

Jody Tishmack, PhD.
Lafayette, IN 47905

September 03, 2024

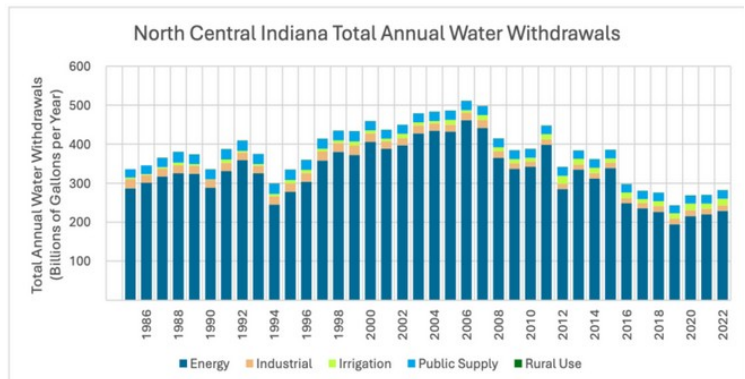
Jim McGoff,
COO & Director of Environmental Programs
Indiana Finance Authority
One North Capitol, Suite 900
Indianapolis, IN 46204

Re: North Central Indiana Water Study Update

Dear Mr. McGoff:

I recently reviewed your memorandum “Progress update on the North Central Indiana Water Study”. <https://www.in.gov/ifa/files/NCIR-Water-Study-Update-06-20-2024.pdf> Your statements were widely repeated in news reports including this one: <https://indianacapitalchronicle.com/briefs/north-central-water-withdrawals-in-decline-indiana-finance-authority-reports/>

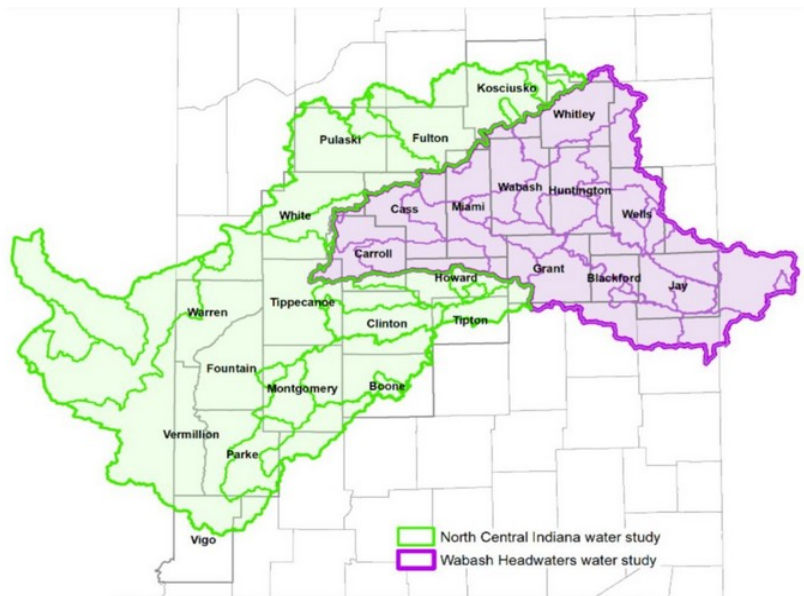
“Water withdrawals in the state’s north-central region have dropped — not risen — over the last two decades, the Indiana Finance Authority (IFA) reported Thursday.” Average water withdrawal in the area was about 770 million gallons per day in 2022, according to McGoff’s letter. Most, 88%, came from surface-water diversions while 12% came from groundwater wells. Much of the decline was in the energy sector, McGoff wrote, but the industry is still responsible for 85% of total water withdrawal.



The data you cited are accurate but highly misleading because one county is responsible for 77% of the combined water used by all 25 counties. Your chart showing North Central Indiana Total Annual Water Withdrawals is based on skewed data and gives the wrong impression of water use in the North Central region. Using the same data from the DNR database (<https://www.in.gov/dnr/water/files/wa-water-use-summary-2022.pdf>), I created a table organizing water withdrawals by county, category, and relative amounts of surface and groundwater withdrawals for the most recent year, 2022. I include parts of that table below and one can readily see that the largest water user was Vermillion County. It used 229,110 MG/yr, which was almost entirely surface water withdrawals primarily for the energy sector. In comparison, Tippecanoe County was the second highest water user with only 12,093 MG/yr, which was almost entirely groundwater. The Vermillion County water usage is an outlier making it appear that the region predominantly uses surface water when the opposite is true. If we include Vermillion County in the North Central region, water usage is 82% surface and 18% groundwater. If we exclude Vermillion County from the study, water usage for the other 24 counties in the region is 19% surface and 81% groundwater. Most of the counties included in the study use groundwater rather than surface water, and few counties use water for the energy sector.

North Central Counties	Energy Sector		Surface Intake (MG)	Wells (MG)	Total Surface Withdrawal MG	Total Well Withdrawal MG	Total County Withdrawal MG
	Percent surface	Percent wells					
Blackford	21.9	78.1	0.00	0.00	130.98	466.18	597.16
Boone	29.9	70.1	0.00	0.00	344.04	807.61	1,151.65
Carroll	68.2	31.8	0.00	0.00	1,254.35	586.15	1,840.50
Cass	11.5	88.5	0.00	0.12	334.25	2,584.28	2,918.53
Clinton	10.3	89.7	0.00	0.00	16.99	147.62	164.61
Fountain	1.4	98.6	0.00	0.00	16.44	1,128.15	1,144.59
Fulton	5.0	95.0	0.00	0.00	245.06	4,694.31	4,939.37
Grant	20.6	79.4	0.00	21.16	438.54	1,694.01	2,132.55
Howard	64.6	35.4	0.00	0.00	2,486.56	1,359.73	3,846.29
Huntington	31.5	68.5	0.00	0.00	571.41	1,244.87	1,816.28
Jay	27.8	72.2	0.00	0.00	281.04	729.09	1,010.13
Kosciusko	8.5	91.5	0.00	665.65	613.43	6,567.04	7,180.47
Miami	75.1	24.9	0.00	0.00	2,565.44	850.48	3,415.92
Montgomery	12.6	87.4	0.00	0.00	224.09	1,557.17	1,781.26
Parke	0.0	100.0	0.00	0.00	0.00	647.87	647.87
Pulaski	28.0	72.0	0.00	0.00	1,598.82	4,114.17	5,712.99
Tippecanoe	1.8	98.2	0.00	0.00	221.76	11870.94	12,092.70
Tipton	0.0	100.0	0.00	0.00	0	432.72	432.72
Vermillion	99.2	0.8	227,070.90	1.71	227,214.68	1,895.66	229,110.34
Vigo	0.3	99.7	4.40	1,099.24	20.90	6,950.94	6,971.84
Wabash	4.8	95.2	0.00	194.69	98.05	1,965.12	2,063.17
Warren	0.0	100.0	0.00	0.00	0.00	579.11	579.11
Wells	22.9	77.1	0.00	398.63	322.16	1,087.52	1,409.68
White	28.6	71.4	0.00	0.00	713.33	1,777.92	2,491.25
Whitley	5.9	94.1	0.00	0.00	66.13	1,050.30	1,116.43
			227,075	2,381	239,778	56,789	296,567

I believe it is scientifically justifiable to exclude the outlying Vermillion County data from the North Central Indiana Water Study to properly understand what is happening within the North Central drainage basin (which is one of your stated goals). Vermillion County Indiana is a small eastern section of the Vermillion Basin in Illinois. It is located along the southwestern boundary of the study area. Its water usage has little influence on the upstream counties included in the study. Much of the Vermillion Basin watershed flows east from Illinois into the Wabash River Basin.



Watersheds - Vermilion-Wabash Basin



Watershed Profile

Name

Vermilion-Wabash Basin

USGS Cataloging Unit

05120109

Description

The Vermilion watershed in eastern Illinois and western Indiana is part of the Wabash River basin. With drainage from five Illinois counties, the Illinois portion of the watershed has a total area of approximately 1,300 square miles. Agriculture is the primary use of land within the watershed. This watershed should not be confused with the Vermilion watershed in east-central Illinois, which is part of the Illinois River basin.

Web Resources

<http://ilrdss.sws.uiuc.edu/links/watersheds.asp?ws=141>

Including the Vermillion County data significantly skews the overall picture of water use in North Central Indiana counties and leads to the anomalous conclusion that counties are using mostly surface water and the amount is declining. If we exclude water withdrawn in Vermillion County, the daily water usage for the North Central region drops from 770 to 190 MG/day. Water usage in Tippecanoe County, from where the LEAP project is proposing to take the water it needs, is significantly different than in Vermillion County. We use 33 MG/day (98% groundwater), which is then discharged to the Wabash River. Groundwater levels in Tippecanoe County would certainly be impacted if we were to increase groundwater withdrawals by an additional 100 MG/day and exported it out of the Wabash River Basin to the LEAP district in Boone County.

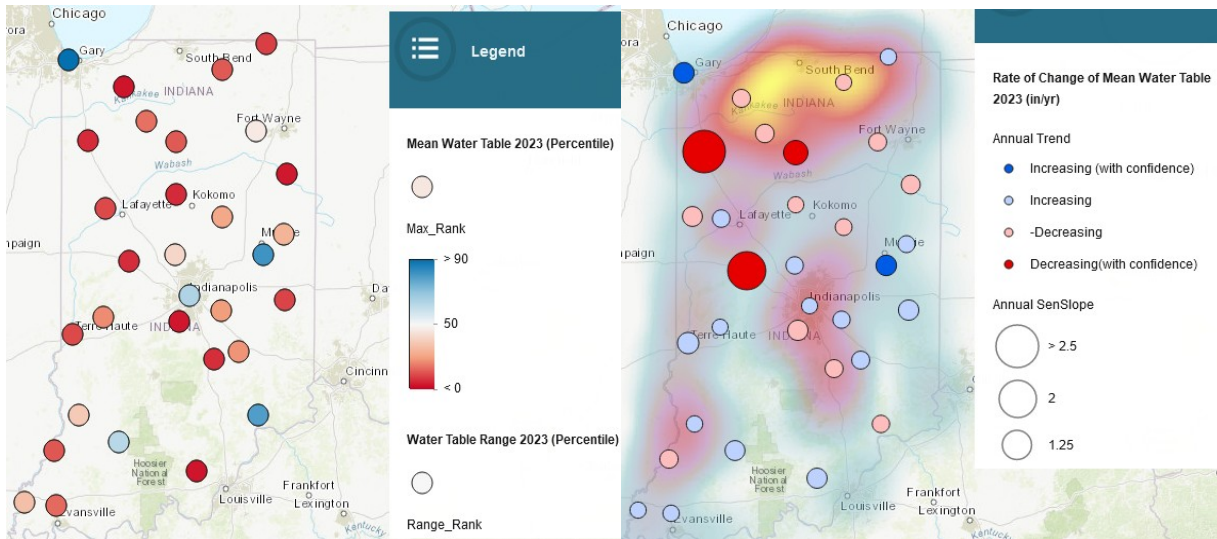
The North Central Region's groundwater levels are declining not rising, and we need more monitoring that we currently have.

The Indiana Chamber of Commerce 2024 update on **Indiana's Water Supply and Economic Development** reports: "Groundwater Use is Increasing – Better Groundwater Level Data Needed"

"While industrial use, power generation, and mining operations continue to pump water from rivers and streams, over the last decade groundwater withdrawal has increased more rapidly than surface water diversions. The aquifers of the state are becoming increasingly important as a means of satisfying seasonal demands while controlling costs of treatment and conveyance. The water use data reported to the Indiana Department of Natural Resources (IDNR) suggests that this trend could continue and intensify as the climate becomes less stable and regional shortages develop." - Jack Wittman (INTERA)

<https://www.indianachamber.com/news-resources/studies-reports/indianas-water-supply-economic-development/>

The USGS monitors both ground water and surface water. The maps below show the ground water monitoring locations, the mean water table in 2023, and the rate of change. We can see that the mean water table has decreased, and in many counties the rate of decline is significant. The USGS monitors far more streamflow gauges than groundwater monitoring wells, giving us a better understanding of surface water than groundwater. There is only one USGS monitoring well located in Tippecanoe County and it is located in an area that is stratigraphically different from the area of interest being explored for the LEAP wells. This monitoring well is not sufficient if we are to understand the impact of removing 100 MG/day of water from our aquifer.



<https://purdueuniversity.maps.arcgis.com/apps/View/index.html?appid=d019254460b04ac29432599afb3f63e5>

In conclusion, last November Governor Holcomb directed the IFA to determine whether Tippecanoe County had sufficient water resources to supply the LEAP Innovation and Research District in Boone County without harming resources available to other communities. *“I am confident that these new efforts led by IFA will provide the necessary data to gain a greater understanding of the amount of excess water that is truly available to support all the surrounding region’s growth prior to any action being taken that could inadvertently jeopardize this needed resource,”* <https://www.insideindianabusiness.com/articles/governor-shifts-oversight-of-leap-water-study-away-from-iedc>

The Governor’s statements have lead residents of Tippecanoe County to expect a thorough study of our aquifer. Last March, IFA spokesperson Stephanie McFarlane made the following statement directly contradicting the statement by Governor Holcomb, *“IFA is not conducting a study pertaining to the LEAP project. It is conducting a North Central Indiana Regional Water Study. It is one of a series of regional water studies the State has conducted.”* <https://fox59.com/indiana-news/ifa-expands-water-study-says-its-not-about-leap-district/>

So what is the purpose of the IFA’s North Central Water Study? Are you going to *“provide the necessary data to gain a greater understanding of the amount of excess water that is truly available”*, or will you rely on skewed data in order to erroneously conclude that water withdrawals in the state’s north-central region have dropped not risen, and most came from surface-water diversions. Such conclusions might lead to the false assumption that there is little risk of harm to our groundwater supply from the proposed LEAP water transfer. The appropriate action would be to install new monitoring wells and actually conduct a thorough scientific study of our aquifer. Residents of Tippecanoe County deserve to know the truth.

Sincerely,

Jody K. Tishmack, Ph.D.
 CEO/President
 Tischmak & Sohne, Inc.
 DBA: Soilmaker

CC:
 Mayors: Tony Roswarski (Lafayette) and Erin Easter (West Lafayette)

Greater Lafayette Commerce: Scott Walker and Paul Moses
County Commissioners: Tracy Brown, Tom Murtaugh, and David Byers
State Senators: Spencer Deery and Ron Alting
State Representatives: Chris Campbell and Sheila Klinker