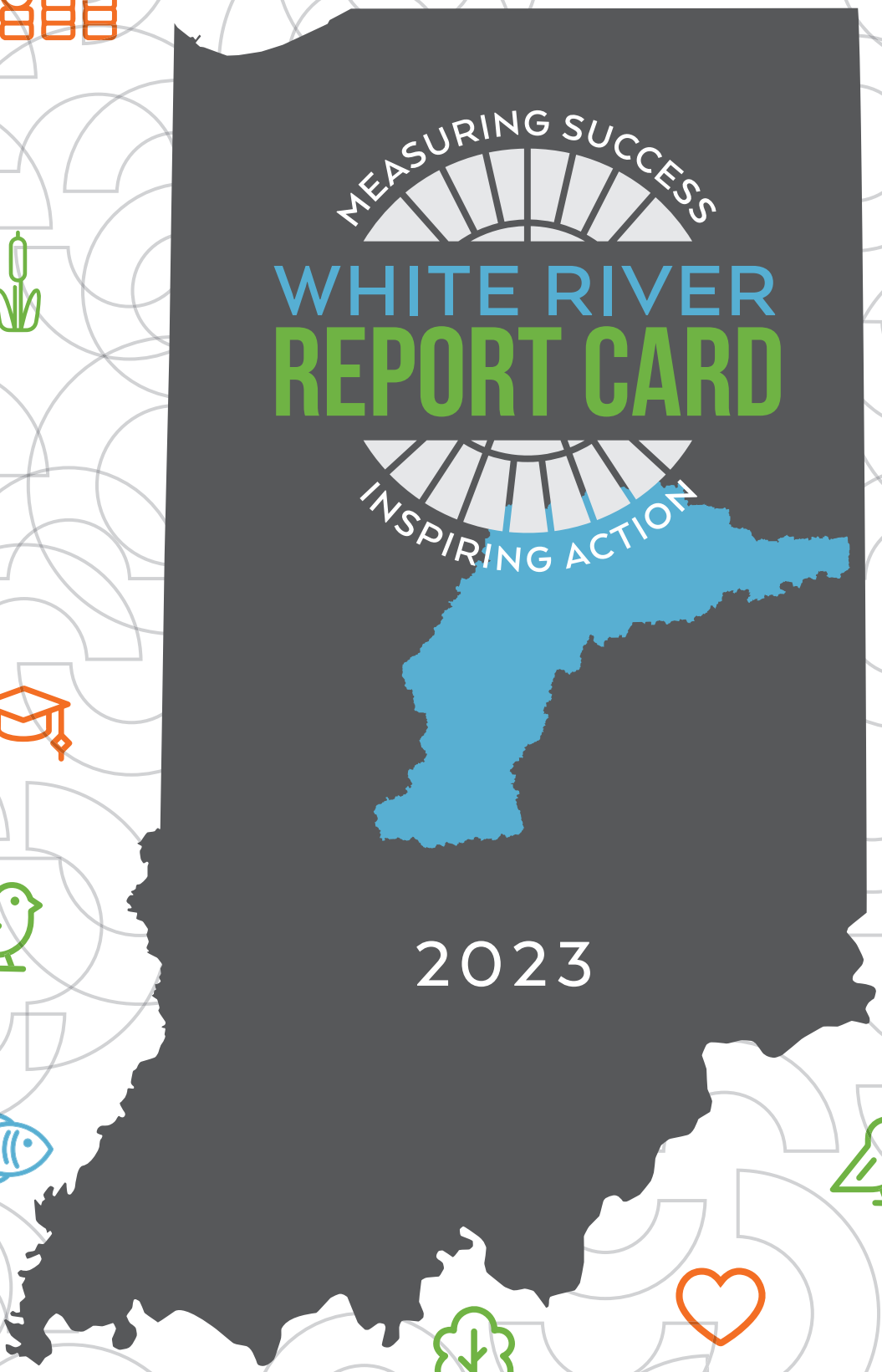
MEASURING SUCCESS

WHITE RIVER REPORT CARD

INSPIRING ACTION



2023

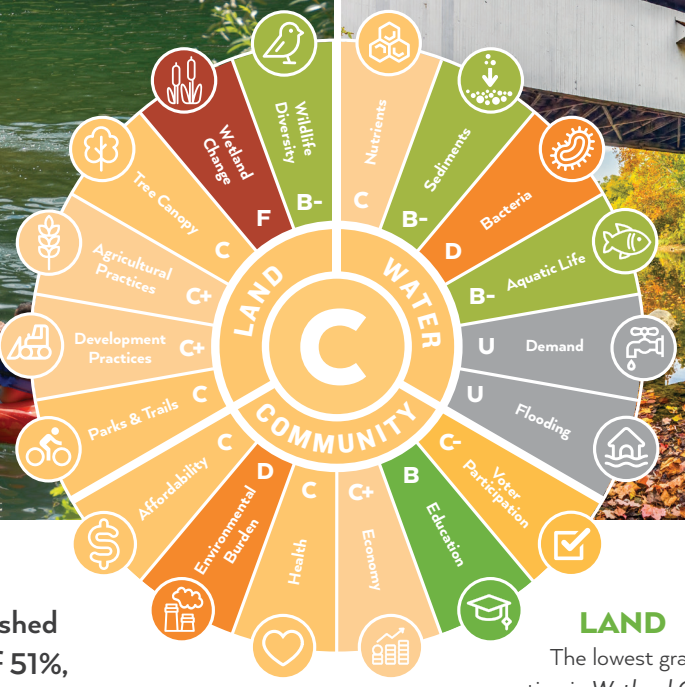
The West Fork of the **WHITE RIVER** flows across central Indiana, creating the largest watershed that is entirely contained within the state's borders. This Report Card is focused on the West Fork of the White River and the surrounding land which together make up the Upper White River Watershed. The Upper White River Watershed encompasses a 2,720 square mile area (1,740,544 acres) within central Indiana. It extends across sixteen (16) counties, including significant portions of Hancock, Marion, Hendricks, Johnson, Hamilton, Morgan, Boone, Tipton, Madison, Henry, Delaware, and Randolph Counties as well as smaller portions of Owen, Monroe, Brown, and Clinton Counties. More than half – about 55% – of land in the watershed is in agriculture, 28% of the region is developed, and 16% is considered natural (forest, shrubs, wetland, and open water).

The White River begins as a humble drainageway in a farmer's field south of Winchester in Randolph County where groundwater and tile discharge combine to create a narrow channel of flowing water that forms into a small stream. The stream continues to build as it consolidates other small, nearby rivulets and ditches, winding west through Delaware and Madison Counties. Here, the stream begins to grow into a river large enough to support recreational uses and draw people to its banks. Having widened considerably, the river then flows in a southwestern direction passing through farms, woodlands, small towns, bustling cities, and industrial areas. These diverse land uses all influence the health of the White River which is a critical element in the health of the community.

The watershed is home to a third of Indiana's population for whom its waters are a source for drinking water, irrigation, recreation, wildlife habitat, and more. Likewise, the river plays a significant role in the economy with energy production and industrial uses among the largest water consumers in the watershed.

Much of this use has led to extensive pollution and ecosystem degradation, resulting in many stream miles (71%) that do not meet State water quality standards — these are called impaired waters. Understanding the current state of the river and its surrounding landscape and communities is key to creating strategies to improve and protect it.

This White River Report Card is an assessment and communication tool to do just that. It is designed to measure community progress, align partners and activities, and inspire change that improves the river and its watershed while preserving the community and economy.



Overall, the White River watershed has a moderate health score of 51%, known as a "C" in the language of a report card. This grade is a composite of three broad indicator categories, **COMMUNITY**, **LAND**, and **WATER**, each of which has a moderate C score of 51%, 47%, and 54%, respectively. These three categories are each made up of six indicators which provide grades at a more detailed level. They are illustrated in the pinwheel shown above.

COMMUNITY

The overall highest scoring indicator in the watershed and within the Community section is *Education* with a B (71%) due to good high school graduation (or equivalent) rates in the region. The lowest scoring Community indicator is *Environmental Burden* with a D (29%), which is due to the high potential of exposure to things like air and/or water pollution, hazardous sites, and lead.

HIGHEST SCORE

LOWEST SCORE

LAND

The lowest grade overall and in the Land section is *Wetland Change*, which scores an F (7%) due to extensive historic and ongoing wetland loss throughout the watershed. Conversely, the best scoring Land indicator is *Wildlife Diversity* with a B- (61%) due to key indicator species being found throughout the watershed.

HIGHEST SCORE

LOWEST SCORE

WATER

The Water category has a spectrum of scores with *Aquatic Life* being the best with a B- (64%) due to good aquatic habitat and fair fish communities. The lowest Water indicator is *Bacteria* with a D (33%) due to how often waterway bacteria levels are unsafe for swimming.

These indicators have also been evaluated individually within nine regions of the White River watershed, which are highlighted in this report. This was done to identify unique conditions in various parts of the watershed so that strategic and targeted actions could be taken for improvement.

HIGHEST SCORE

LOWEST SCORE

REPORT CARD PROCESS

Watershed report cards are assessment and communication tools that have been used around the world to compare ecological, social, and/or economic information against predefined goals or objectives. Similar to school report cards, watershed report cards provide performance-driven numeric and letter grades to effectively integrate and synthesize large, often complex, information into simple scores that can be communicated to decision makers and the general public to help guide community activity and public policies.

This first White River Report Card was created by following an extensive co-development process (diagrammed below) which involved over 200 stakeholders from the community, business, industry, government, agricultural, conservation, and utility sectors. The key to a report card's success is the use of measures called indicators that reflect the many different community values and uses of the river and its watershed.

1 WHAT IS THE BIG PICTURE?
IDENTIFY BASIN VALUES AND THREATS

2 WHAT DO WE MEASURE?
CHOOSE INDICATORS

3 WHAT IS HEALTHY?
DEFINE THRESHOLDS FOR INDICATORS

4 HOW DOES IT ADD UP?
CALCULATE SCORES AND DETERMINING GRADES

5 WHAT IS THE STORY?
COMMUNICATE RESULTS

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

CICERO CREEK & MORSE RESERVOIR

LAND C+ WATER C COMMUNITY B

Cicero, Tipton, Sheridan, and the northwest corner of Noblesville are found in this region. Agriculture is the dominant land use. **This region has an overall score of 57%, a C+.** By category, the region has a B (68%) in Community, C (51%) in Land, and C (48%) in Water. The lowest scoring indicators are *Wetland Change* with a D and *Wildlife Diversity* with a D+. The highest scoring indicators are *Education* and *Voter Participation*, both with an A.

HIGHEST SCORES LOWEST SCORES

EAGLE CREEK & EAGLE CREEK RESERVOIR

LAND C WATER B COMMUNITY C-

This region includes Zionville, Speedway, Whitestown, and the northwestern portion of Indianapolis. Land use is split roughly in half between agriculture and development. **This region has an overall score of 52%, a C.** By category, the region has a C- (41%) in Community, C (47%) in Land, and B (68%) in Water. The lowest scoring indicators are *Wetland Change* and *Environmental Burden*, both failing (F). The highest scoring indicators are *Sediment* (amount in the water) with an A- and *Wildlife Diversity* with a B+.

HIGHEST SCORES LOWEST SCORES

WHITE LICK CREEK

LAND C- WATER C COMMUNITY C+

This region is home to Avon, Plainfield, Brownsburg, and Danville. While about half the land use is in agriculture, about a third is developed. **This region has an overall score of 51%, a C.** By category, the region has a C+ (58%) in Community, C- (42%) in Land, and C (53%) in Water. The lowest scoring indicators are *Wetland Change* and *Tree Canopy*, both failing (F). The highest scoring indicators are *Education* with an B+ and *Aquatic Life* with a B.

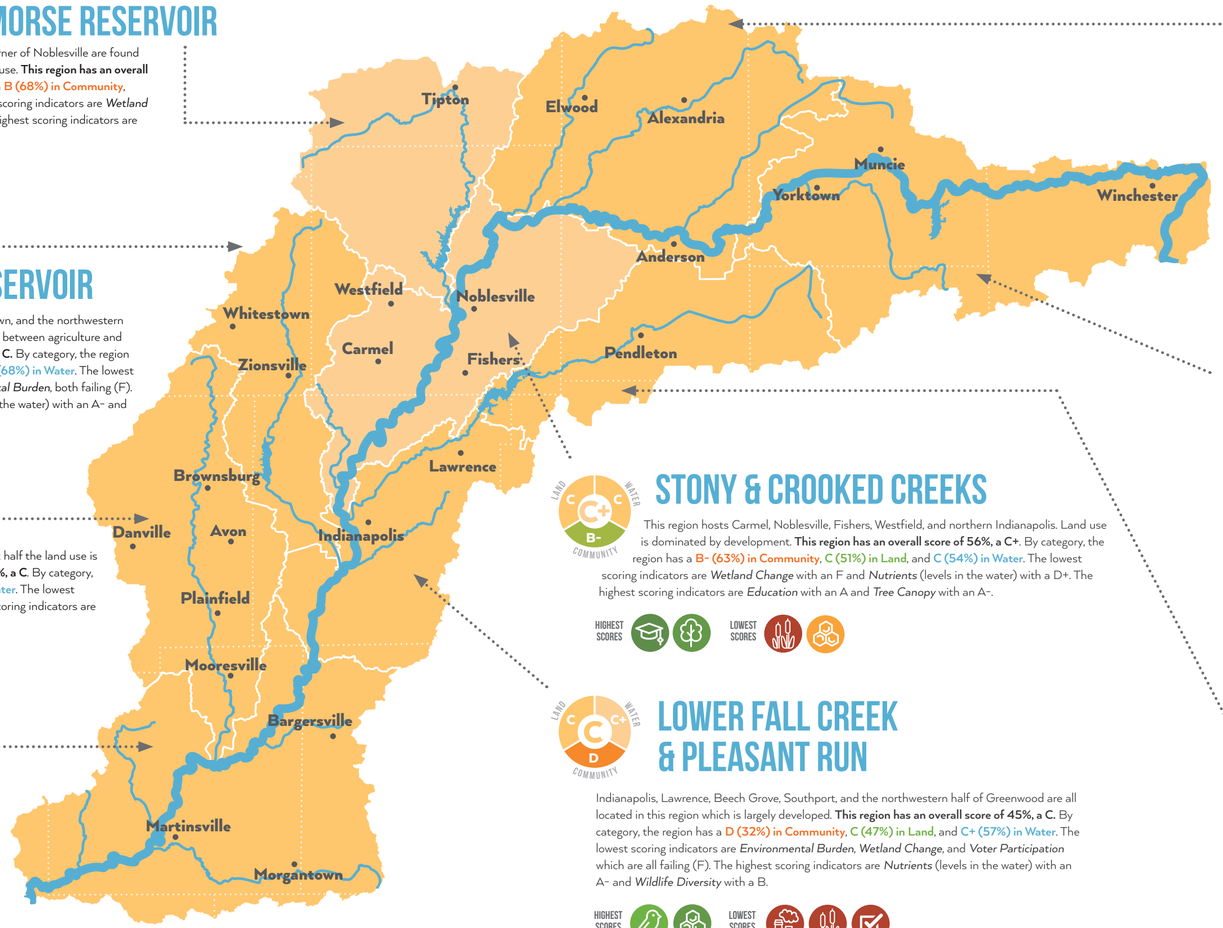
HIGHEST SCORES LOWEST SCORES

CLEAR, LAMBS, INDIAN, & BUTLER CREEKS

LAND C WATER D+ COMMUNITY B-

Martinsville, Trafalgar, Bargersville, and Monrovia are all located in this region, which is dominated by natural areas and agriculture. **This region has an overall score of 49%, a C.** By category, the region has a B- (61%) in Community, C (50%) in Land, and D+ (37%) in Water. The lowest scoring indicators are *Bacteria* (amount in the water) and *Wetland Change*, both failing (F). The highest scoring indicators are *Development Practices*, *Education*, and *Voter Participation*, all with a B.

HIGHEST SCORES LOWEST SCORES



STONY & CROOKED CREEKS

LAND C+ WATER C COMMUNITY B-

This region hosts Carmel, Noblesville, Fishers, Westfield, and northern Indianapolis. Land use is dominated by development. **This region has an overall score of 56%, a C+.** By category, the region has a B- (63%) in Community, C (51%) in Land, and C (54%) in Water. The lowest scoring indicators are *Wetland Change* with an F and *Nutrients* (levels in the water) with a D+. The highest scoring indicators are *Education* with an A and *Tree Canopy* with an A-.

HIGHEST SCORES LOWEST SCORES

LOWER FALL CREEK & PLEASANT RUN

LAND C WATER C+ COMMUNITY D

Indianapolis, Lawrence, Beech Grove, Southport, and the northwestern half of Greenwood are all located in this region which is largely developed. **This region has an overall score of 45%, a C.** By category, the region has a D (32%) in Community, C (47%) in Land, and C+ (57%) in Water. The lowest scoring indicators are *Environmental Burden*, *Wetland Change*, and *Voter Participation* which are all failing (F). The highest scoring indicators are *Nutrients* (levels in the water) with an A- and *Wildlife Diversity* with a B.

HIGHEST SCORES LOWEST SCORES

KILLBUCK, PIPE, & DUCK CREEKS

LAND C- WATER C+ COMMUNITY D+

Elwood, Alexandria, Frankton, and the northern half of Anderson are found in this agricultural region. **This region has an overall score of 47%, a C.** By category, the region has a D+ (37%) in Community, C- (44%) in Land, and C+ (59%) in Water. The lowest scoring indicators are *Environmental Burden* and *Voter Participation*, both with failing grades (F). The highest scoring indicators are *Aquatic Life* with a B+ and *Sediment* (amount in the water) with a B.

HIGHEST SCORES LOWEST SCORES

HEADWATERS & PRAIRIE CREEK RESERVOIR

LAND C- WATER C+ COMMUNITY D+

The headwaters region is dominated by agriculture and is home to Muncie, Yorktown, Winchester, and Daleville. **This region has an overall score of 47%, a C.** By category, the region has a D+ (39%) in Community, C- (43%) in Land, and C+ (59%) in Water. The lowest scoring indicators are *Wetland Change* and *Voter Participation* with failing (F) scores in each. The highest scoring indicators are *Education*, *Nutrients* (levels in the water), and *Aquatic Life*, all with a B.

HIGHEST SCORES LOWEST SCORES

UPPER FALL CREEK & GEIST RESERVOIR

LAND C- WATER C COMMUNITY B-

Pendleton, McCordsville, Ingalls, and the southern half of Anderson populate this region which is roughly split between agriculture and development. **This region has an overall score of 51%, a C.** By category, the region has a B- (61%) in Community, C- (42%) in Land, and C (52%) in Water. The lowest scoring indicators are *Wetland Change* with an F and *Parks & Trails* with a D. The highest scoring indicators are *Education* with an A- and *Voter Participation* with a B.

HIGHEST SCORES LOWEST SCORES

IMPROVEMENT STRATEGIES

REMEMBER!

Solutions require an informed and participating public to help drive change.

For this reason, increasing voter participation remains an important strategy in protecting our watershed.

Chris Flook Visit Indiana

Protecting critical natural assets is the greatest opportunity to affect change across the watershed. These assets, also known as natural green infrastructure, include wetlands, forests, and floodplains. In the landscape, these assets function to treat water pollution, recharge groundwater supplies, protect communities from flooding, clean air, and lessen climate change impacts. State and local regulations, incentive programs that facilitate protection, and investments in the restoration of these ecosystems are the most important and impactful solutions for both watershed and public health.

Human and animal waste pollution is severely limiting recreation and economic development opportunities and threatening public health. While large-scale efforts are ongoing to lessen combined sewer overflows, many other more diffuse sources of waste need attention. Solutions can be implemented by ordinance or incentive. They include the use of natural buffers along streams and stormwater ponds to help trap and treat polluted runoff from farms and urban landscapes, fencing livestock out of streams, deploying manure management systems, investing in septic system education, maintenance, inspections, enforcement, and increasing access to sewer connections.

Community health reflects watershed health. Poor environmental burden grades represent the impact that land use, environmental policy, and pollution prevention strategies have on people. Solutions to reduce this burden and ongoing risk require many actions such as reducing lead exposure, remediating brownfields, and lessening air pollution. This includes investing in renewable, non-combustion energy sources, committing resources to public transportation and bike/pedestrian infrastructure, and working with industry partners on emission reduction strategies.

Some additional key solutions will result in unique localized benefits. Specific areas of the watershed could be greatly improved by small shifts in development practices that promote density and lessen paved surfaces. Likewise, neighborhood-level investment in affordable housing is also essential to local viability and sustainability. Lastly, targeted increases in parks, trails, and tree canopy cover would provide measurable improvements to community health in certain areas.

NEXT STEPS, RAISE THE GRADE!

The creation of the White River Report Card is just the beginning. The report card provides a baseline understanding of community and ecosystem conditions. It will be used to broadly communicate important thresholds, increase public awareness, and inform decision-makers to promote collective work to improve the health of the watershed. The report card will be used to engage and align partners and activities around report card indicators to increase collaboration, capacity, efficiency, and improve scores. Additionally, the multidisciplinary stakeholders that created the report card will continue to work together to develop policy language, model local ordinances, and other strategies to improve future report card scores.

This report card is a transparent and timely assessment of White River watershed health as of May 2023. It was co-developed with engagement of hundreds of stakeholders and refined with input from dozens of experts. The data and methods used to create this report card are detailed in the methods document found at WhiteRiverReportCard.org. The core team that led development of the report card and this document included the White River Alliance, Indy Tourism Tomorrow, FlatLand Resources, The Nature Conservancy, and the University of Maryland Center for Environmental Science.

WHITE RIVER ALLIANCE

Indy TOURISM Tomorrow

The Nature Conservancy
Protecting nature. Preserving life.

FLATLAND RESOURCES

University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

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