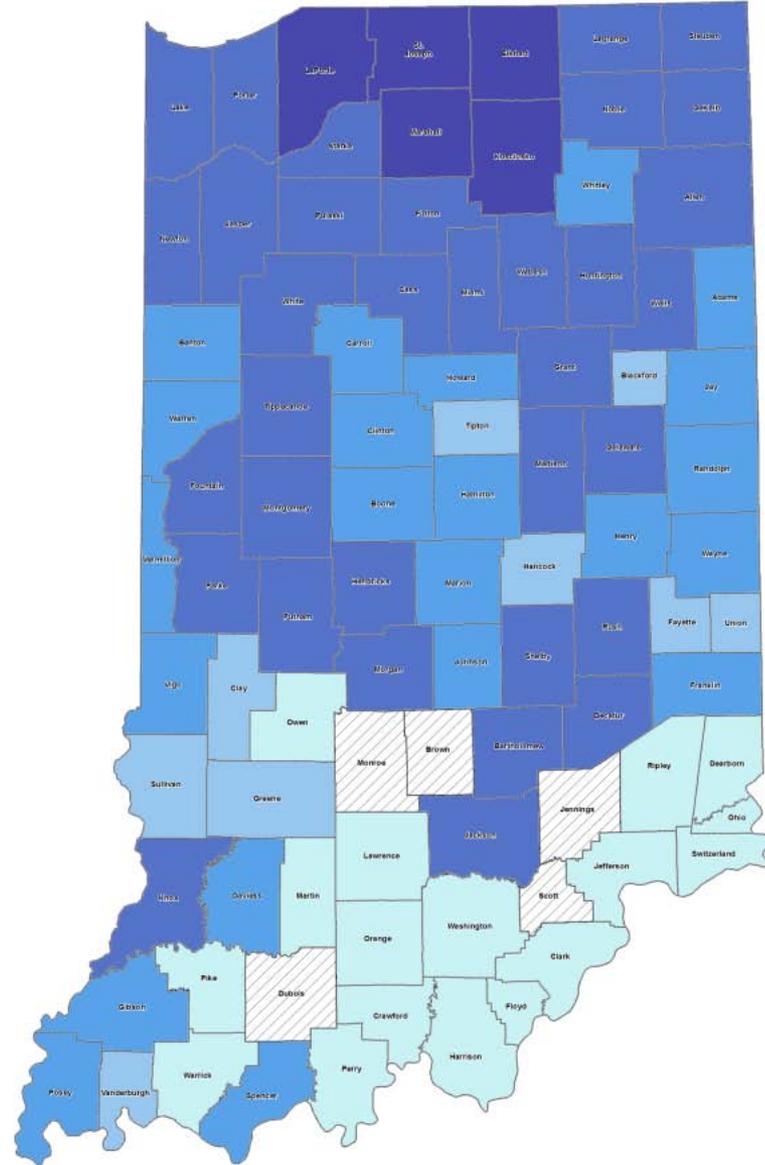


Legend

Recharge (MGD)

- >200
- 100 - 200
- 50 - 100
- 25 - 50
- <25

- No Withdrawals
- County



Data Sources: United States Geological Survey & Indiana Department of Natural Resources

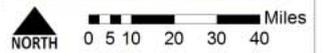
Indiana
Groundwater Recharge

Legend

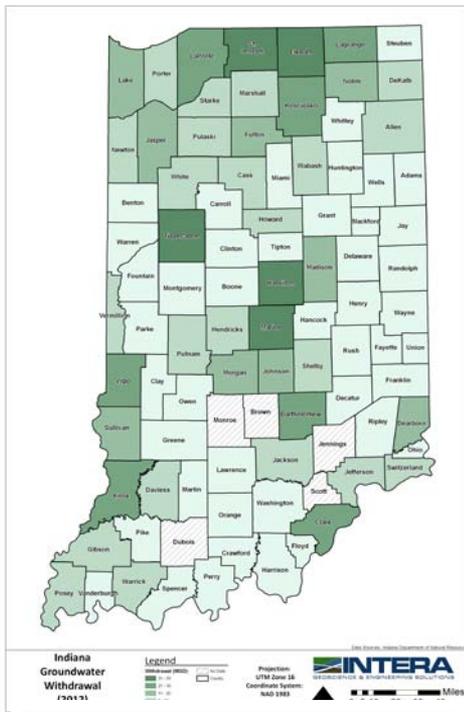
- Only Recharge
- >200
- 100 - 200
- 50 - 100
- 25 - 50
- <25
- No Withdrawals
- County

Projection:
UTM Zone 16
Coordinate System:
NAD 1983

INTERA
GEOSCIENCE & ENGINEERING SOLUTIONS

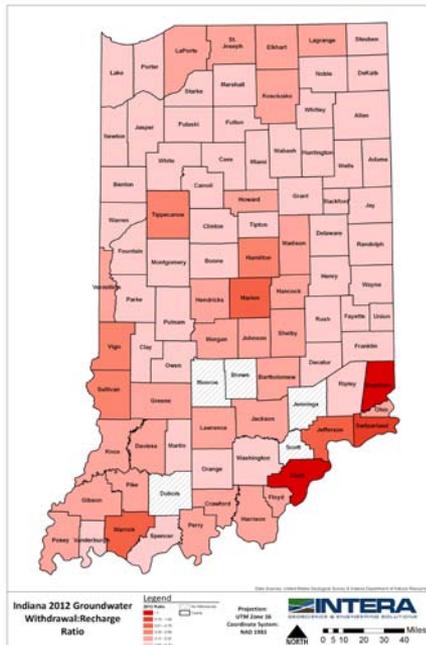
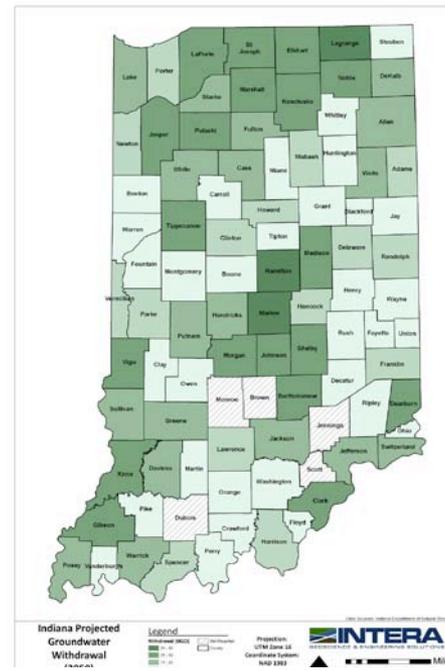


2014

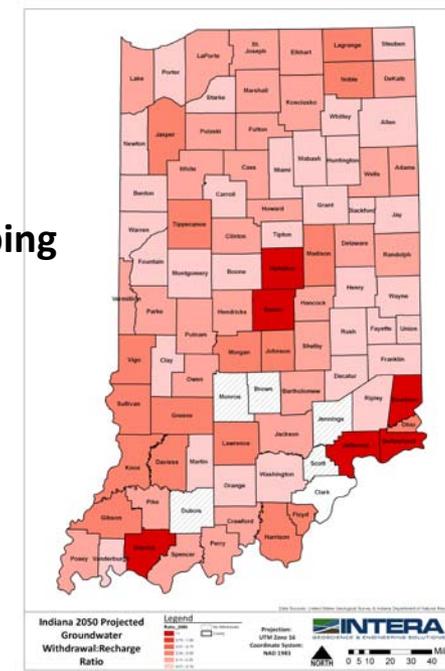


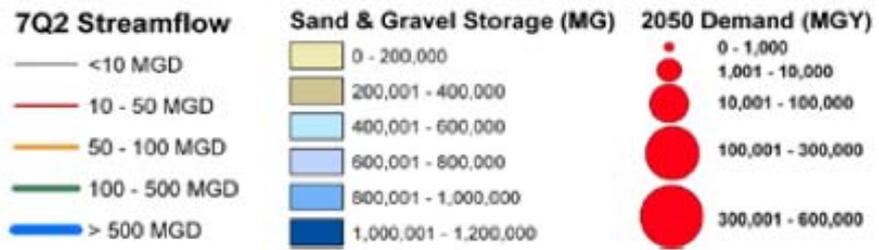
Withdrawals

2050



Recharge/
Future pumping





	2013 Population	2012 GDP	Funding Source and Amount	Responsibility	GDP growth
Texas <u>drought</u>	26,060,000	\$1.397 T	<ul style="list-style-type: none"> • \$539 M • Conservation fees • Utility water sales tax • Water rights fees • New development impact fee 	TWDB	4.8%
Minnesota <u>impacts</u>	5,380,000	\$295 B	<ul style="list-style-type: none"> • \$60 M • 0.125% sales tax • Clean Water Fund 	University Existing Agencies	3.5%
Florida <u>impacts</u> <u>storms</u>	19,310,000	\$777 B	<ul style="list-style-type: none"> • \$1 B • ad valorem taxes • state appropriations • (~3,000 employees) 	Water Management Districts	2.4%
West Virginia <u>quality</u>	1,850,000	\$69 B	<ul style="list-style-type: none"> • \$200 K • no state funding anticipated • (~5 people federally funded) 	WV DEP	3.3 %
Kentucky <u>drought</u>	4,395,000	\$173 B	<ul style="list-style-type: none"> • \$1 M • water shortage response plans (county scale) 	KY DNR Infrastructure Authority	3.4%
Virginia <u>impacts</u>	8,185,000	\$446 B	<ul style="list-style-type: none"> • \$2 M • state appropriations • (~15 employees) 	VA DEQ	1.1%
Georgia <u>impacts</u>	9,992,000	\$374 B	<ul style="list-style-type: none"> • \$10 M • state funding of regions 	GA EPD	2.1 %
Indiana	6,570,000	\$298 B	<ul style="list-style-type: none"> • none 		3.3%

What should be done?

RECOMMENDATIONS

Recommendations

- Create **awareness** for the need for water supply planning: *talk to people around the state*
- Create **capacity** to coordinate efforts: *establish a planning lead and fund water research*
- Create a robust system for **monitoring** water resources: *~100 new monitoring wells and track low-flow*
- Create a systematic approach for data **analysis**: *determine aquifer sustainability and yield*
- Create a framework for **cooperative management**: *model reservoirs and streams to optimize*
- Allow **three years** to prepare for implementation: *take the time to do this important job right*

CONTACT

jwittman@intera.com

812-219-6447



4th Quarter December 2, 2014



Next Meeting

March 3rd, 2015

