



Assessing Conditions at a Watershed Scale: Exploring the White River Report Card

Kelly Brown | White River Alliance

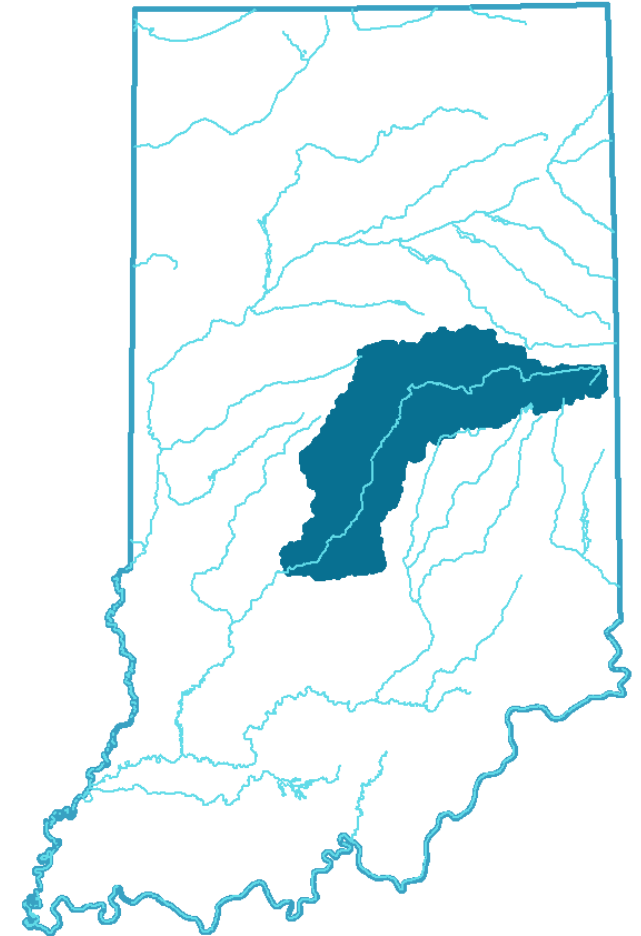
Who is the White River Alliance?



We are a regionally-focused non-profit organization led by a 15-member, multi-stakeholder Board of Directors.

Our mission is to improve and protect water resources throughout Central Indiana.

We are an alliance of diverse interests and organizations that work together to steward the river and its watershed through projects and educational initiatives.



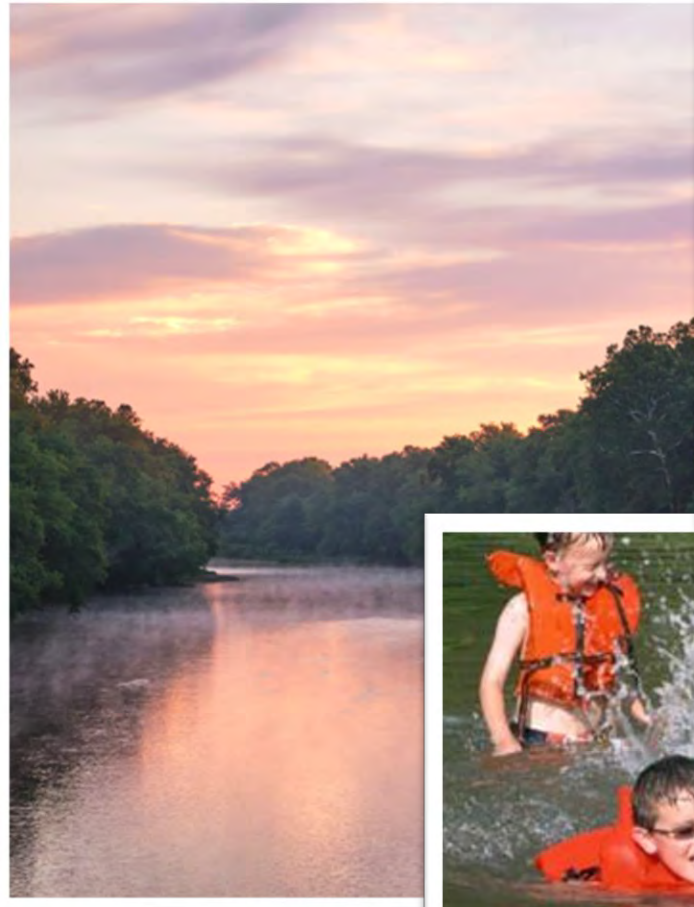
White River Watershed



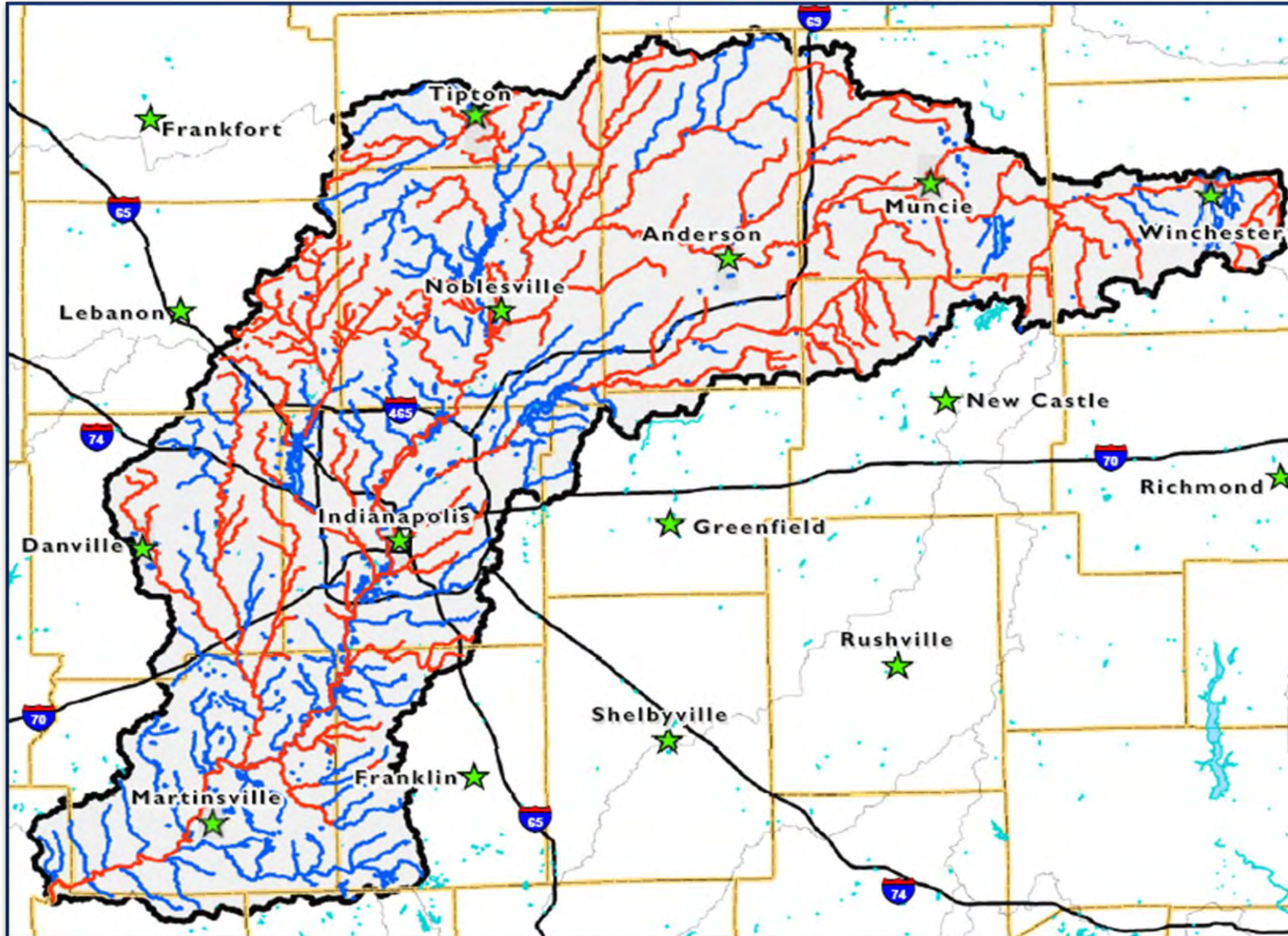
- 1.7 million acres
- All or parts of 16 counties
- 4 major reservoirs
- 15 major tributaries
- Home to 2M people
- Primary economic engines



Our Collective Use



Water Quality Challenges



- 47.1% of our state's waters are impaired
- 70.25% of the Upper White's waters are impaired



We Need to Look Holistically at the Health of the Watershed

Evaluating community, land, and water conditions



Eco Health Report Cards



- Uses data to catalyze and guide action

- Community and ecosystem improvement
- Direct resources and stimulate further research

- Process created by University of Maryland

- Over 15 years experience
- Implemented globally in ~50 areas



Global Model

● Existing Report Cards ● Report Cards under-development

Mississippi River
USA



Chesapeake Bay
USA



Long Island Sound
USA



Chilika Lake
India



Upolu
Samoa



Willamette River
Oregon USA



Gulf of Mexico
USA



Orinoco River
Colombia



Kura River Basin
Armenia, Georgia



Great Barrier Reef
Australia

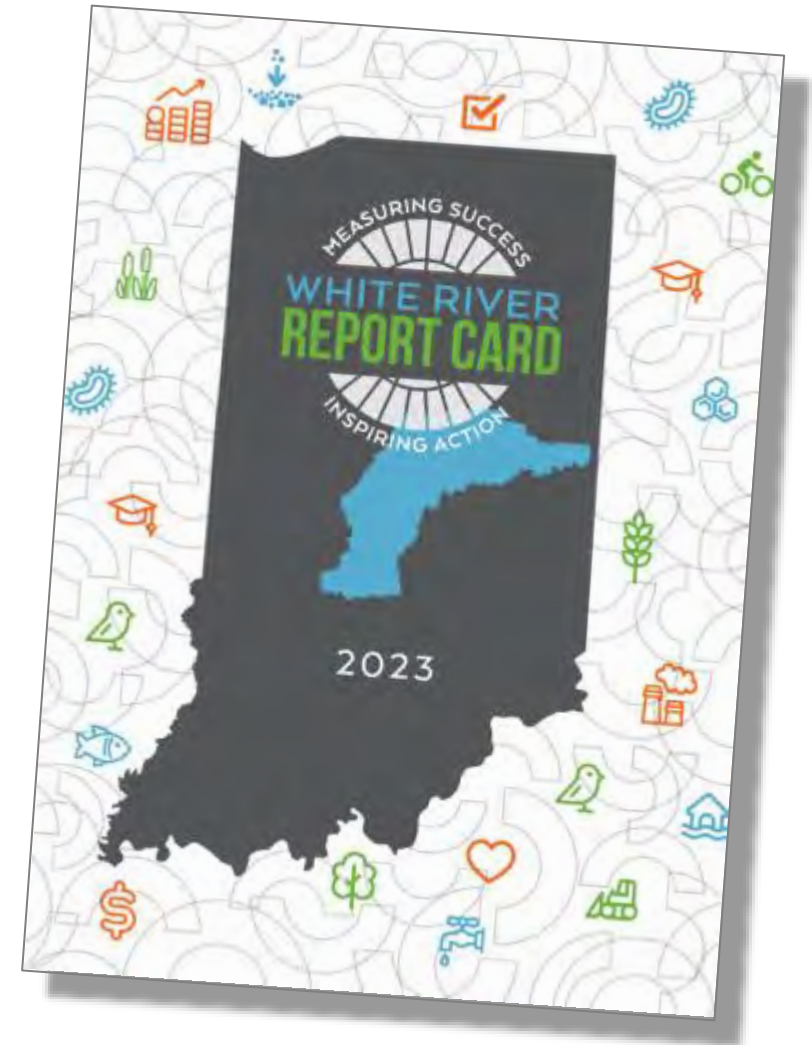


White River Report Card



...is a stakeholder-developed assessment and communication tool to:

- **Measure** community progress
- **Align** partners and activities
- **Inspire** change



1 WHAT IS THE BIG PICTURE?



IDENTIFYING BASIN VALUES AND THREATS

2 WHAT DO WE MEASURE?



CHOOSING INDICATORS

3 WHAT IS HEALTHY?



DEFINING THRESHOLDS FOR INDICATORS

4 HOW DOES IT ADD UP?



CALCULATING SCORES AND DETERMINING GRADES

5 WHAT IS THE STORY?



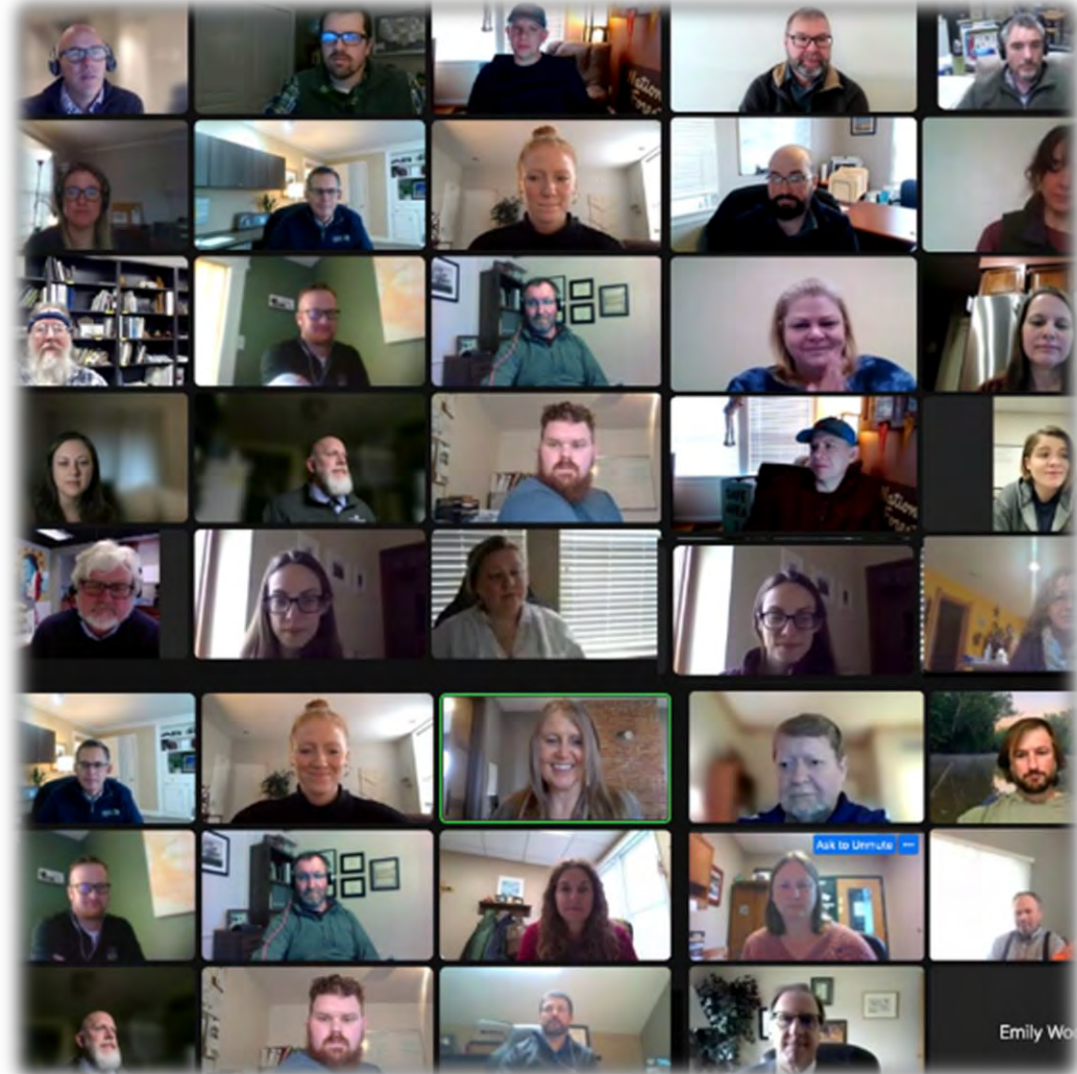
COMMUNICATING RESULTS

STAKEHOLDER CO-CREATED

Agriculture | Business | Community
Conservation | Industry | Political | Utility

Broad Engagement

- Over **530** on stakeholder list
- Over **170** experts actively engaged
- **21** workshops, virtual open houses and working group meetings
- **445** responses to input survey



Choose Indicators

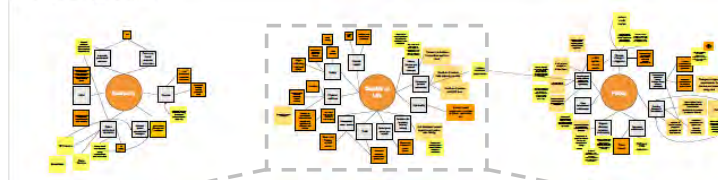
- Input was used to select categories and measure (aka) indicators
 - Reflect many values, concerns & uses
 - Organized by Community, Land, Water
- Refined indicators with Working Groups
 - Made up of dozens of experts
- Indicators had to be “SMART”
 - Sensitive, Measurable, Available, Relevant, Thresholds



Water Indicators Breakout Room



Community Indicators Breakout Room



Indicator refinement

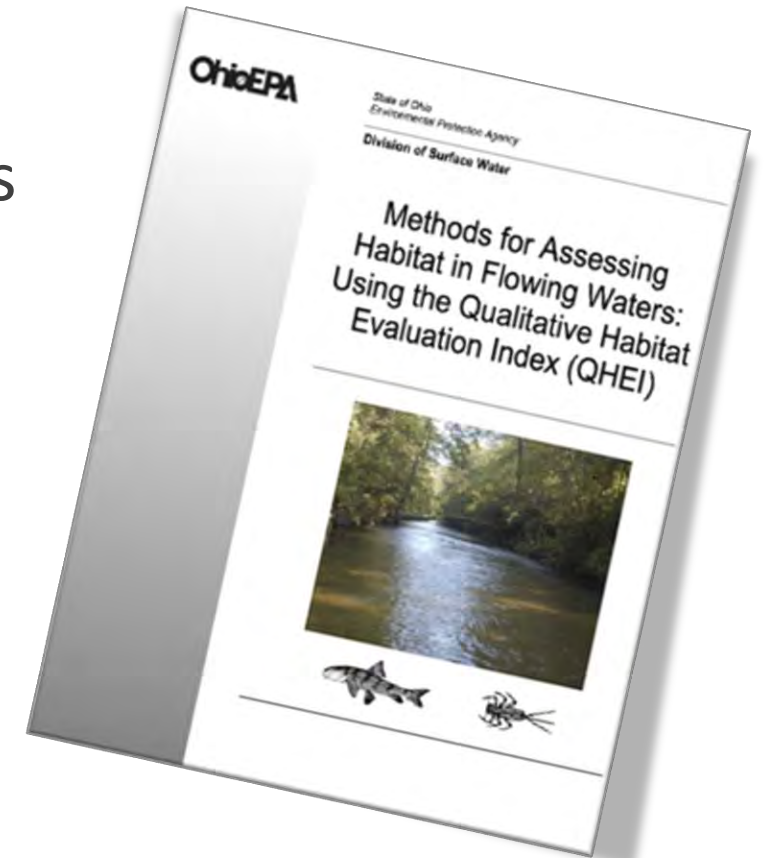


Determine Thresholds



Thresholds are specific goals, limits, or standards which are known to change indicator's condition

- Regulatory and/or management guidelines
- Historical baseline and/ or reference conditions
- Biological limits
- Socio-economic requirements
- Institutional goals
- Professional judgment



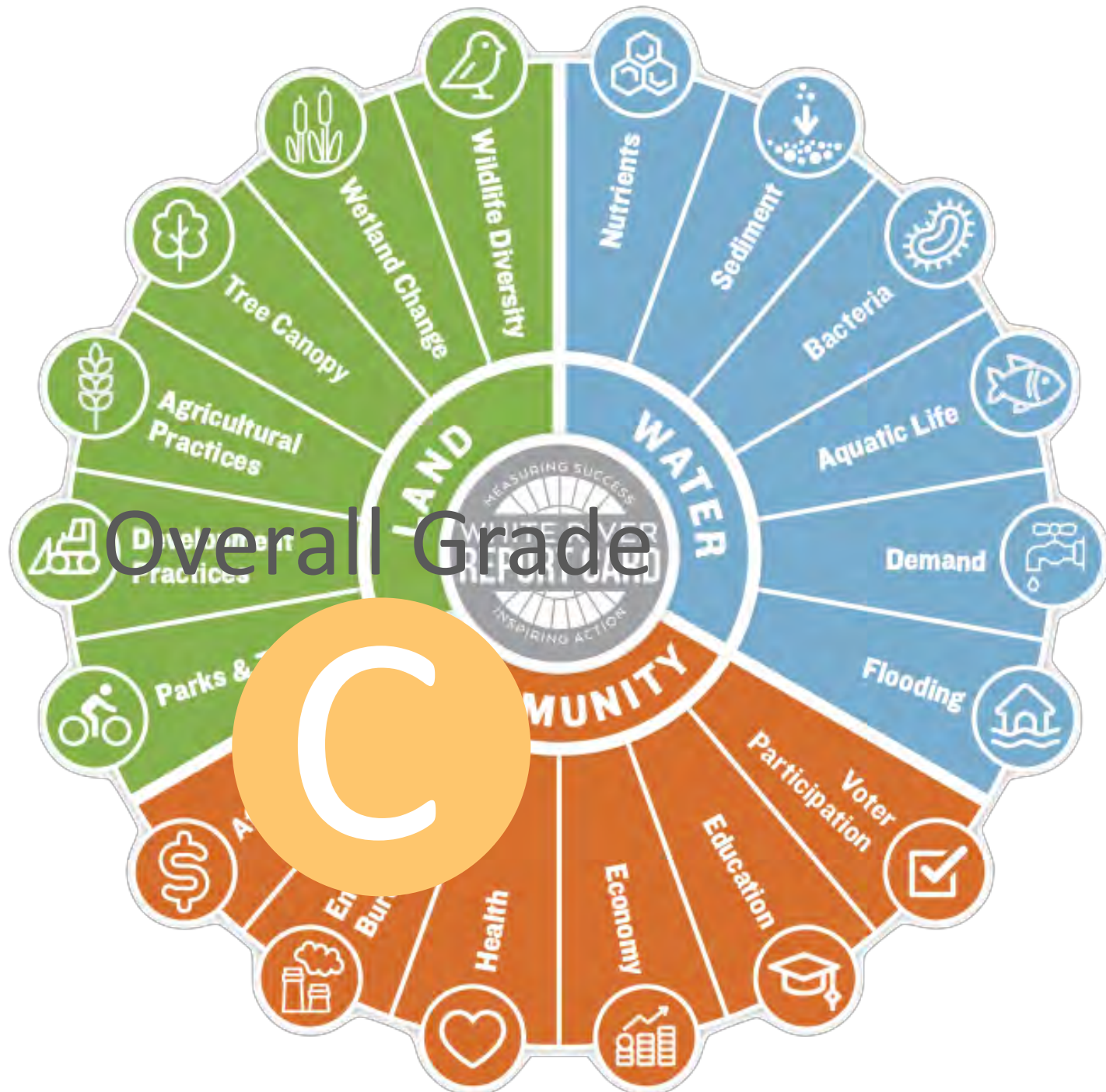
Calculating Grades



- Indicator scores are based on thresholds
- Indicator scores converted report card scale
 - 100-point scale with grades in 20-point increments
 - A through F
 - +/- for top/ bottom 5 points
 - Broader evenly distributed scale to be more sensitive to change

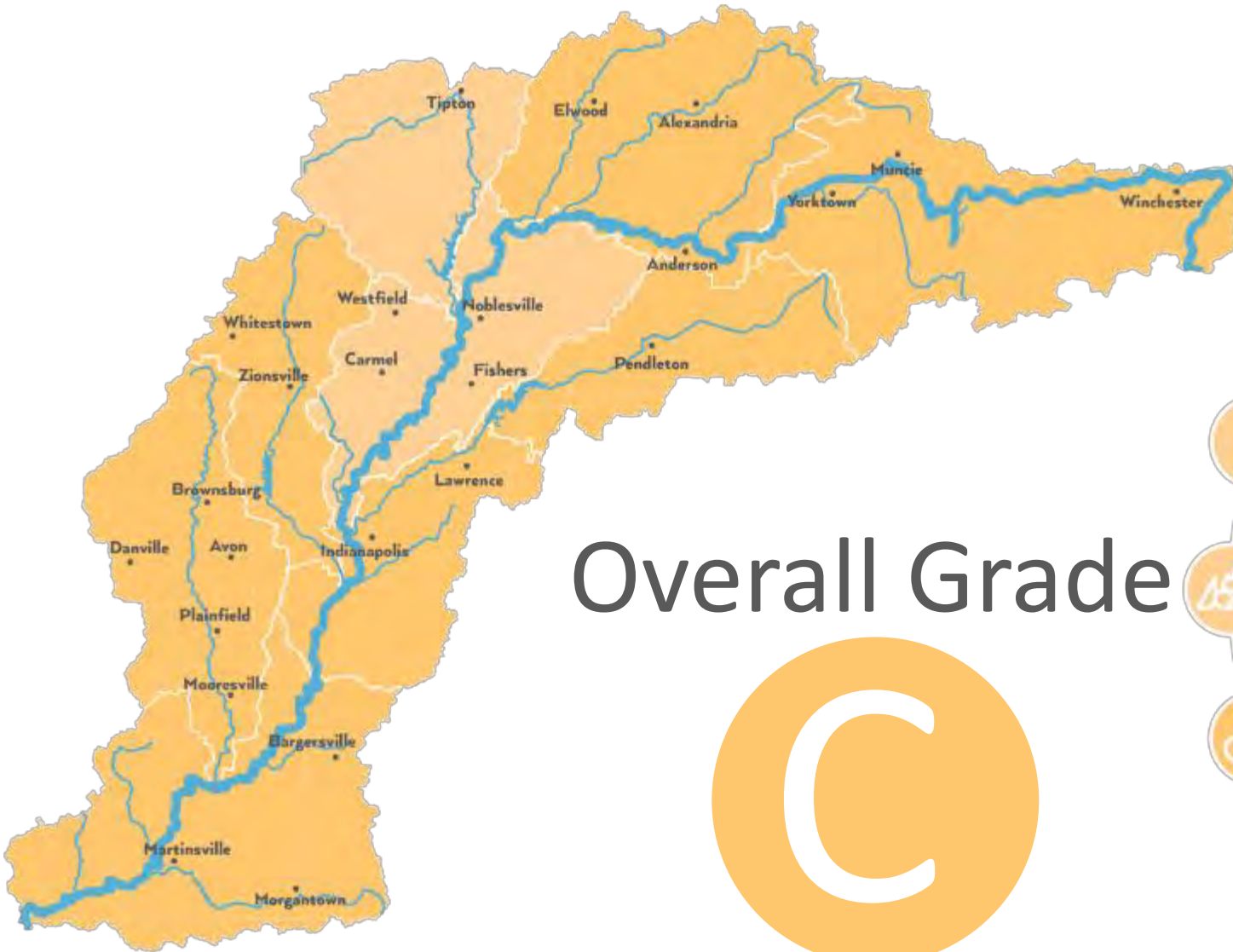
GRADING SCALE		
VERY GOOD	A+	100-95%
	A	95-85%
	A-	85-80%
GOOD	B+	80-75%
	B	75-65%
	B-	65-60%
MODERATE	C+	60-55%
	C	55-45%
	C-	45-40%
POOR	D+	40-35%
	D	35-25%
	D-	25-20%
VERY POOR	F	20-0%
	U	UNRATED



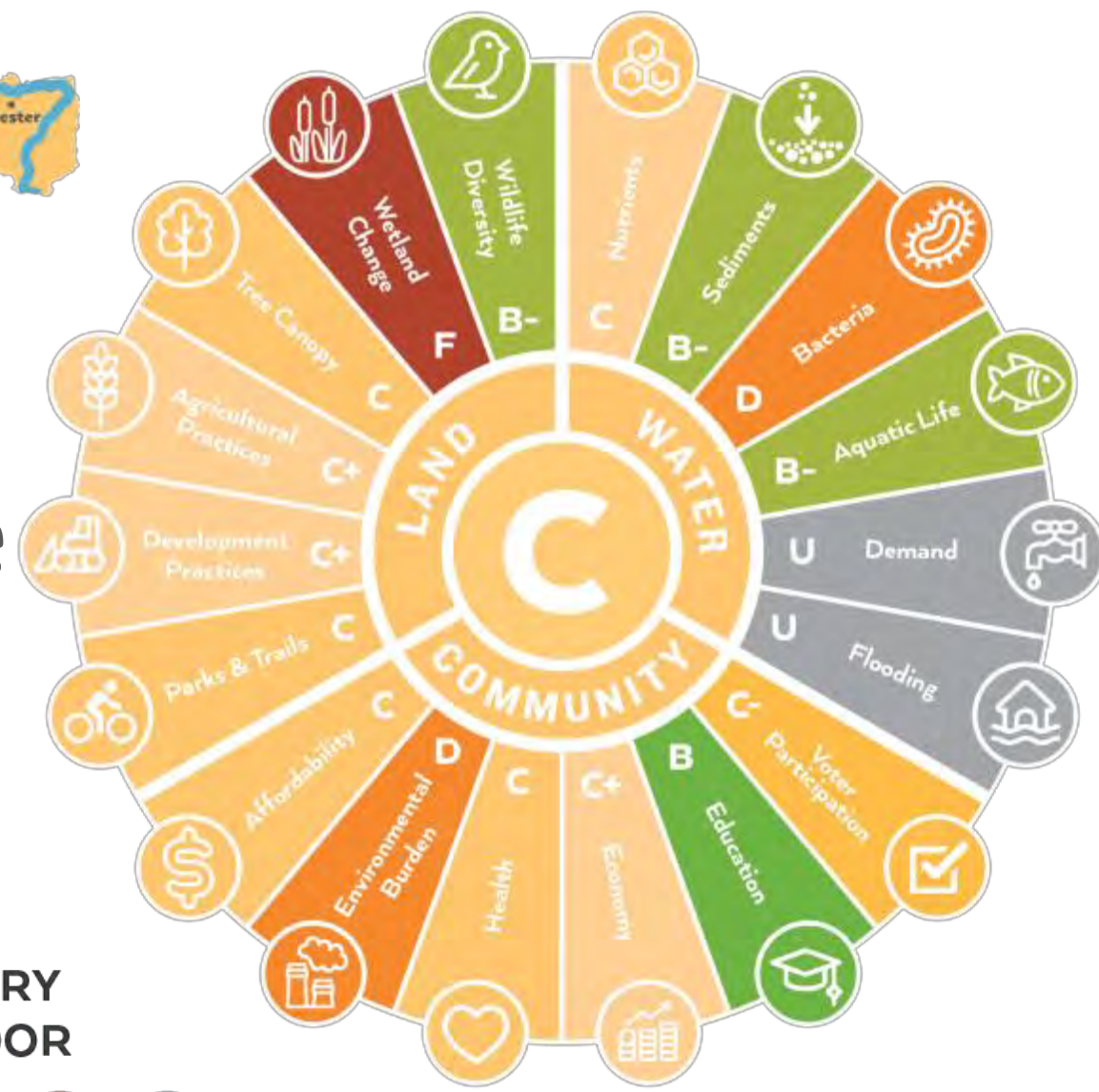
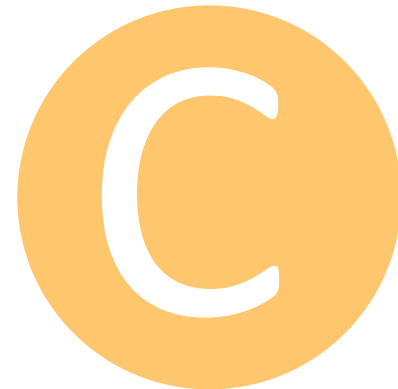


Overall Grade





Overall Grade



VERY GOOD

GOOD

MODERATE

POOR

VERY POOR



Data Challenges

- Only as good as the data
- Revealed data gaps
 - Demand & Flooding
- Raise awareness of data needs





Regional Grades

How do the scores add up?



Report Card Regions



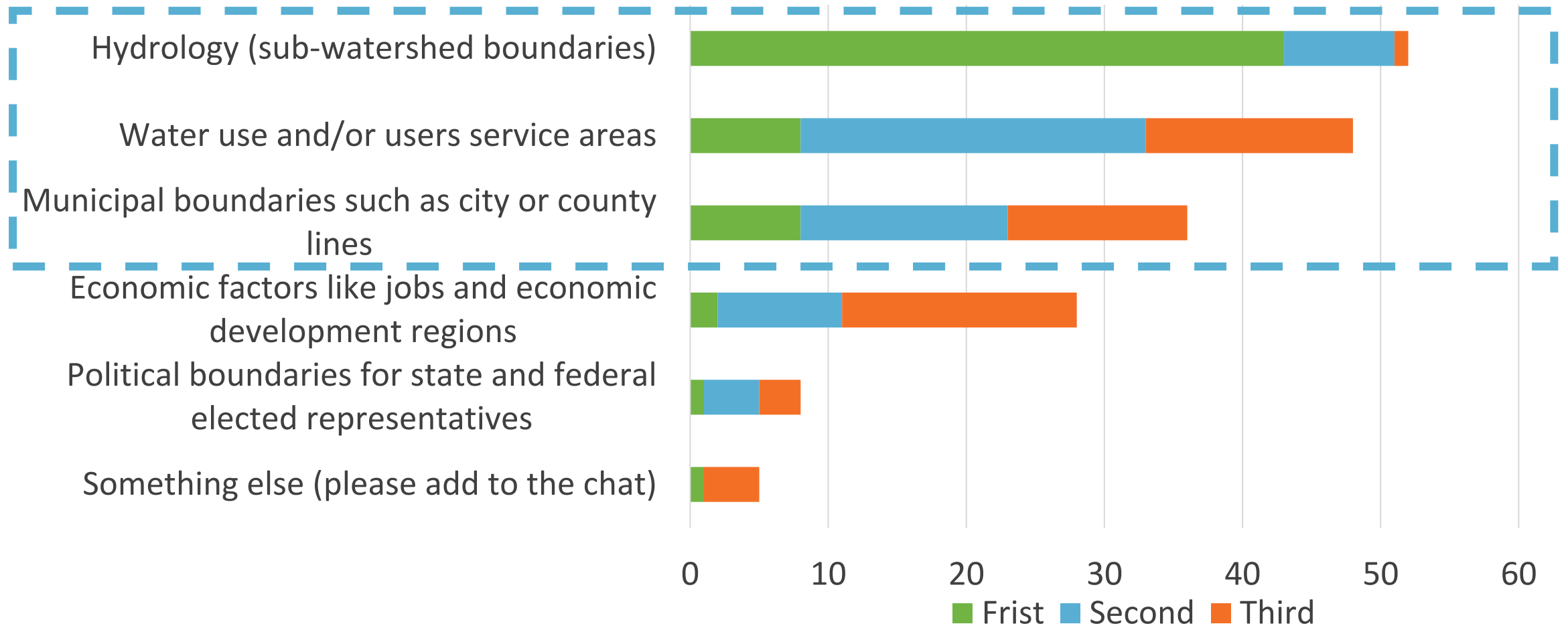
1. Headwaters & Prairie Reservoir
2. Killbuck, Pipe, & Duck Creek
3. Upper Fall Creek & Geist Reservoir
4. Stony Creek & Crooked Creek
5. Cicero Creek & Morse Reservoir
6. Lower Fall Creek, Pleasant Run
7. Eagle Creek
8. White Lick Creek
9. Clear, Lambs, Indian, & Butler Creek



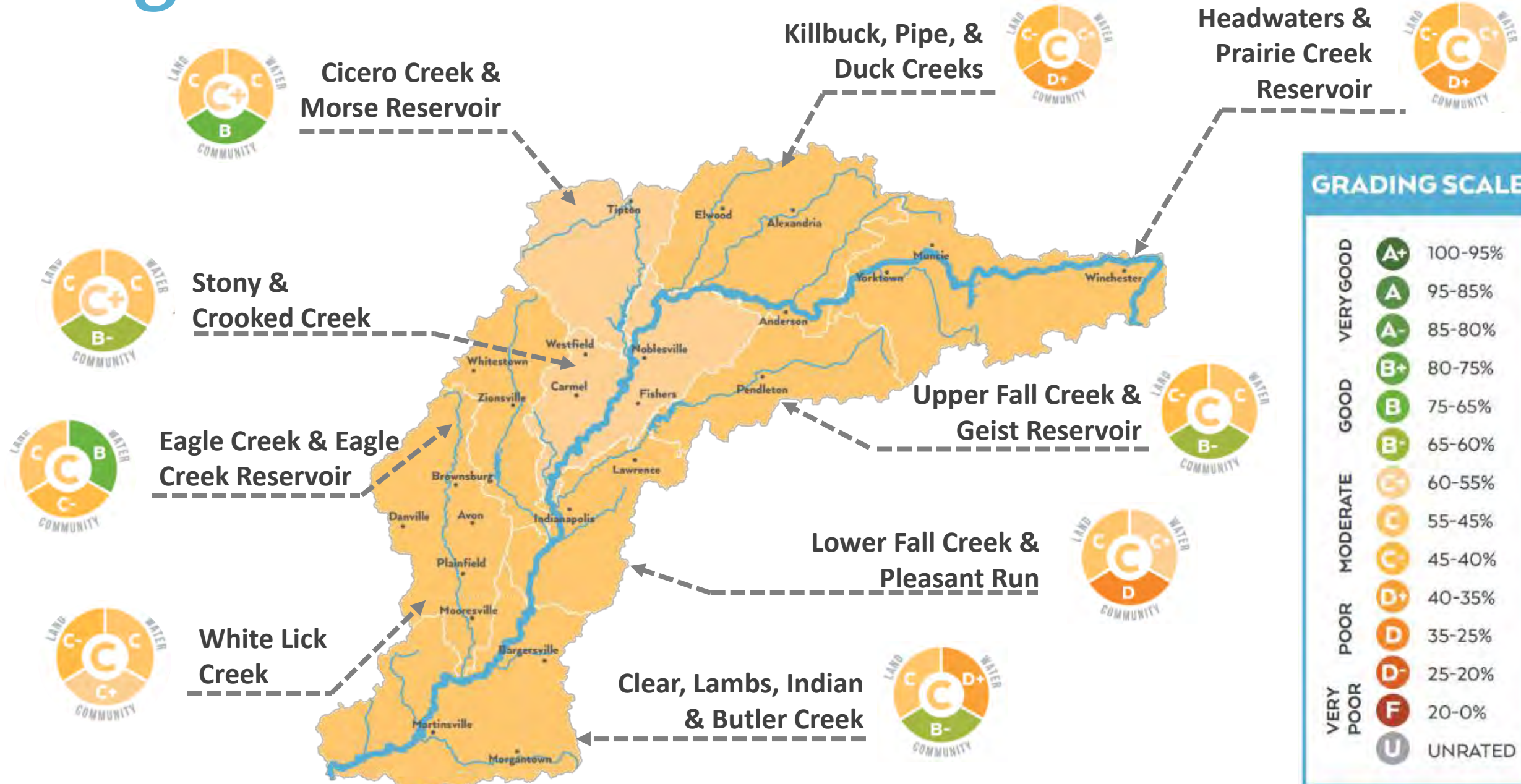
Region Development



When considering the geography of the Report Card regions, please select the most important factor to consider.



Regional Grades



GRADING SCALE		
VERY GOOD	A+	100-95%
	A	95-85%
	A-	85-80%
GOOD	B+	80-75%
	B	75-65%
	B-	65-60%
MODERATE	C+	60-55%
	C	55-45%
	C-	45-40%
POOR	D+	40-35%
	D	35-25%
	D-	25-20%
VERY POOR	F	20-0%
	U	UNRATED

Key Watershed Findings

Highest Scoring

 **Indicators**

 **Education: B**

 **Aquatic Life: B-**

Wildlife Diversity: B-

Lowest Scoring Indicators

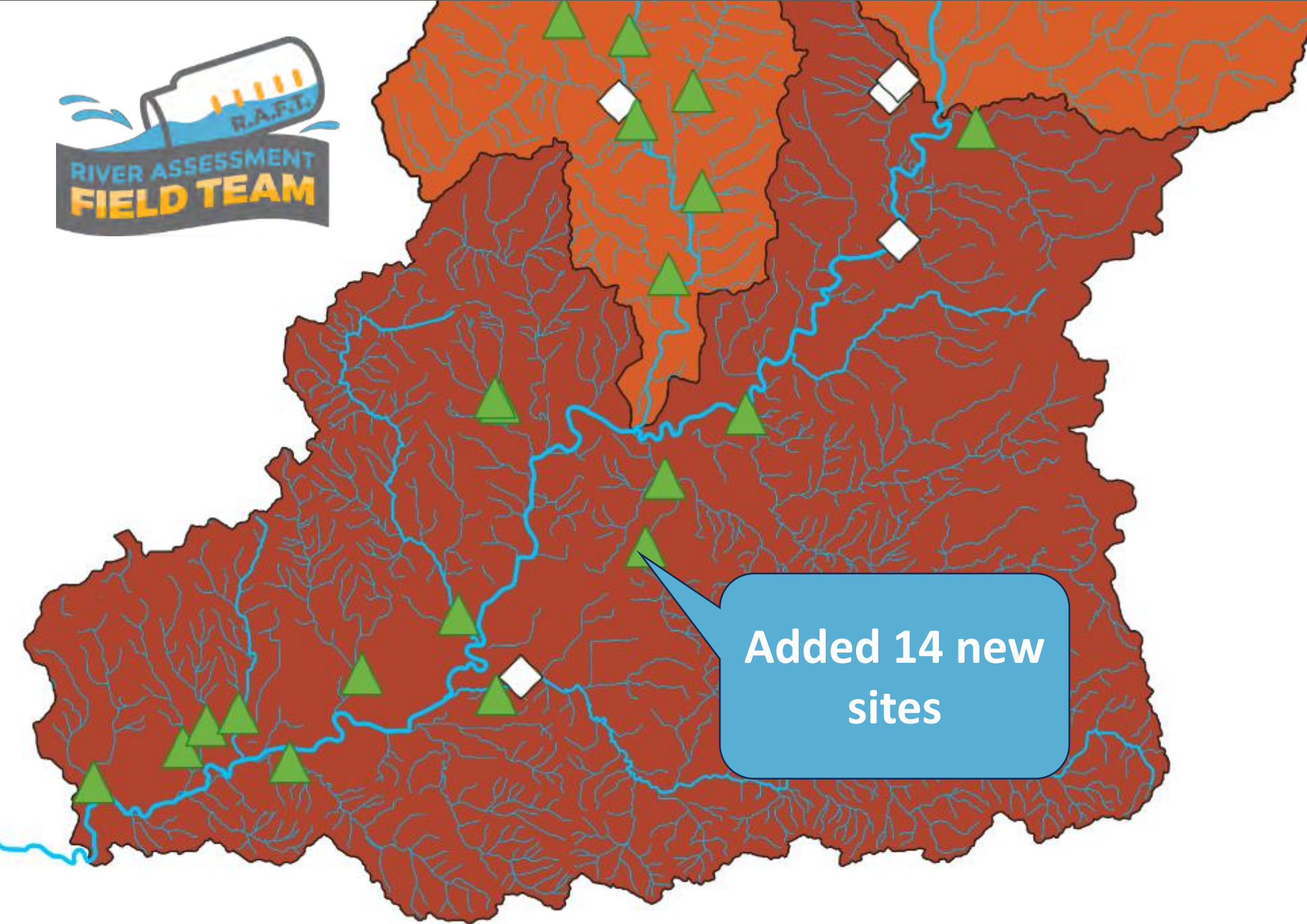
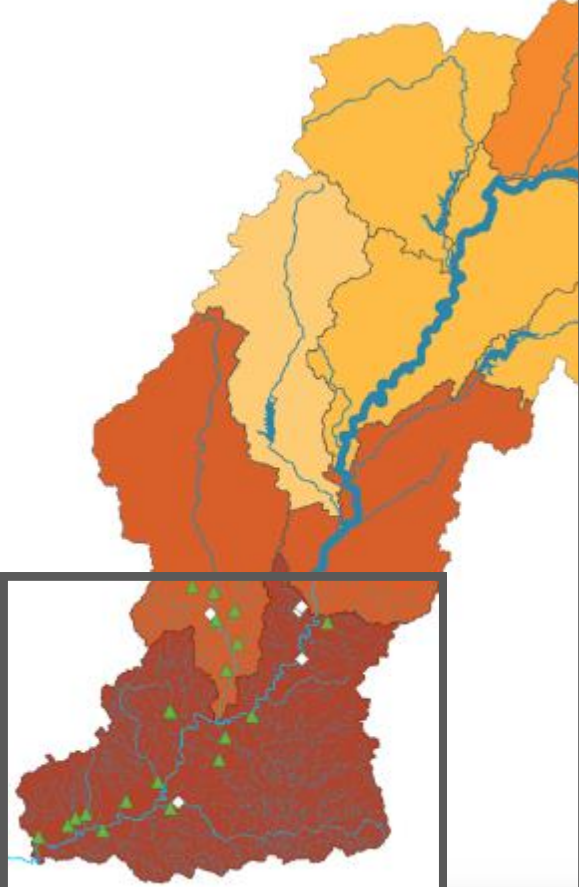
 **Bacteria: D**

 **Environmental Burden: D**

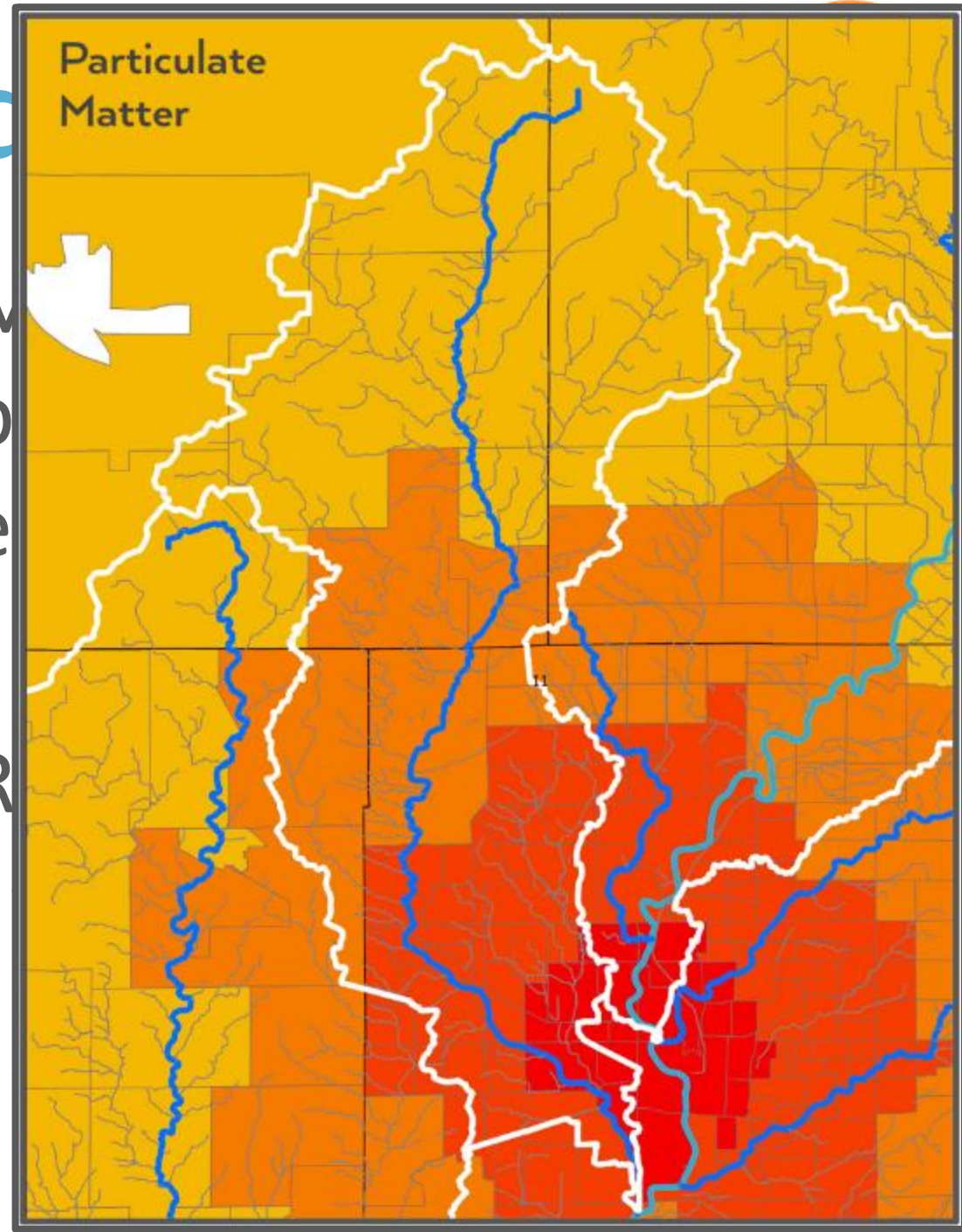
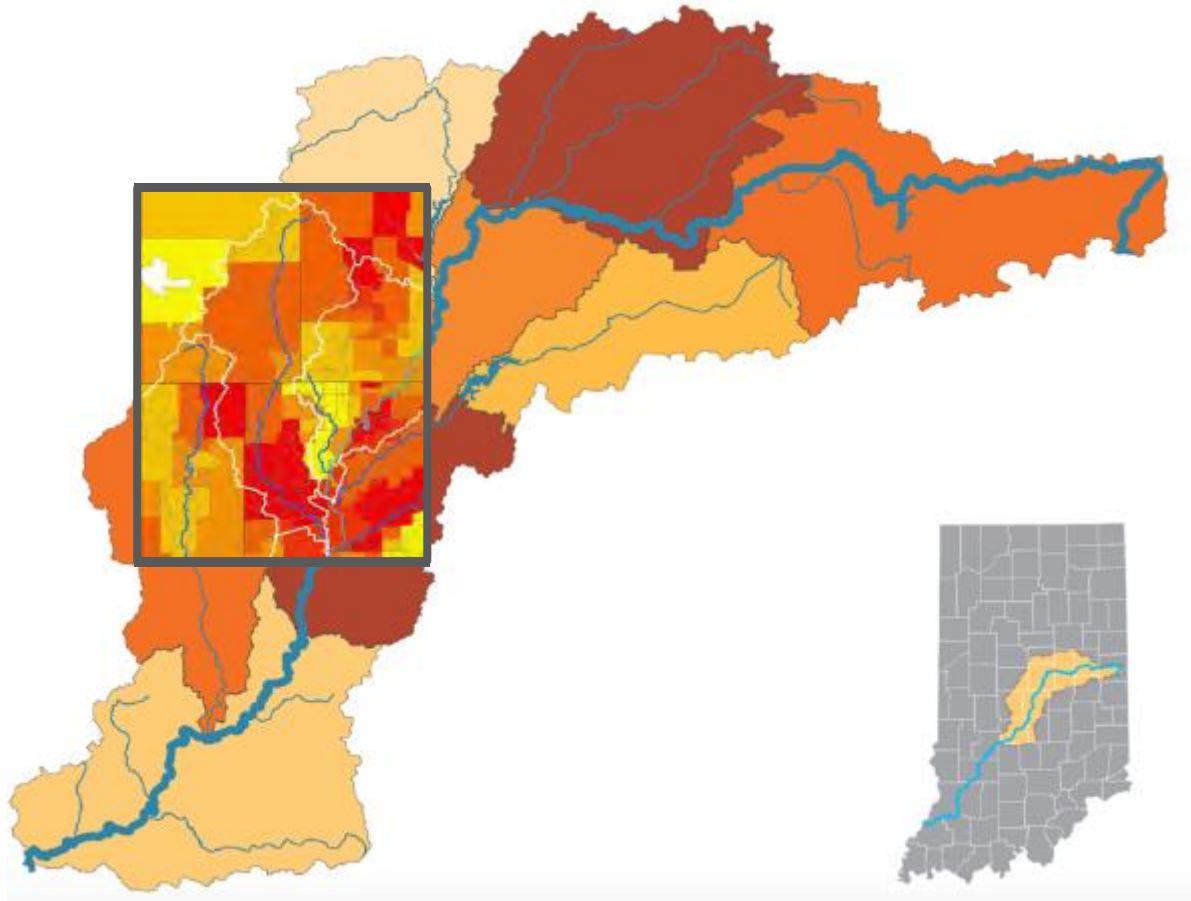
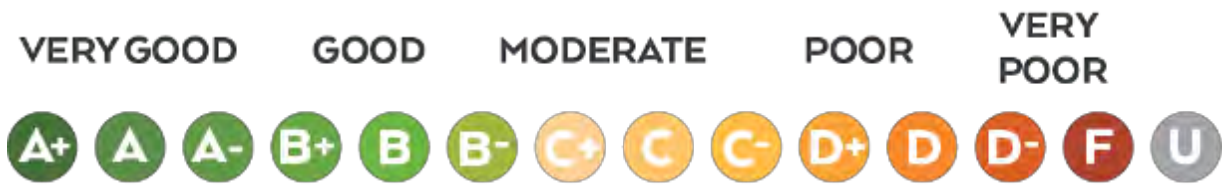
 **Wetland Change: F**

Bacteria

VERY GOOD GOOD MOD



Environmental Burden



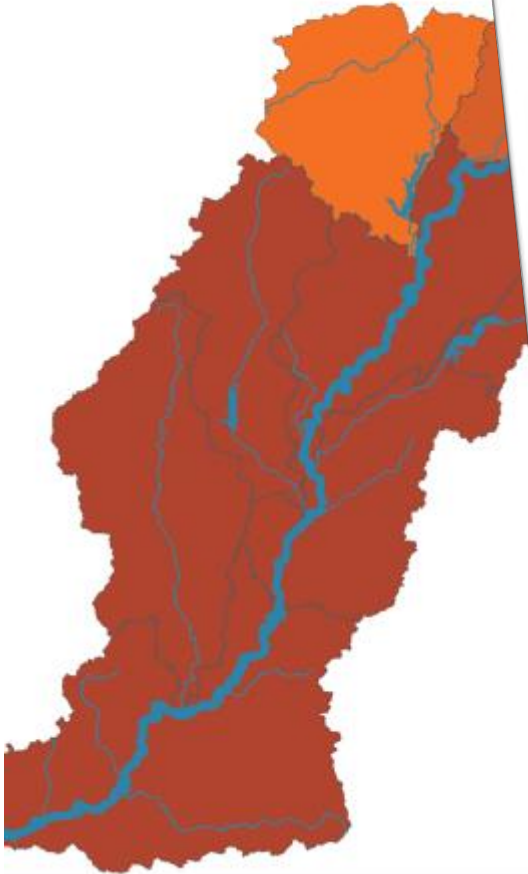
- M
- p
- e
- R

Wetland C

VERY GOOD

GOOD

A+ A A- B+ B B-



Indiana lawmakers could further dilute state wetlands protections following SCOTUS decision



BY: CASEY SMITH - JULY 26, 2023 7:00 AM



A May ruling from the U.S. Supreme Court will allow Indiana lawmakers to further strip away regulations that currently keep developers from repurposing wetlands for commercial use. (Photo courtesy the U.S. Environmental Protection Agency)

A U.S. Supreme Court ruling from earlier this year will effectively remove federal protections for most of Indiana's wetlands – and enable Hoosier lawmakers to repeal already-weakened state protections for those areas.

The high court ruled in May that federal protections for wetlands under the Clean Water Act only apply to wetlands with a continuous surface connection to federally protected waterways that make them “indistinguishable” from those waters.

The ruling will allow states to further strip away regulations that currently keep developers from repurposing wetlands for commercial use.

It's not yet clear how Indiana lawmakers plan to respond, but the Republican-dominated legislature has in



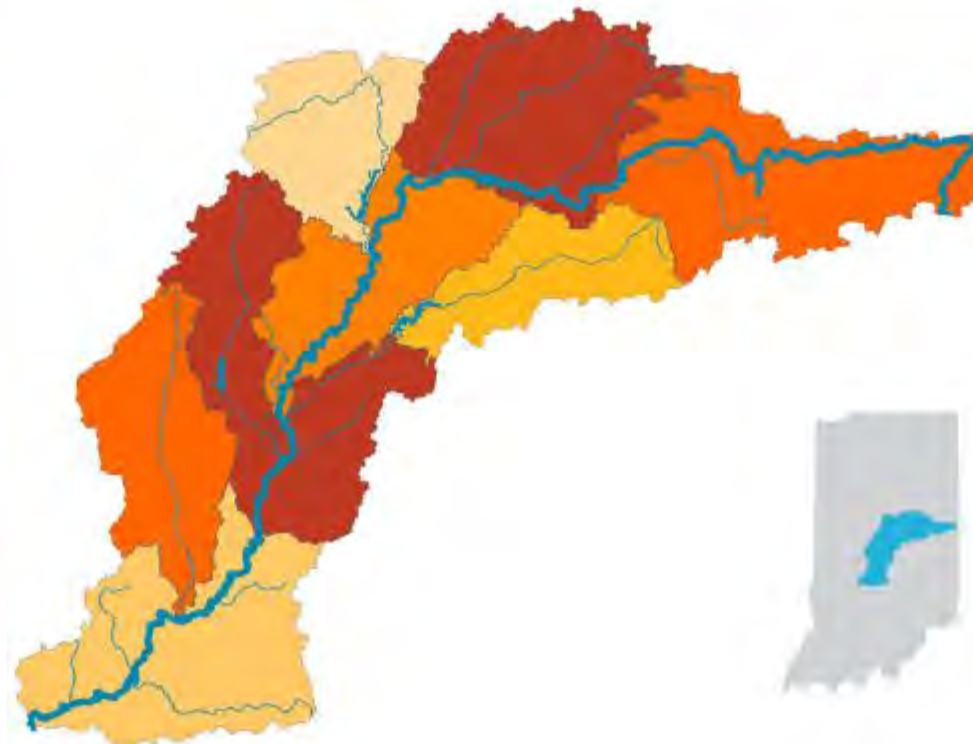
s measured?
in area over time
lity of wetland

an impact

Indicators

Affordability Environmental Burden Health Economy Education Voter Participation Parks & Trails Development Practices Agricultural Practices
 Tree Canopy Wetland Change Wildlife Diversity Nutrients Sediment Bacteria Aquatic Life Demand Flooding

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	C- 45-40%
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	D 35-25%
	D- 25-20%
VERY POOR	F 20-0%
	U UNRATED



Environmental Burden

Evaluates a person's potential exposure to environmental pollution based on population and presence of various air pollution, hazardous sites, transportation infrastructure, water pollution, and lead-based paint presence.

Data source: US Centers for Disease Control and Prevention

Next Steps: Raise the Grade



1 COMMUNICATE & ENGAGE



Communicate Results & Engage Stakeholder

- Engage key partners aligned to indicators
- Regional conversations

Communicate Results

- Two Public Officials Preview events
- Two Public Launch Events
 - Linked to 1st WR canoe races
 - >140 participants
- Press coverage:
 - 7 TV segments
 - 3 print articles
 - 1 radio mention



Next Steps: Raise the Grade



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Communicate Results & Engage Stakeholder

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2 RECOMMEND POLICY & ACTIONS



Recommend Actions & Policy

- Deeper dive into regional data to guide actions and policies
- Create resources like model ordinances

Recommend Actions & Policy

- Incentive & Restoration Programs
 - State & Federal (LARE, CWI, 319, Farm Bill, etc.)
 - Local (grants, administrative aids)
- Policies (Regulation & Ordinances)
 - Wetlands & Floodplains
 - Septic system inspection
 - Development standards (stormwater, densities, buffers, etc.)
- Funding Allocations
 - Renewables energy, brownfield remediation
 - Public transportation, bike/pedestrian infrastructure
 - Parks, green infrastructure



Next Steps: Raise the Grade



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3 BUILD CAPACITY



Build Capacity

- Align partner activities and increase collaboration
- Direct and leverage funding sources

Leadership Team



Supported By





Questions?



WhiteRiverReportCard.org