

DIGITAL MAPPING TECHNIQUES 2024

The following was presented at DMT'24
May 13 - 16, 2024

The contents of this document are provisional

See Presentations and Proceedings
from the DMT Meetings (1997-2024)

<http://ngmdb.usgs.gov/info/dmt/>

Understanding the Geological Data Needs of Your State -- Discussion about how to meet the geological data needs of your state

By Matt Johnson (Assistant Director for Information Services, Indiana Geological and Water Survey)

The Indiana Geological and Water Survey (IGWS) recently started a campaign to understand the geological needs of Indiana. The IGWS, as a state-funded survey, has had minimal to no increases in its appropriation for many years, and discussions have shown that our organization and our work is not understood or even known about. Our goal is to enter regional, county, and town conversations to hear how we can provide needed geological data and information for decision-making in Indiana. This presentation will discuss what our approach is outline potential outcomes, and allow time to brainstorm and discuss how other surveys have made an impact by meeting the geological needs of their state.

Understanding the Geological Data Needs of Your State

Interactive discussion on what has worked and not worked for your state

Matt Johnson

Assistant Director for Information Services



INDIANA GEOLOGICAL & WATER SURVEY
INDIANA UNIVERSITY

Who we are and what we do

- **Non-regulatory, State funded research institute of Indiana University**
- **Collection and preservation of geologic specimens (fossils, rock core, minerals, etc)**
- **Mitigation of geologic hazards**
- **Unbiased information and data for wise stewardship of Indiana's energy, water, and mineral resources (and their byproducts)**

*Indiana statute IC 21-47-2
Chapter 2. State Geologist; Geological Survey*

Mission: The Indiana Geological and Water Survey conducts research, surveys the state, collects and preserves geologic specimens and data, and disseminates information to contribute to the mitigation of geologic hazards and the wise stewardship of the energy, mineral, and water resources of Indiana.

Vision: The Indiana Geological and Water Survey's vision is to be the principal source of geological information about and for Indiana to address local, regional, and global challenges.

Values: Accessibility, collaboration, integrity, scholarship, and diversity, equity, and inclusion



Large Indiana Issues

- **Water availability and impact of high withdrawal**

- Microchip plants, industry vs agriculture, groundwater influence on lake level, water transport to areas lacking water, etc.

- **CO2 capture and storage**

- Big up tic in information and large grants received, providing unbiased data when viewed as “in” with the big companies

- **Critical Mineral and Rare Earth Elements**

- Coal areas and possible resources.

- **Regional Scale Bedrock and Quaternary Mapping (100k) in progress**



Current Challenges

- **Need insight to future economic development and inclusion in State programs and planning**
- **Staff to maintain and fulfill mission**
- **Staff to make grant match requirements**
- **Partnering with other state agencies to provide data they need**
- **Embedded in a University but a state funded organization (no one claims us, and some don't even know we exist)**
 - **Inaccessible core and sample repository**




What we are currently doing

- Attending regional economic development council meetings
- Asking for clear direction from IGWS Advisory Board
- Looking for ways to make an impact in a certain county or region
- Becoming relevant...again




HAZARDS WATER ENERGY MINERALS

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Learn more
igws.indiana.edu

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Major Active Projects

HAZARDS

IGWS Earthquake Response Plan Update – Internally funded
Indiana Landslide Inventory Supplement to INDOT – IDHS funded (Publication and data to be released soon)
Inventory of Landslides in the Hoosier National Forest – Internally funded
Updates to Indiana Earthquake Map and Data – Internally funded
Automated Environmental Assessment Tool – Internally funded

Challenges – Insight to future development needs and inclusion in State programs and planning

WATER

2024 total solar eclipse on April 8th – Internally funded
Indiana Water Balance Network – Internally/Synoptic funded
Groundwater Database – Internally funded (interactive dashboard in progress)
Springs Water Quality – Internally funded (interactive dashboard available)
National Ground Water Monitoring Network FY22-24 - USGS funded
National Ground Water Monitoring Network FY23-25 - USGS funded
Water Quality on Wheels – IDEM Innovative 319 Grant
Potter Internship, Data Entry Position – Potter Foundation, DOE

Challenges – Additional staff and inclusion in State programs and planning

COLLECTIONS & OUTREACH

Legacy Research Access and Public Outreach – USGS funded
Learning Lab – Internally funded
2024 Data Preservation Conference Host - USGS/Internally funded
2024 Indiana Limestone Festival – Internally funded

Challenges - Physical Collections Facility to securely house and provide access to public resources – Unfunded

ENERGY

Statewide Subsurface Energy Project (SSEP) – DOE-funded (Carbon capture feasibility)
Midwest Regional Carbon Initiative (MRCI) – DOE-funded (Carbon Capture)
CarbonSAFE Corridor – DOE-funded (Carbon Capture)
CarbonSAFE Mitchell – DOE-funded (Carbon Capture)

Challenges – Additional staff as more subsurface feasibility grants are available

MINERALS

Carbon Ore, Rare Earth, and Critical Minerals (CORE-CM) in coal and coal byproducts – funded by DOE
Critical Minerals in Pennsylvanian black shales – USGS Earth MRI Program funded
Critical Minerals in Devonian shales – USGS Earth MRI Program funded

Challenges – Additional staff as more rare earth and critical minerals grants are available

GEOLOGICAL MAPPING

Jasper 100k Bedrock Quadrangle mapping – USGS Geologic Mapping Program (STATEMAP) funded
Bloomington 100k Surficial Quadrangle mapping – USGS Geologic Mapping Program (STATEMAP) funded
Bloomington 100k Bedrock Quadrangle mapping – USGS Geologic Mapping Program (STATEMAP) funded
Princeton 100k Bedrock Quadrangle mapping – USGS Geologic Mapping Program (STATEMAP) funded
Pennsylvanian stratigraphy – USGS Geologic Mapping Program (STATEMAP) funded
Inventory of Geoheritage Sites in Indiana – USGS Geologic Mapping Program (STATEMAP) funded
Northern Indiana Stratigraphy – funded by USGS Geologic Mapping Program (STATEMAP) funded

Challenges – Insight to future resource needs and inclusion in State programs and planning



How have you approached...

...gaining support from your state/funding agency?

...gaining insight to needs of your state?

...moving to contractor/soft money positions to get more accomplished?

...slowing down to focus on less so you can provide more?

...convincing stakeholders (citizens, legislators, academia, business) **of relevance?**



If you have documents or material that you have used in the past that you're willing share for inspiration and brainstorming, I would love to have copies.

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