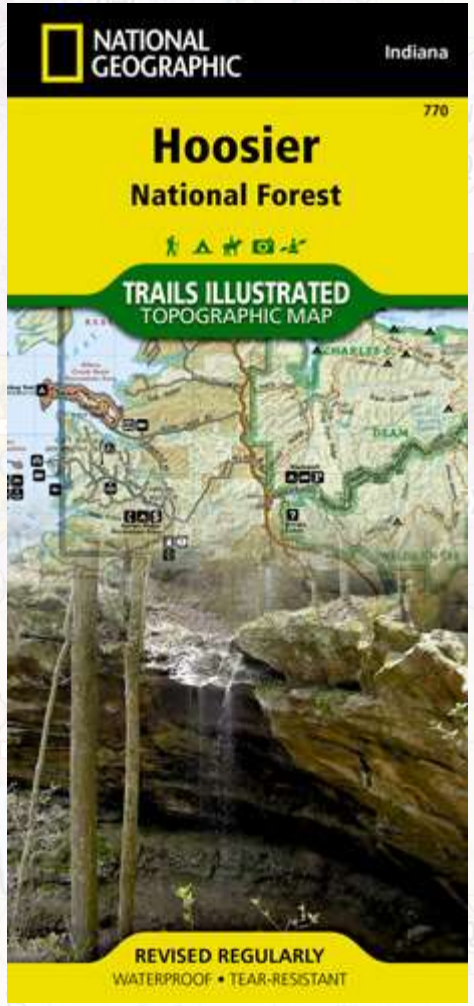
Basemaps for Geologic Maps

at the Indiana Geological and Water Survey

Matthew Johnson
Cartographic Specialist &
Digital Archivist

Not my first rodeo!



Creating your own basemap...

Pros...

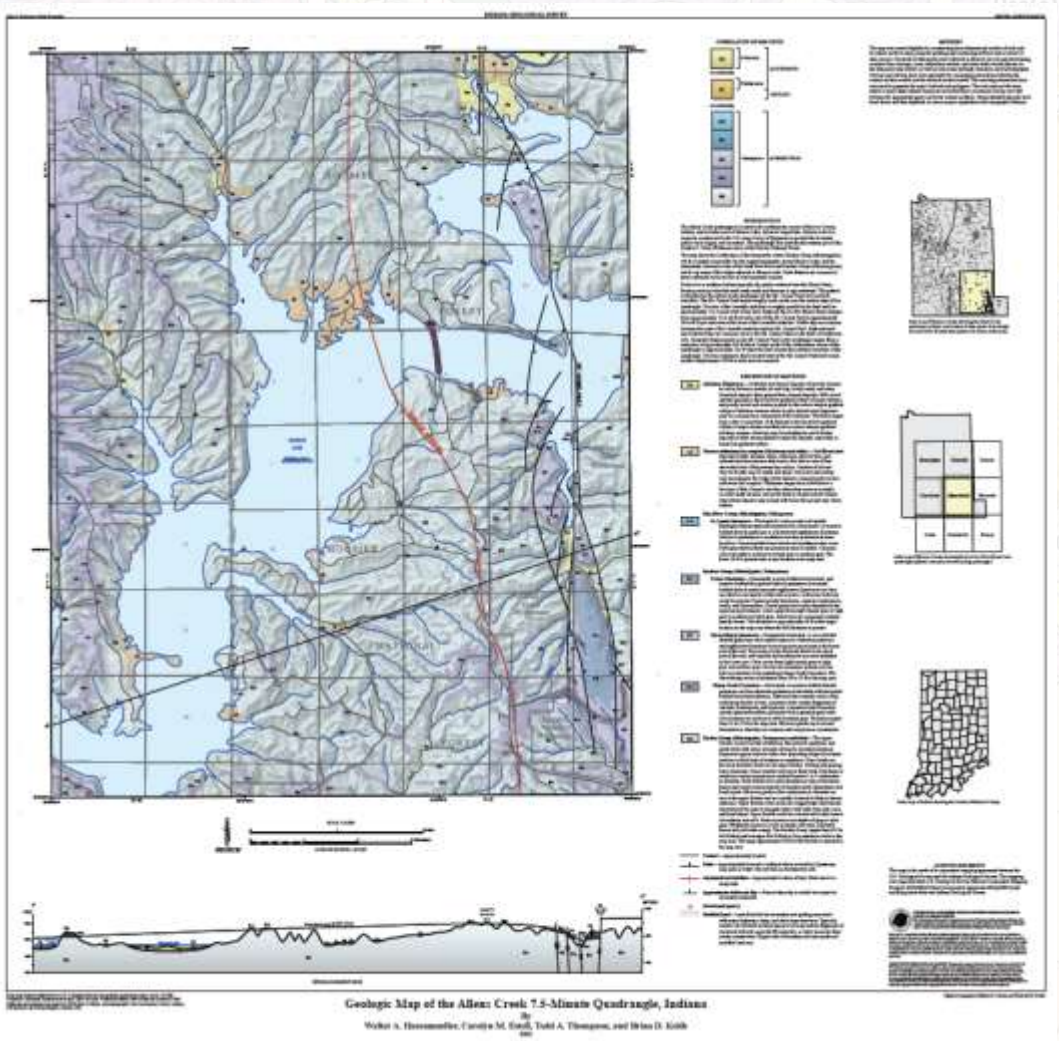
- Full control of symbology
- Label placement
- Opacity control
- Design for final use
- Updated map for field work
- Consistent look for maps
- Custom scales

Cons...

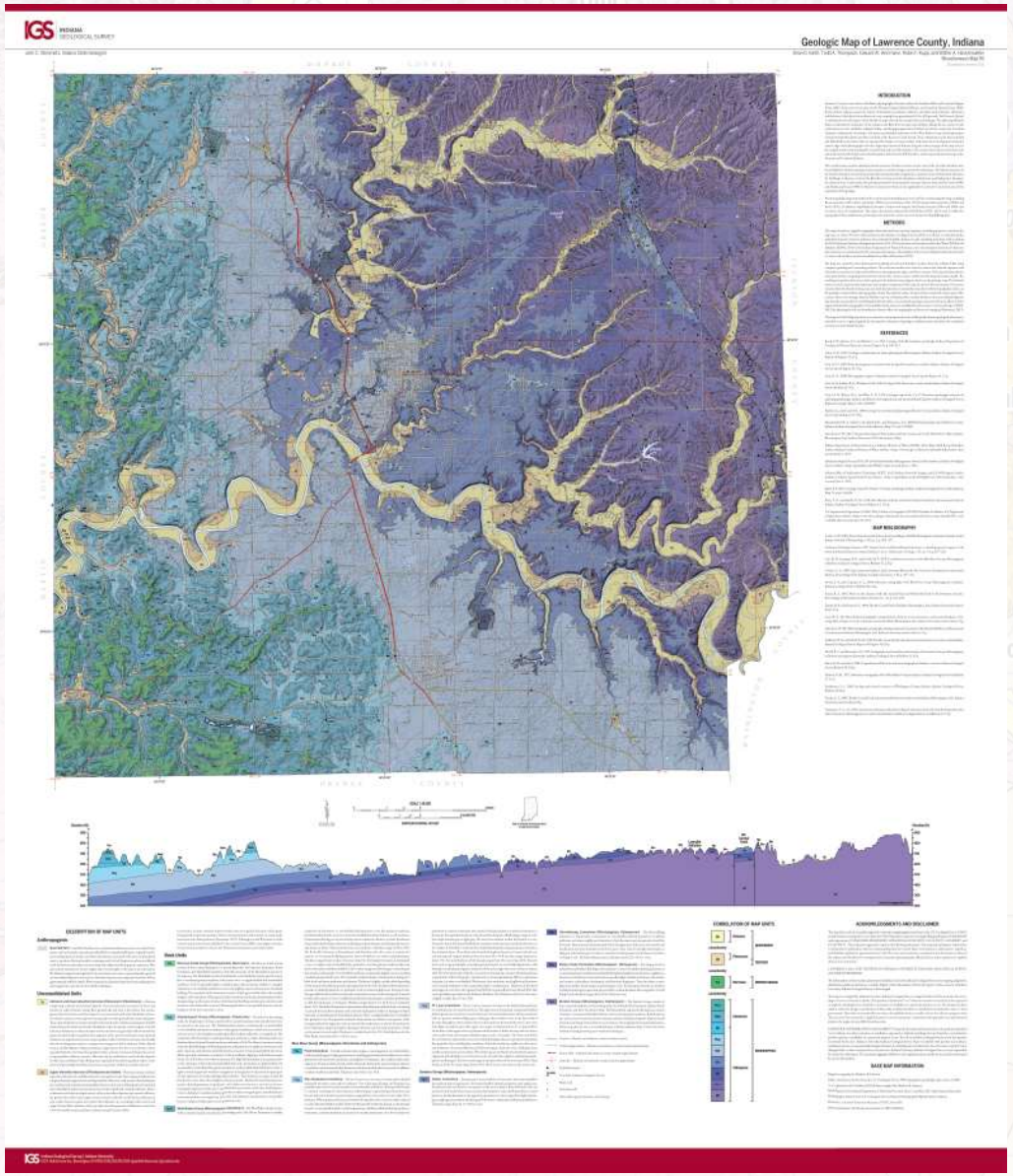
- Time constraints
- Data availability
- Software
- Limited staff
- Lack of training

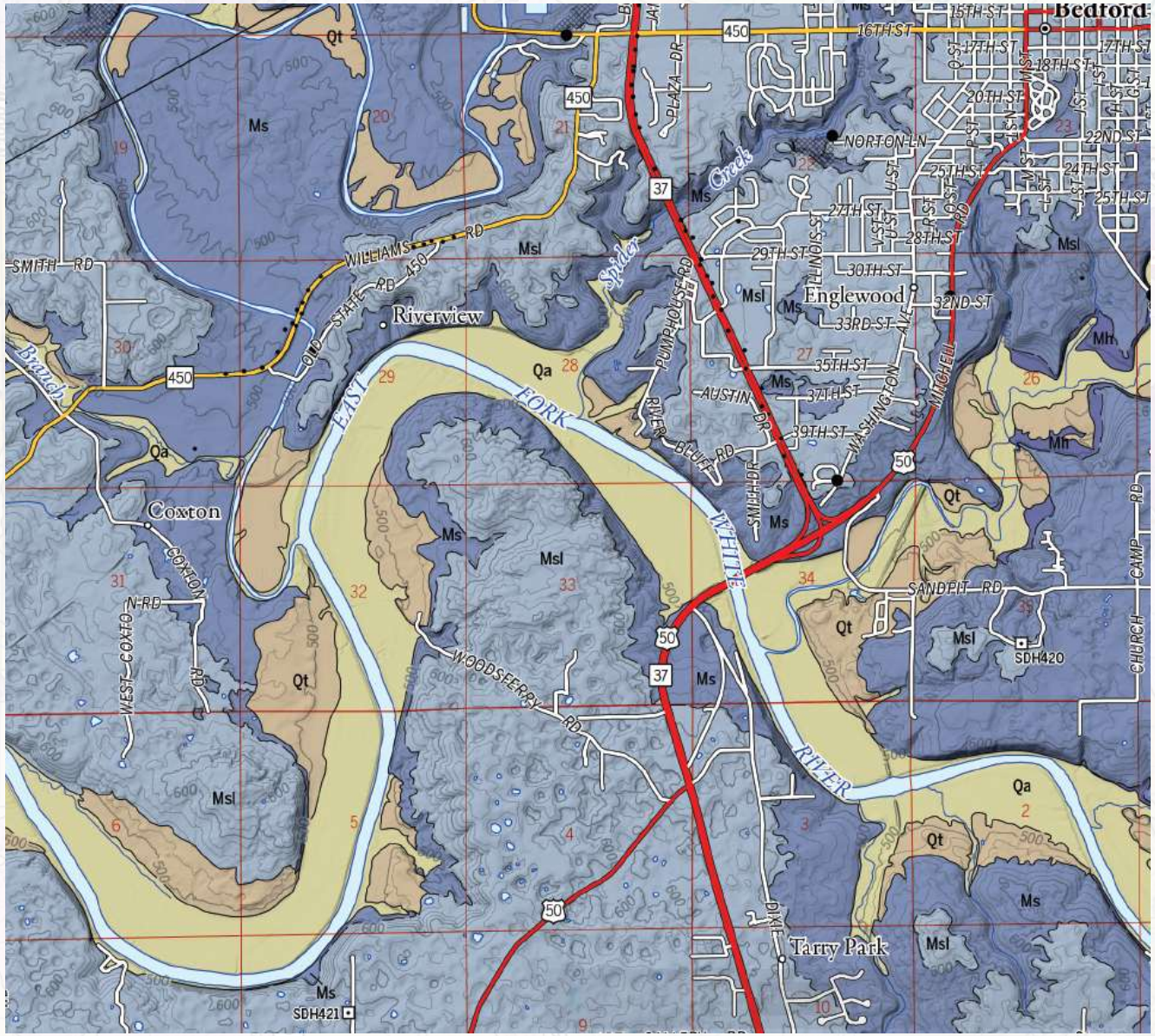
Data used for IGWS basemaps

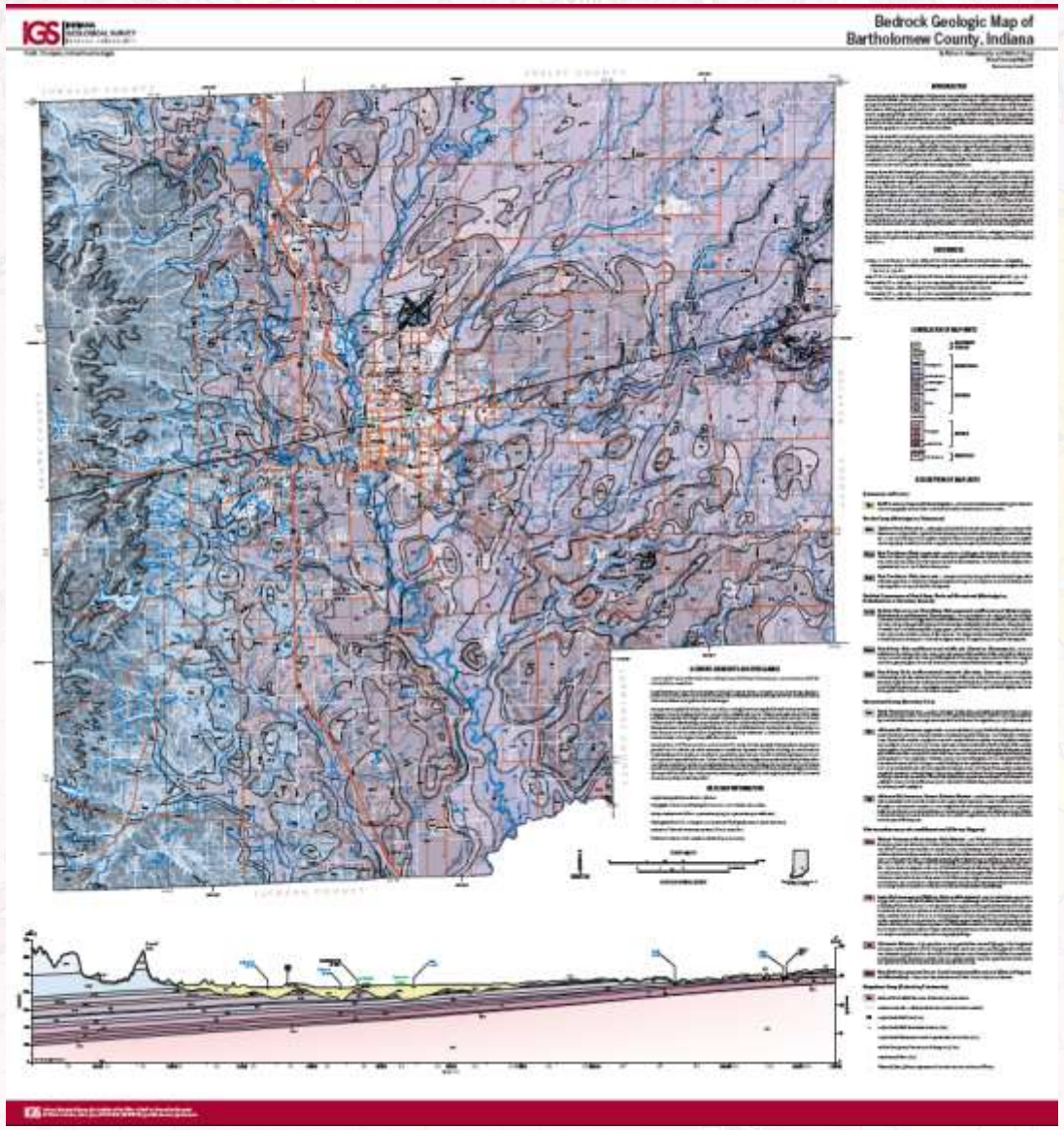
- 2016–2020 Indiana lidar data for shading and contours
- Transportation network from county centerlines and/or OpenStreetMap.org
- Boundary data from IndianaMap.org
- Hydrography from U.S. Geological Survey NHD (local resolution)
- Census and USGS Populated places for towns and cities

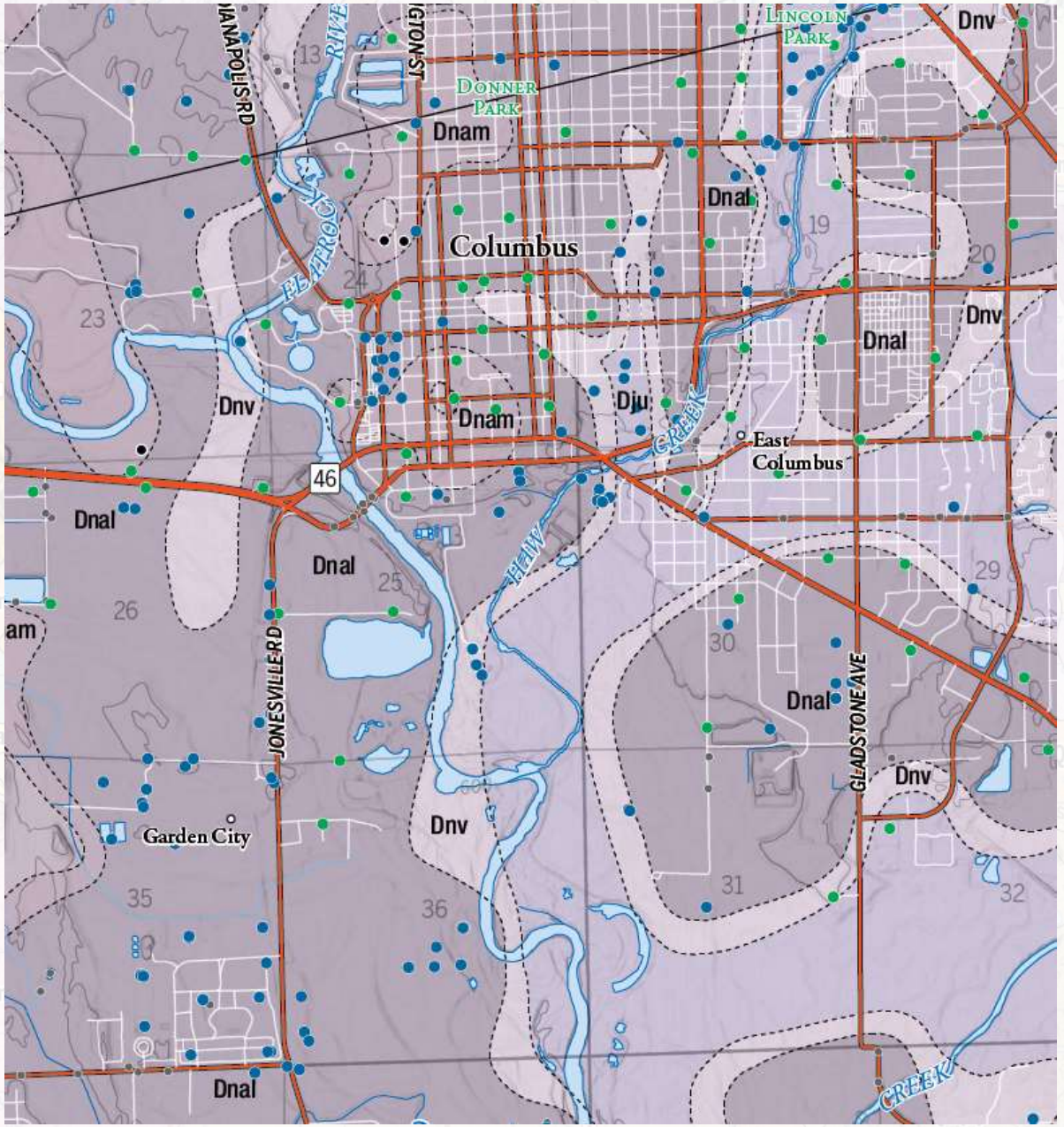

Geologic Map of the Allens Creek 7.5-Minute Quadrangle, Indiana

MT. CARMEL FAULT
LEESVILLE ANTICLINE
Qt
Mb
Mrc
Mh
Ms
Qa
HOOSIER

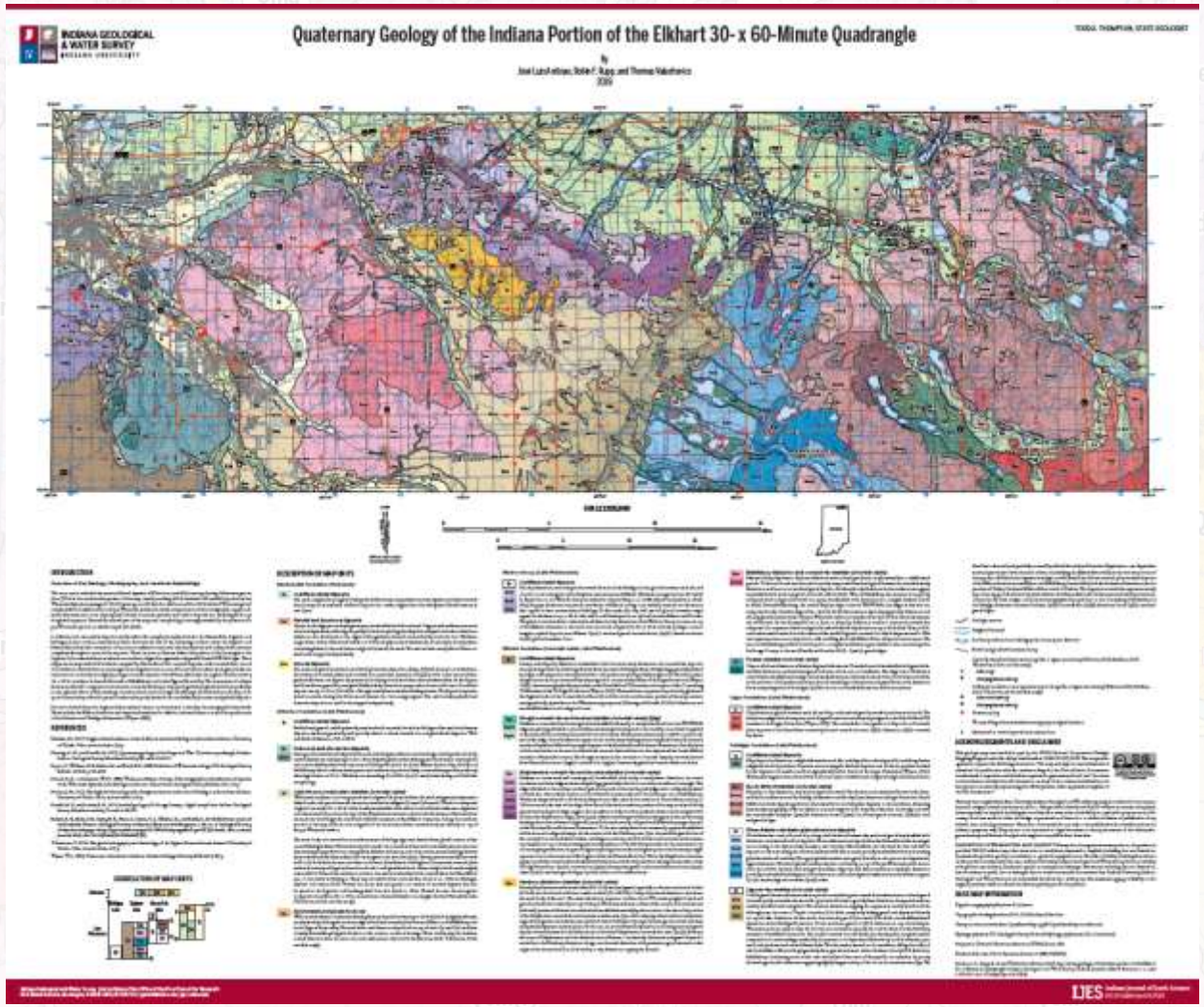

Geologic Map of Lawrence County, Indiana

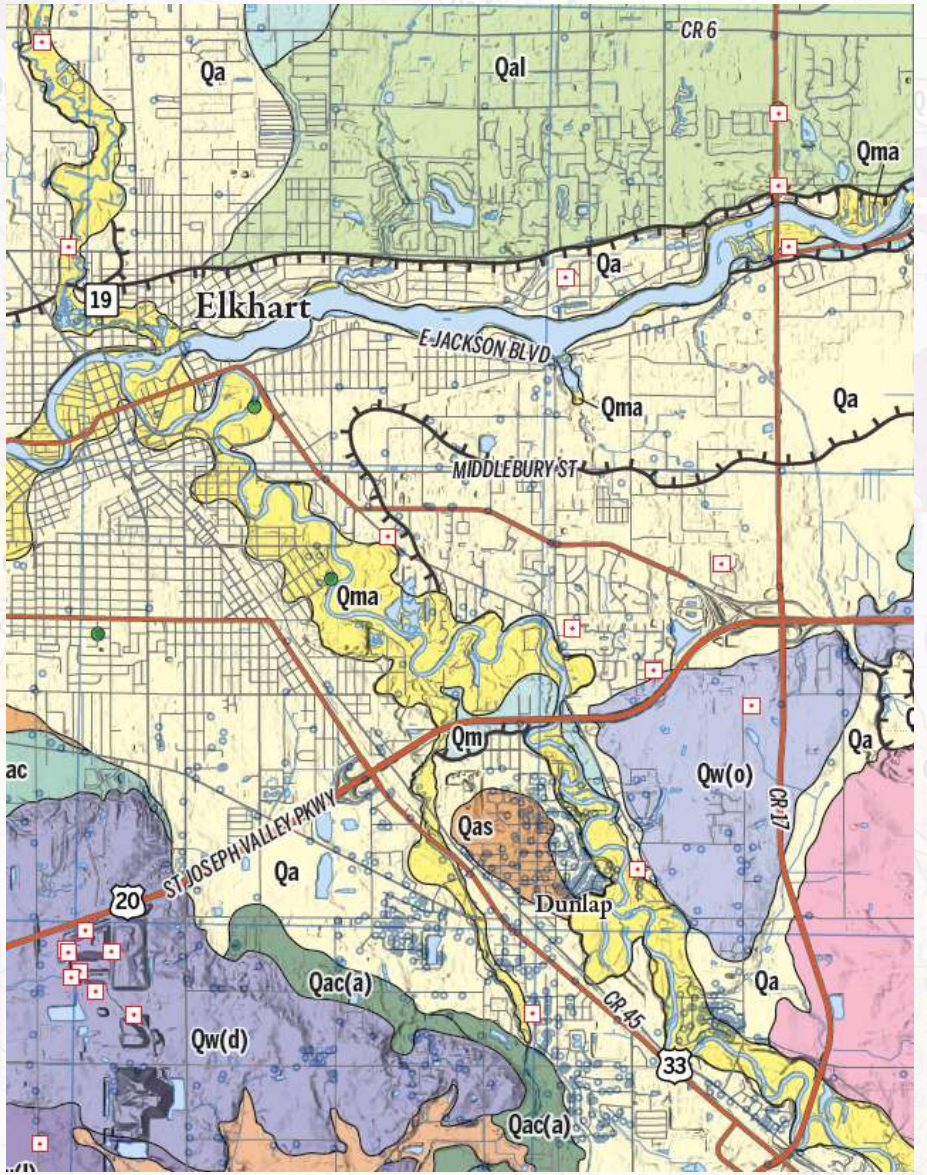

Bedford
Riverview
Englewood
Coxton
Tarry Park
EAST FORK WHITE RIVER
Spider Creek
Branch
WILLIAMS RD
SMITH RD
OLD STATE RD 450
PLAZA DR
NORTON LN
PUMPHOUSE RD
AUSTIN DR
RIVER BLUFF RD
WASHINGTON AVE
MITCHELL RD
SANDPIT RD
WOODSFERRY RD
COXTON RD
WEST COXTON RD
CHURCH CAMP RD
DIXIE
SDH420
SDH421
Qt
Qa
Ms
Msl
Mh
450
37
50

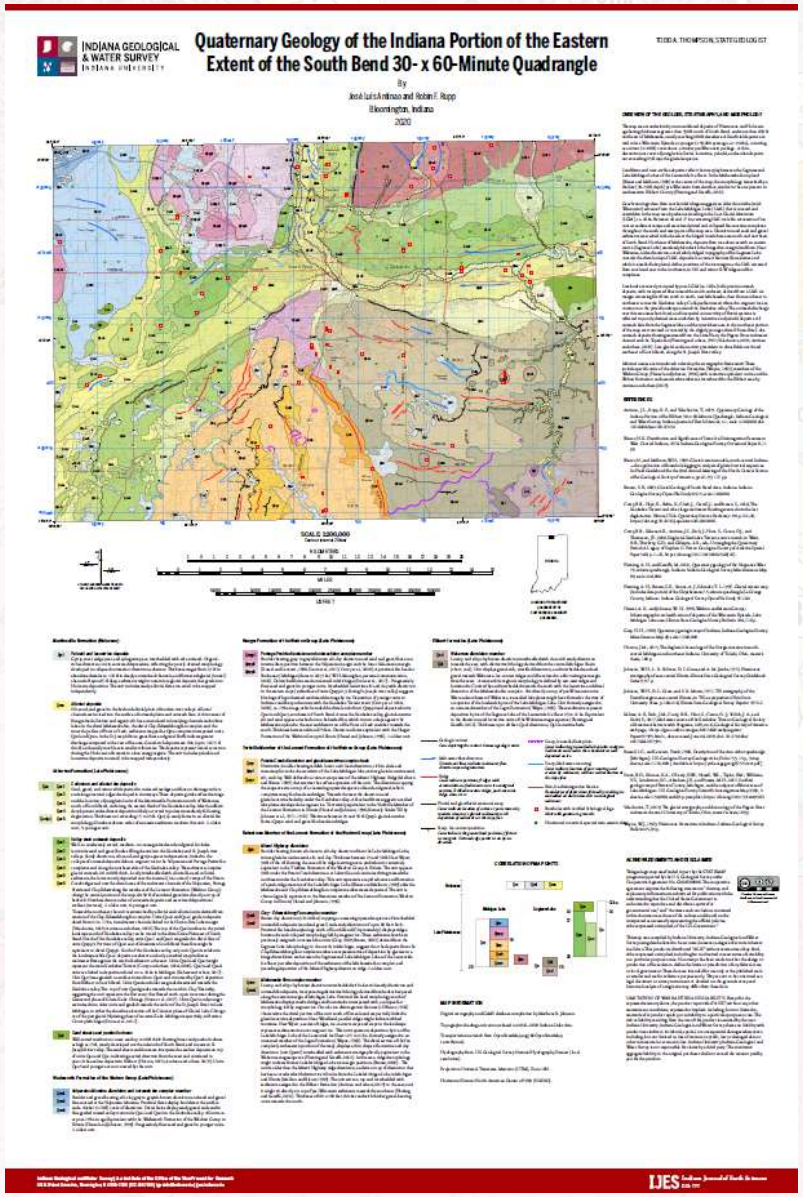

IGS
Bedrock Geologic Map of
Bartholomew County, Indiana

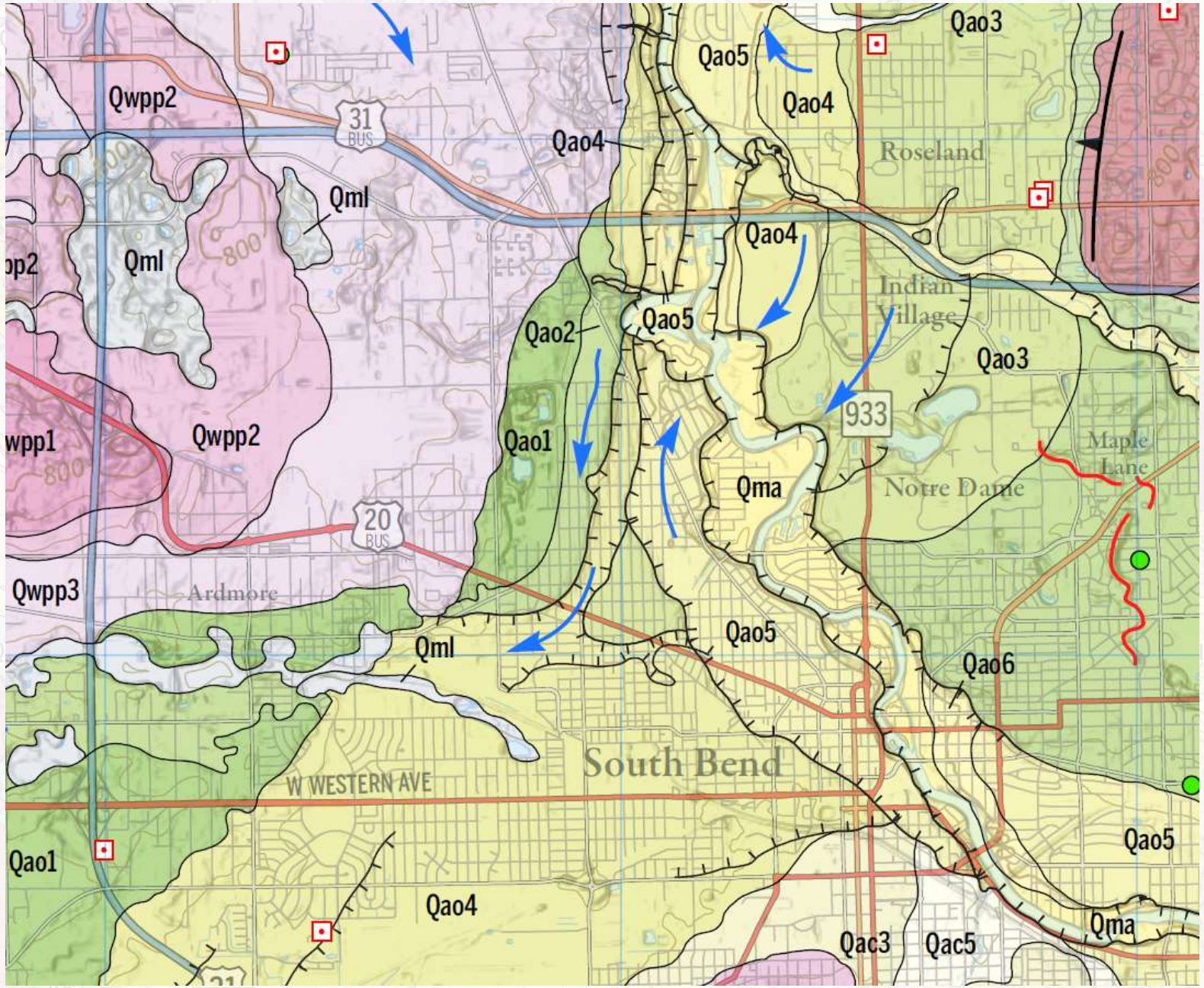

Columbus
East
Columbus
Garden City
Donner
Park
Lincoln
Park
Dnv
Dnal
Dnam
Dju
46
Jonesville Rd
Gladstone Ave
Creek

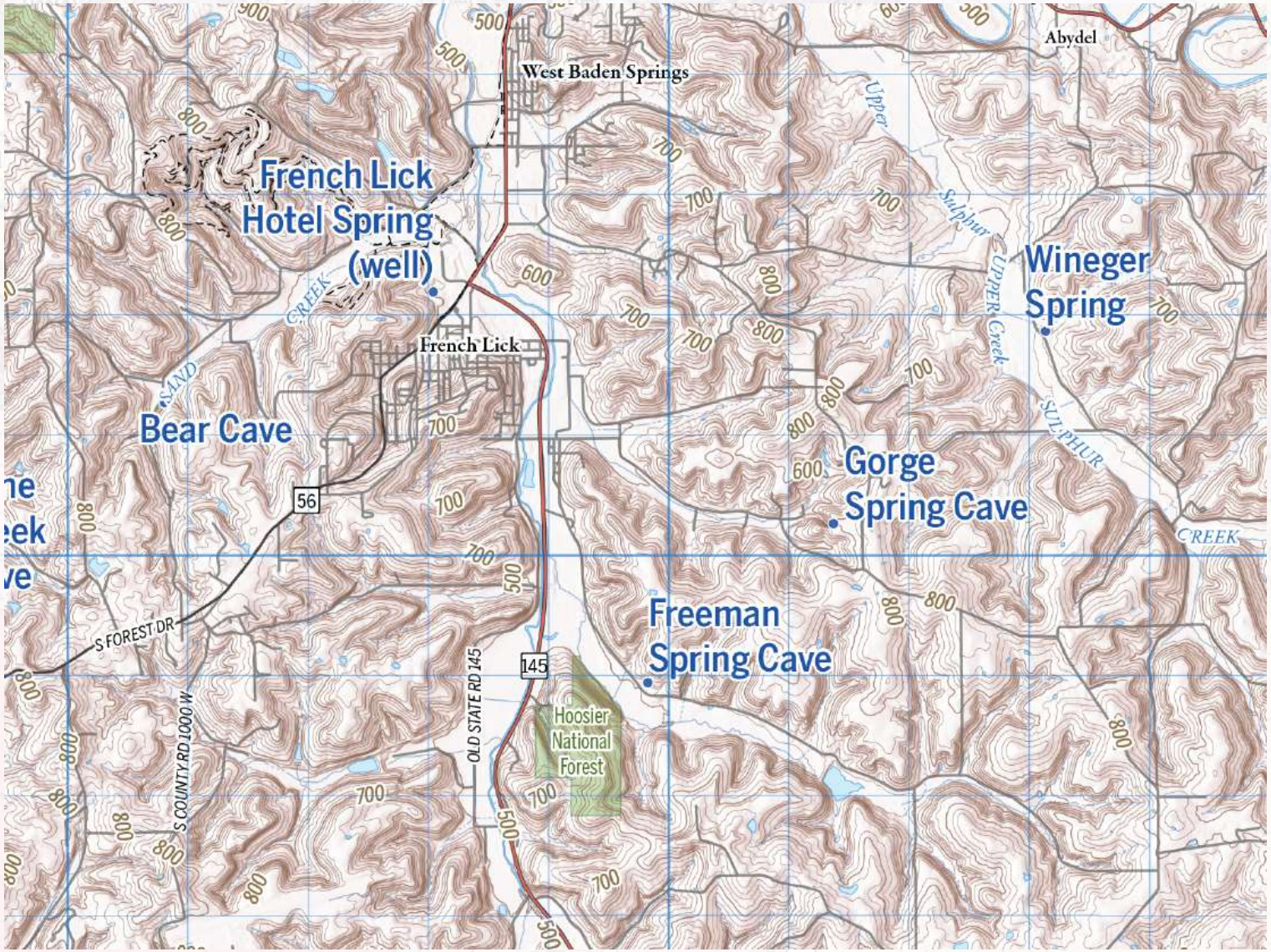
2020 Esri ICA / IMIA Recognition of Excellence in Cartography Award





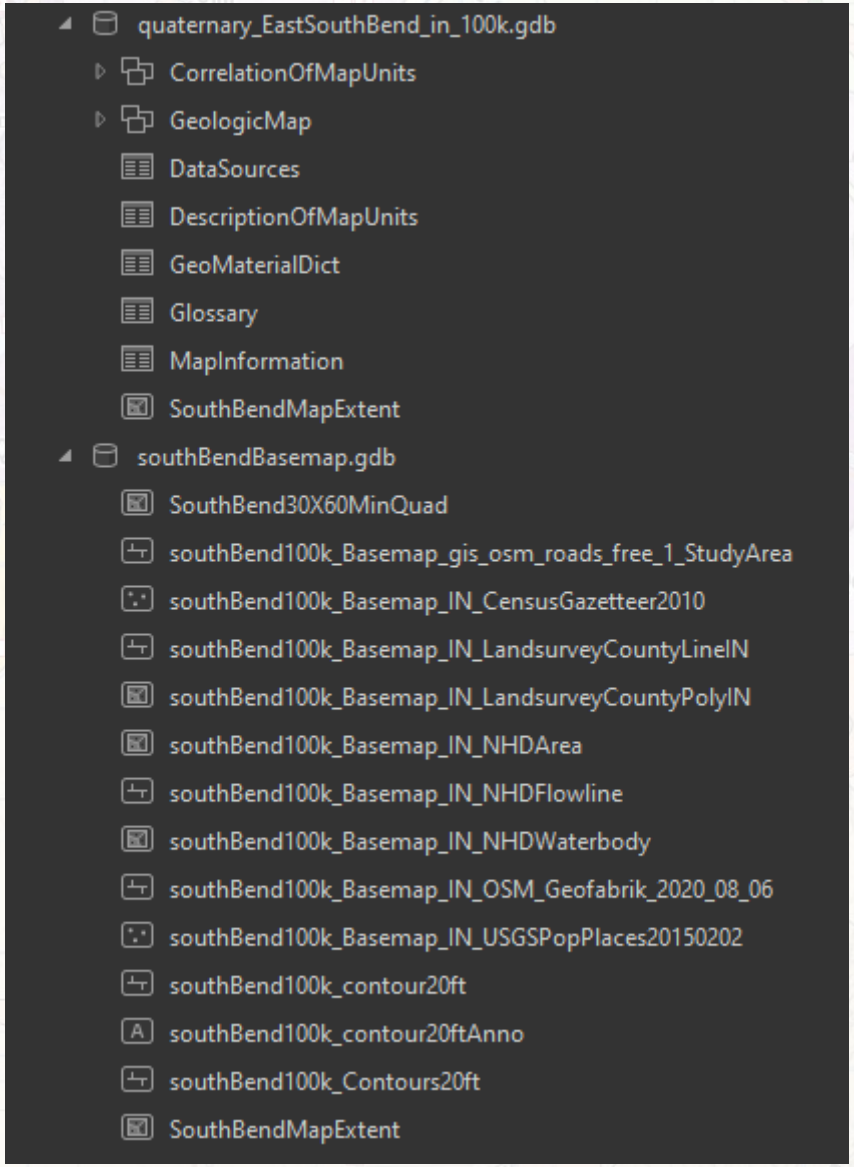

INDIANA GEOLOGICAL & WATER SURVEY
INDIANA UNIVERSITY
Quaternary Geology of the Indiana Portion of the Eastern Extent of the South Bend 30- x 60-Minute Quadrangle
By
José Luis Antinao and Robin F. Rupp
Bloomington, Indiana
2020
TODD A. THOMPSON, STATE GEOLOGIST
SCALE 1:200,000
IJES


Qwpp2
Qml
Qml
Qwpp2
Qwpp3
Qao1
Qao2
Qao3
Qao4
Qao4
Qao4
Qao5
Qao5
Qao5
Qao6
Qao1
Qao4
Qac3
Qac5
Qma
Qma
Qao5
Qao3
Qao4
Qao5
Qao3
Qao6
Qao5
Qma
31 BUS
20 BUS
933
800
Roseland
Indian Village
Maple Lane
Notre Dame
Ardmore
South Bend
W WESTERN AVE


French Lick
Hotel Spring
(well)
West Baden Springs
Abydel
Wineger
Spring
Bear Cave
French Lick
Gorge
Spring Cave
Freeman
Spring Cave
Hoosier
National
Forest
56
145
S FOREST DR
S COUNTY RD 1000 W
OLD STATE RD 145
Upper
Sulphur
UPPER Creek
SULPHUR
CREEK

Including the basemap with GeMS?

- User will be up and running quickly
- Include fonts and symbols
- Include a basemap.gbd
- Shading, DEMs, surfaces?
- Software issues?
- Basemap metadata?



Why I have gone to the darkside (ArcGIS Pro)!

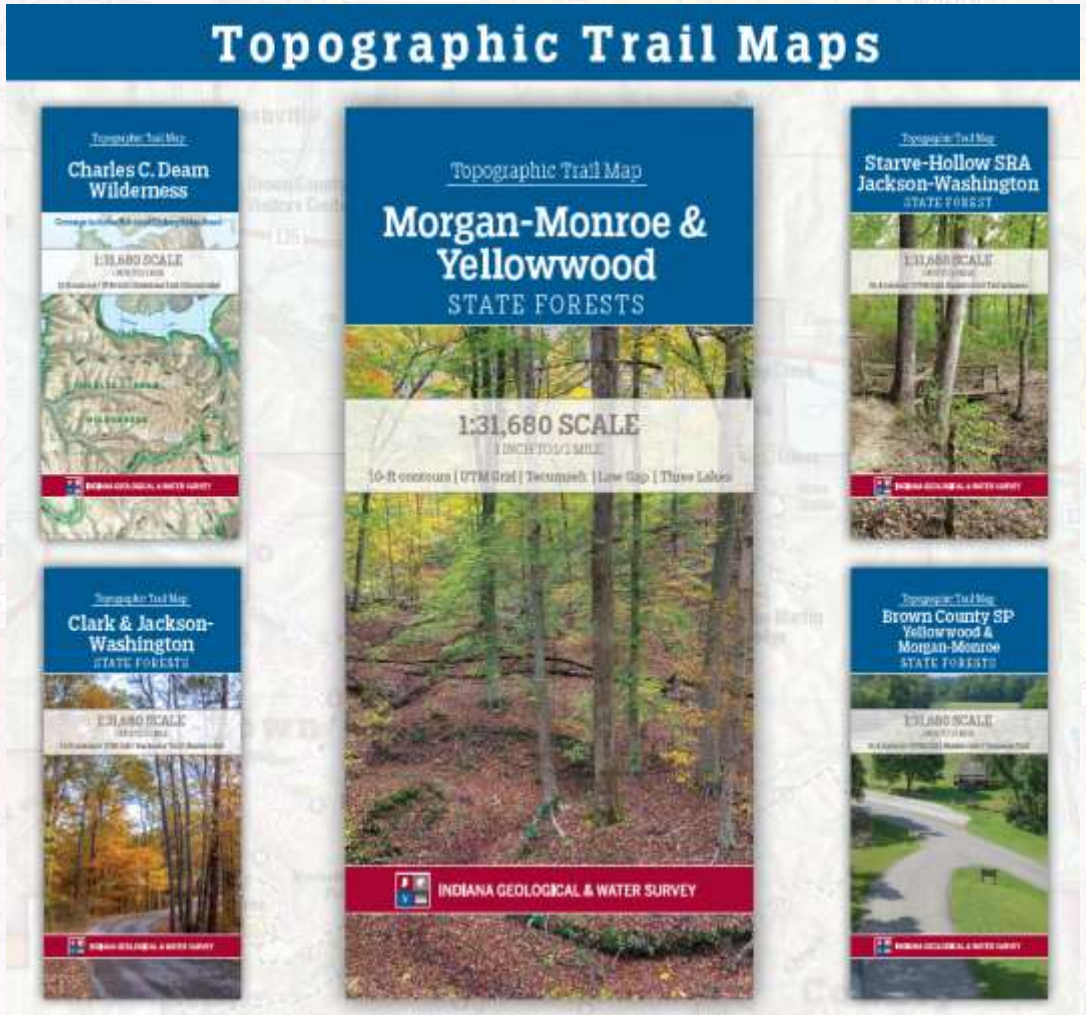
- Cartographer friendly
- Data stays spatially connected
- Label automation with option to covert to editable graphics
- Easy to collaborate internally (when people make the switch)
- Layouts almost fully connected to the database
- Near term release coming for blending raster's
- Fewer files so better organization of projects
- Overprinting recently implemented into symbology and labels

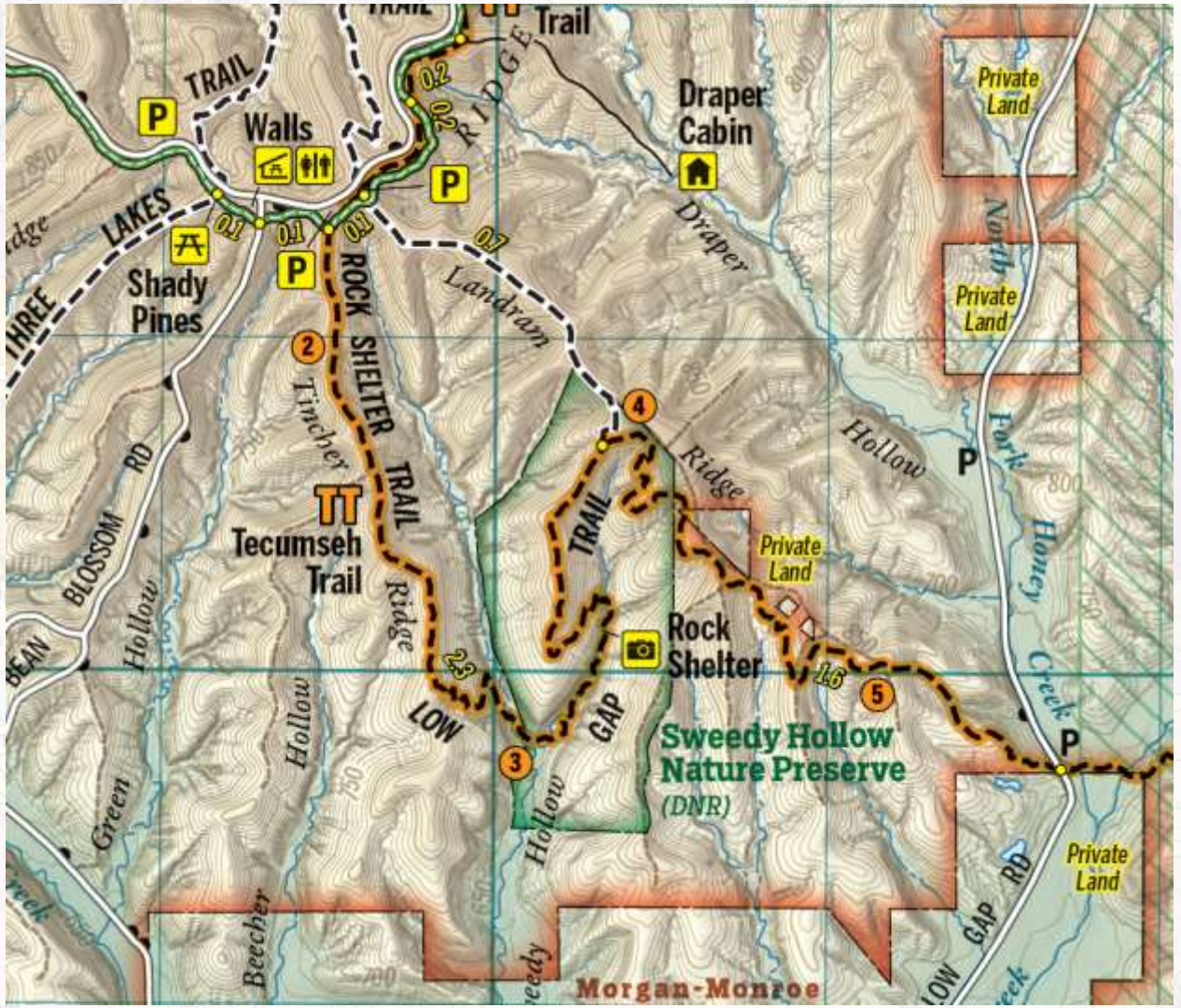
DEMO

ArcGIS Pro

- Layer structure in ArcGIS Pro
- Labeling
- Layout design and pulling in database attributes
- Map automation using map series (used in our Petroleum well maps)

Some future work...





Questions?

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