RURAL ROAD AND BRIDGE NEEDS 2022

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Cover photo provided by United Soybean Board.

RURAL ROAD AND BRIDGE NEEDS 2022

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EXECUTIVE SUMMARY

The Indiana General Assembly passed legislation in 2016 and 2017 that expanded the ongoing resources available for local roads and bridges by creating the Community Crossings Matching Grant Program and increasing fuel taxes. This report is the fourth of a series starting in 2019 funded by the Indiana Soybean Alliance (ISA) to evaluate the condition of Indiana's rural infrastructure, roads, and bridges in light of these expanded resources. This report is the first in which two full complements of data were available for the 91 study counties, allowing the research team to begin evaluating trends for inventories, conditions, revenue, and spending.[1]

The analysis utilizes data from county highway departments, including road inventory and condition data collected from 2021 and 2022 local asset management plans, bridge inventory and condition data from the 2021 and 2022 National Bridge Inventory (downloaded in October 2021 and December 2022), as well as revenue and spending data from the 2020 and 2021 Annual Operational Reports for Local Roads and Streets and Bridges submitted to the Indiana Local Technical Assistance Program (LTAP) Data Management Portal and the Indiana State Board of Accounts (SBOA)—referred to as annual operational reports. In addition, the research team also used supplemental revenue data available from other sources.

As reported, local agencies are receiving additional funds, so what impact are they making? The condition ratings during the past two years indicate stable conditions with some counties reporting slight improvements. This may suggest local infrastructure network conditions have stabilized after years of decline. This decline was communicated previously by local authorities but was not documented.

Road inventories and conditions

- In 2022, the 91 study counties reported 63,262 centerline miles of rural roads comprised of asphalt, chip seal, gravel, and concrete pavements. Counties report Indiana's rural roads are made up of 57% asphalt, 24% chip seal, 18% gravel, and 1% concrete pavements.
- In 2022, the number of counties with one or more pavement types with poor average ratings pavements decreased from 37 in 2021 to 33. Among pavement types, these numbers may indicate improvement in reducing poor chip seal and gravel pavements. For the same period, however, the number of counties with average ratings of poor for asphalt pavements increased slightly, and poor concrete pavements also increased.
  - o The average condition ratings for asphalt pavements across counties dropped 2% from 2021 to 2022. Also, one additional county reported an average poor rating in 2022.
  - o For chip seal pavements, the average condition rating was slightly higher in 2022 than in 2021, and the number of counties with an average rating of poor decreased by two.
  - o The average rating for gravel pavements for counties using the 5-pt PASER scale was good (3.3). The number of counties that had an average rating of poor decreased by two.
  - o For concrete pavements, the average rating across counties also was slightly lower than in 2022 and the number of counties with an average rating of poor increased by one. The inventory of concrete pavements is small and less than .05% of total inventory.
- Local governments reported treating fewer road miles in 2022 than in 2021 overall. Category B counties treated more road miles in 2022, while Category A and Category C counties reported treating fewer.
- Among pavement types, the percentages of road miles treated in 2021 and 2022 were similar for asphalt, gravel and concrete—increasing or decreasing by about 1%. The reduction in road miles treated for chip seal was 3% less in 2021 than in 2022.

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[1] Marion County is excluded due to its urban character.

Bridge and culvert inventories and conditions

- In 2022, the 91 study counties reported having 11,170 bridges and 1,448 culverts, 18 more bridges and 30 more culverts than were reported in 2021.
- Across the study counties, 16 bridge decks, 20 superstructures, and 11 substructures were rated as failed. This is the same number of bridge decks reported as failed in 2021. However, it was three fewer superstructures and two fewer substructures than reported in 2021. In addition, there are two bridge decks, five superstructures, and two substructures reported to be in danger of imminent failure. Overall, there were seven fewer components in imminent failure than in 2021, including two fewer decks, three fewer superstructures, and two fewer substructures.
- Across the study counties, 64 culverts were rated poor, two more than in 2021.
- Currently, there is no good data documenting the treatment activity for bridges annually. One option is to restore some of the detail about road and bridge activities that was available in Section 3 of the annual operational report prior to 2018.

Road and bridge revenue and spending

- Counties received more funding in 2021 than in 2020. The average county revenue was $9.8 million in 2021 compared to $9 million in 2020. In 2021, 84 counties were awarded Community Crossings Matching Grants of $77.9 million. In comparison, 87 counties received grants in 2020 for a total of $83.3 million.
- Counties continued to use a variety of funding sources to support road and bridge work in 2022. All or almost all study counties reported using Motor Vehicle Highway and Local Road and Street distributions, property taxes, and Financial Institutions and Vehicle/Aircraft Tax distributions. More than half of the 91 study counties have adopted a County Motor Vehicle Excise Surtax and Wheel Tax, and a handful of counties reported a variety of other funding sources.

- Two more counties reported using debt to fund road and bridge infrastructure and equipment in 2021 than in 2020. Three more counties also reported using lend-lease arrangements to finance equipment in 2022.
- Overall, counties reported that slightly more than half of all spending went to construction, reconstruction, and preservation activities. They reported that 19% went to winter operations and other maintenance and repair.
- In 2021, average county spending on winter operations was more than two times higher for counties in the northern region than counties in the central and southern regions.

INTRODUCTION

Good rural road and bridge infrastructure is critical to efficient farm-to-market movement of agricultural products. The Indiana Soybean Alliance (ISA) has invested in a series of studies to support the improvement of local infrastructure. ISA commissioned this report from the Indiana University Public Policy Institute to track road and bridge conditions with the ongoing infusion of resources provided through state legislation in 2016 and 2017. This report is the second effort with data from all 91 county highway departments. Marion County is the only county not included in this analysis due to its urban nature. This document includes a compilation of data benchmarks developed in the 2020 report, analysis of the annual and trend data, and recommendations for improvements in data collection.

STUDY COUNTIES

Figure 1 and Table 1 show the 91 study counties by population and region. The counties were divided into three population categories. Category A includes counties with a population up to 29,999. Category B includes counties with a population between 30,000 and 49,999. Category C includes counties with a population of 50,000 or more. For analysis of winter operations expenditures, the counties also were divided into regions based roughly on Indiana Department of Transportation (INDOT) district boundaries. Northern counties generally include those in the INDOT La Porte and Fort Wayne districts. Central counties include those in the Crawfordsville and Greenfield districts, and southern counties include those in the Seymour and Vincennes districts.

Figure 1. Study counties by population and region

Study county population
- Category A: 0–29,999
- Category B: 30,000–49,999
- Category C: 50,000+
- Marion County–Excluded from analysis
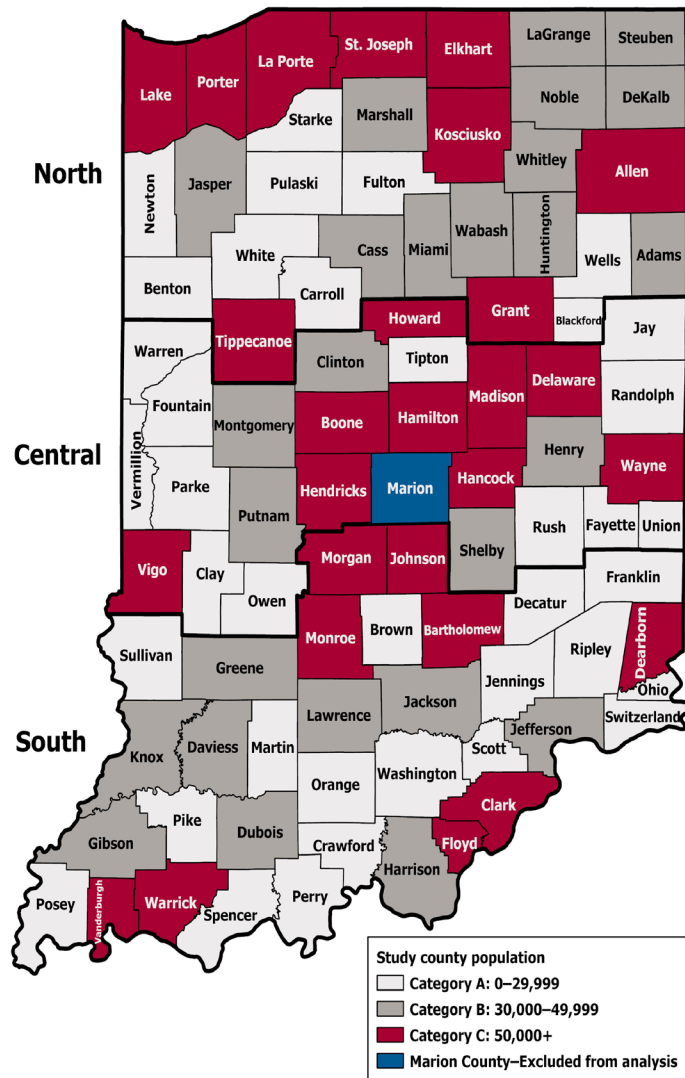
Table 1. Study counties by population and region

County	Region	2020 population	2021 population estimate	Population category
Adams	North	35,809	35,961	B
Allen	North	385,410	388,608	C
Bartholomew	South	82,208	82,475	C
Benton	North	8,719	8,714	A
Blackford	North	12,112	12,091	A
Boone	Central	70,812	73,052	C
Brown	South	15,475	15,552	A
Carroll	North	20,306	20,444	A
Cass	North	37,870	37,563	B
Clark	South	121,093	122,738	C
Clay	Central	26,466	26,410	A
Clinton	Central	33,190	33,065	B
Crawford	South	10,526	10,514	A
Daviess	South	33,381	33,397	B
Dearborn	South	50,679	50,816	C
Decatur	South	26,472	26,320	A
DeKalb	North	43,265	43,333	B
Delaware	Central	111,903	111,871	C
Dubois	South	43,637	43,549	B
Elkhart	North	207,047	206,921	C
Fayette	Central	23,398	23,360	A
Floyd	South	80,484	80,454	C
Fountain	Central	16,479	16,427	A
Franklin	South	22,785	22,842	A
Fulton	North	20,480	20,386	A
Gibson	South	33,011	32,924	B
Grant	North	66,674	66,263	C
Greene	South	30,803	30,786	B
Hamilton	Central	347,467	356,650	C
Hancock	Central	79,840	81,789	C
Harrison	South	39,654	39,761	B
Hendricks	Central	174,788	179,355	C
Henry	Central	48,914	48,935	B
Howard	Central	83,658	83,687	C
Huntington	North	36,662	36,717	B
Jackson	South	46,428	46,067	B
Jasper	North	32,918	33,091	B
Jay	Central	20,478	20,248	A
Jefferson	South	33,147	33,141	B
Jennings	South	27,613	27,409	A
Johnson	South	161,765	164,298	C
Knox	South	36,282	35,956	B

Table 1. Study counties by population and region (continued)

County	Region	2020 population	2021 population estimate	Population category
Kosciusko	North	80,240	80,106	C
LaGrange	North	40,446	40,524	B
Lake	North	498,700	498,558	C
La Porte	North	112,417	112,390	C
Lawrence	South	45,011	45,070	B
Madison	Central	130,129	130,782	C
Marshall	North	46,095	46,121	B
Martin	South	9,812	9,780	A
Miami	North	35,962	36,081	B
Monroe	South	139,718	139,875	C
Montgomery	Central	37,936	38,063	B
Morgan	South	71,780	72,206	C
Newton	North	13,830	13,808	A
Noble	North	47,457	47,227	B
Ohio	South	5,940	5,978	A
Orange	South	19,867	19,830	A
Owen	Central	21,321	21,446	A
Parke	Central	16,156	16,407	A
Perry	South	19,170	19,316	A
Pike	South	12,250	12,144	A
Porter	North	173,215	174,243	C
Posey	South	25,222	25,116	A
Pulaski	North	12,514	12,339	A
Putnam	Central	36,726	36,979	B
Randolph	Central	24,502	24,387	A
Ripley	South	28,995	29,081	A
Rush	Central	16,752	16,672	A
St. Joseph	North	272,912	272,212	C
Scott	South	24,384	24,355	A
Shelby	Central	45,055	45,039	B
Spencer	South	19,810	19,798	A
Starke	North	23,371	23,372	A
Steuben	North	34,435	34,632	B
Sullivan	South	20,817	20,758	A
Switzerland	South	9,737	9,790	A
Tippecanoe	North	186,251	187,076	C
Tipton	Central	15,359	15,372	A
Union	Central	7,087	7,047	A
Vanderburgh	South	180,136	179,987	C
Vermillion	Central	15,439	15,341	A

Table 1. Study counties by population and region (continued)

County	Region	2020 population	2021 population estimate	Population category
Vigo	Central	106,153	105,994	C
Wabash	North	30,976	30,816	B
Warren	Central	8,440	8,475	A
Warrick	South	63,898	64,514	C
Washington	South	28,182	28,102	A
Wayne	Central	66,553	66,456	C
Wells	North	28,180	28,197	A
White	North	24,688	24,651	A
Whitley	North	34,191	34,430	B

Source: U.S. Census Bureau on STATS Indiana.

Notes:

1. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

2. Counties are divided into regions based roughly on INDOT district boundaries. Northern counties generally include those in the INDOT La Porte and Fort Wayne districts. Central counties include those in the Crawfordsville and Greenfield districts, and southern counties include those in the Seymour and Vincennes districts.

METHODOLOGY

The analysis that follows utilizes data from county highway departments, including road inventory and conditions data collected from 2021 and 2022 local asset management plans, bridge inventory and conditions data from the 2021 and 2022 National Bridge Inventory (downloaded in October 2021 and December 2022), as well as revenue and spending data from the 2020 and 2021 Annual Operational Reports for Local Roads and Streets and Bridges submitted to the Indiana Local Technical Assistance Program (LTAP) Data Management Portal and the Indiana State Board of Accounts (SBOA)—referred to as annual operational reports, hereafter. Data is now available in an electronic format, making it much easier to analyze across counties. In each case, this data is the most recent available. The 2022 annual operational report will not be available until the second half of 2023. A complete discussion of methodology is provided in Appendix A.

The research team also used additional revenue data from the Indiana Department of Transportation Community Crossings Matching Grant awards, the local Annual Financial Reports submitted to the SBOA and available on the Gateway for Governmental Units website, the Indiana Office of the State Auditor Motor Vehicle Highway Account and Local Roads and Streets distributions, and the County Motor Vehicle Excise Surtax and Wheel Tax collected by the Indiana Bureau of Motor Vehicles.[2] Tables showing these data are provided in Appendix B.

In 2020, the research team developed a data template for the annual analysis of road and bridge conditions, spending, and revenue sources. With the availability of data for all counties for two years, the research team has been able to show trends. Figure 2 shows all the elements addressed in the current analysis.

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[2] This data appears in the *Indiana Handbook of Taxes, Revenues, and Appropriations* published by the Indiana Legislative Services Agency.

Figure 2. Elements for county template for roads and bridges data and analysis

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Roads
- The size of the road network and change over time
- The mix of pavement types in the road network and change over time
- Pavement conditions by type and change over time
- Miles of pavement treated by type and change over time

Bridges
- Inventory of bridges and culverts and change over time
- Bridge and culvert conditions and change over time
- Total annual spending (serves as a proxy for treatment and change over time

Revenue and spending
- Total annual spending and comparison over time
- Spending by activity and comparison over time
- Total revenue and change over time
- Types of revenues utilized and change over time
- Spending on winter operations by county size and region and change over time

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ROADS

This section includes an analysis of available county road data 2021–22 trends for the road inventory, the mix and condition of pavement types, pavement miles treated, total spending, spending by activity, winter operations spending, total revenues, and revenue type. The 2020 and 2021 annual operational reports and 2021 and 2022 asset management plans are the principal data sources used for the analysis. The research team also utilized supplemental revenue data from several state agencies. These sources are described in Appendix A: Methodology.

Road inventory

Asset management is a systemic approach to managing and distributing available resources to make changes and improvements on a network basis instead of a need basis. An inventory of road infrastructure and conditions is a key component in asset management because it describes condition by individual road segments, which is necessary to make network decisions on treatment options and spending. Table 2 shows the total, high, low, and average number of road miles for all study counties as reported in the 2022 asset management plans.

Table 3 compares road miles for each county as reported in the 2021 and 2022 asset management plans.[3] The study counties reported 63,262 centerline road miles in 2022, an increase of 200 miles from 2021. The size of the road inventory varies widely across counties generally and across counties in the three population categories. Allen County has the most centerline miles at 1,322, while Ohio County has the fewest at 143. Inventory adjustments result from municipal annexations, the dedication of private roads, roads in new subdivisions, agency transfers, assets taken out of service, new assets added, and inventory corrections.

Comparing the road inventories in 2021 and 2022 shows large differences in some counties. The discrepancies in these numbers should be resolved by these counties and consistent numbers reported in their asset management plans and operational reports. The inventories reported in the 2021 and 2022 asset management plans are used for the conditions analysis that follows.

Table 2. Summary of county road inventories by population category—2022

Counties	# of counties	Total	High	Low	Average
All study counties	91	63,262	1,322	143	693
Category A counties	38	23,053	923	143	606
Category B counties	26	19,758	932	530	760
Category C counties	27	20,451	1,322	351	757

Sources: 2022 asset management plans; U.S. Census Bureau.

Note: Marion County is not included.

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[3] In *Rural Road and Bridge Needs 2021*, the project team also showed the year-end inventories reported in the 2020 annual operational reports. For clarity, the project team has excluded this data from this report

Table 3. Changes in asset management road inventories from previous year inventories—2021 and 2022

County	Population category	2022 asset management plan mileage	2021 asset management plan mileage	Inventory changes
Adams	B	669	663	6
Allen	C	1,322	1,324	-2
Bartholomew	C	686	686	0
Benton	A	662	666	-4
Blackford	A	321	320	1
Boone	C	733	737	-4
Brown	A	406	392	14
Carroll	A	762	763	-1
Cass	B	864	864	0
Clark	C	513	471	42
Clay	A	686	681	5
Clinton	B	778	779	-1
Crawford	A	462	460	2
Daviess	B	781	781	0
Dearborn	C	503	504	-1
Decatur	A	645	674	-29
DeKalb	B	704	704	0
Delaware	C	802	801	1
Dubois	B	662	662	0
Elkhart	C	1,124	1,120	4
Fayette	A	406	406	0
Floyd	C	351	362	-11
Fountain	A	636	635	1
Franklin	A	633	632	1
Fulton	A	778	779	-1
Gibson	B	914	912	2
Grant	C	798	797	1
Greene	B	916	857	59
Hamilton	C	555	556	-1
Hancock	C	653	654	-1
Harrison	B	856	856	0
Hendricks	C	754	760	-6
Henry	B	792	791	1
Howard	C	584	583	1
Huntington	B	617	617	0
Jackson	B	729	729	0
Jasper	B	932	932	0
Jay	A	732	716	16
Jefferson	B	530	530	0
Jennings	A	667	667	0
Johnson	C	586	586	0

Table 3. Changes in asset management road inventories from previous year inventories—2021 and 2022 (cont.)

County	Population category	2022 asset management plan mileage	2021 asset management plan mileage	Inventory changes
Knox	B	855	856	-1
Kosciusko	C	1,169	1,170	-1
LaGrange	B	785	768	17
Lake	C	522	521	1
La Porte	C	1,058	1,058	0
Lawrence	B	625	626	-1
Madison	C	867	871	-4
Marshall	B	824	824	0
Martin	A	361	361	0
Miami	B	780	779	1
Monroe	C	716	719	-3
Montgomery	B	817	818	-1
Morgan	C	667	667	0
Newton	A	650	651	-1
Noble	B	813	813	0
Ohio	A	143	139	4
Orange	A	587	584	3
Owen	A	639	611	28
Parke	A	883	877	6
Perry	A	476	476	0
Pike	A	543	544	-1
Porter	C	782	782	0
Posey	A	691	693	-2
Pulaski	A	884	884	0
Putnam	B	752	752	0
Randolph	A	850	850	0
Ripley	A	713	711	2
Rush	A	747	747	0
St. Joseph	C	1,040	1,028	12
Scott	A	306	311	-5
Shelby	B	808	808	0
Spencer	A	774	745	29
Starke	A	671	641	30
Steuben	B	645	645	0
Sullivan	A	867	868	-1
Switzerland	A	320	326	-6
Tippecanoe	C	844	838	6
Tipton	A	552	553	-1
Union	A	264	264	0
Vanderburgh	C	518	514	4
Vermillion	A	395	394	1

Table 3. Changes in asset management road inventories from previous year inventories—2021 and 2022 (cont.)

County	Population category	2022 asset management plan mileage	2021 asset management plan mileage	Inventory changes
Vigo	C	828	826	2
Wabash	B	723	722	1
Warren	A	512	530	-18
Warrick	C	791	768	23
Washington	A	797	797	0
Wells	A	709	709	0
White	A	923	920	3
Whitley	B	587	612	-25

Sources: 2021 and 2022 asset management plans; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Overall, counties reported the mix of pavements as 57% asphalt, 24% chip seal, and 18% gravel/stone. They also reported having about 1% of concrete and less than 0.5% of other pavements. Category A and C counties reported a majority of their inventories were asphalt (54% and 74%, respectively). Category B counties reported having 42% asphalt and 36% chip seal (Table 4 and Figure 3).

A comparison between 2021 and 2022 shows the overall percentages by pavement type are similar (Figures 3 and 4). All population categories reported a slightly greater percentage of asphalt pavement in 2022 than the prior year. Category B counties report a small decrease in the percentage of chip seal payment and Category C counties reported a slight increase. Category A counties reported a slight decrease in the percentage of gravel pavement.

The classification of chip seal pavements remains a challenge. More clarity is needed statewide between true chip seal pavements on a gravel base and asphalt pavements treated with chip seal as a preservation strategy. Only the chip seal pavements on a gravel base should be inventoried as chip seal.

Figure 3. County roads by pavement type—2022
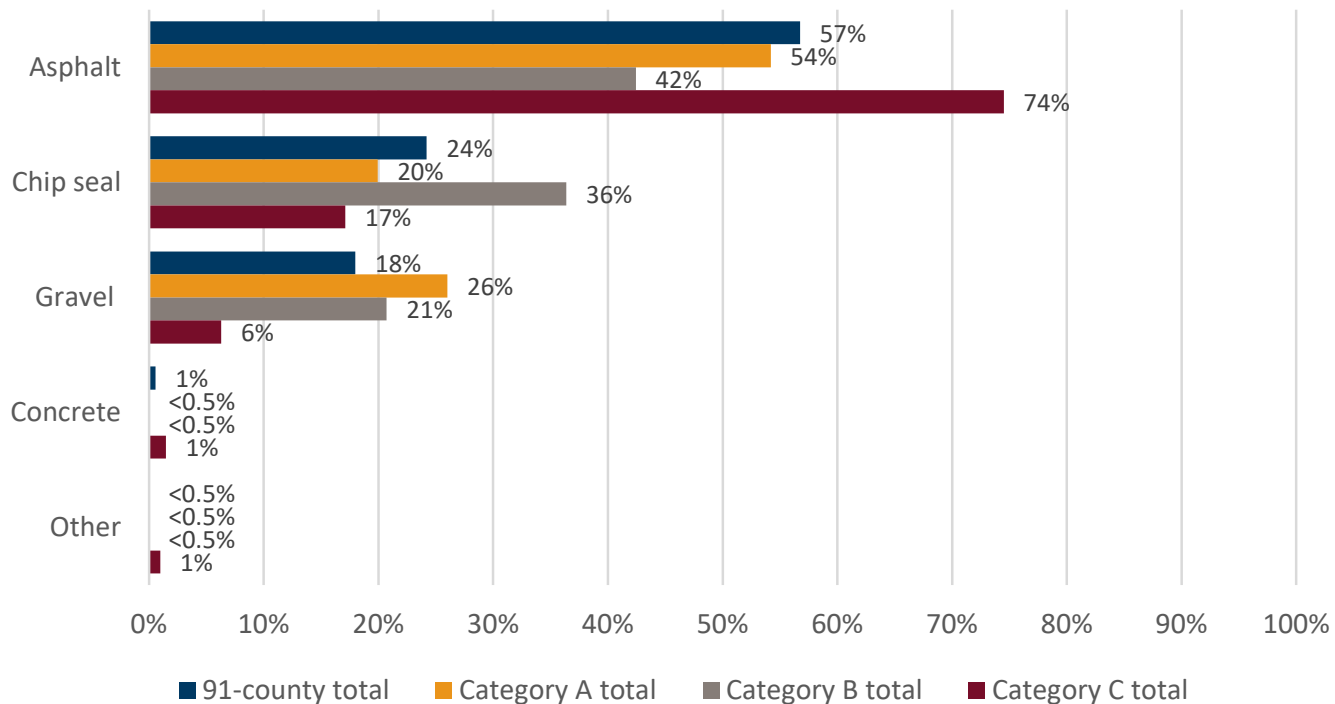
Sources: 2022 asset management plans; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+

Figure 4. County roads by pavement type—2021
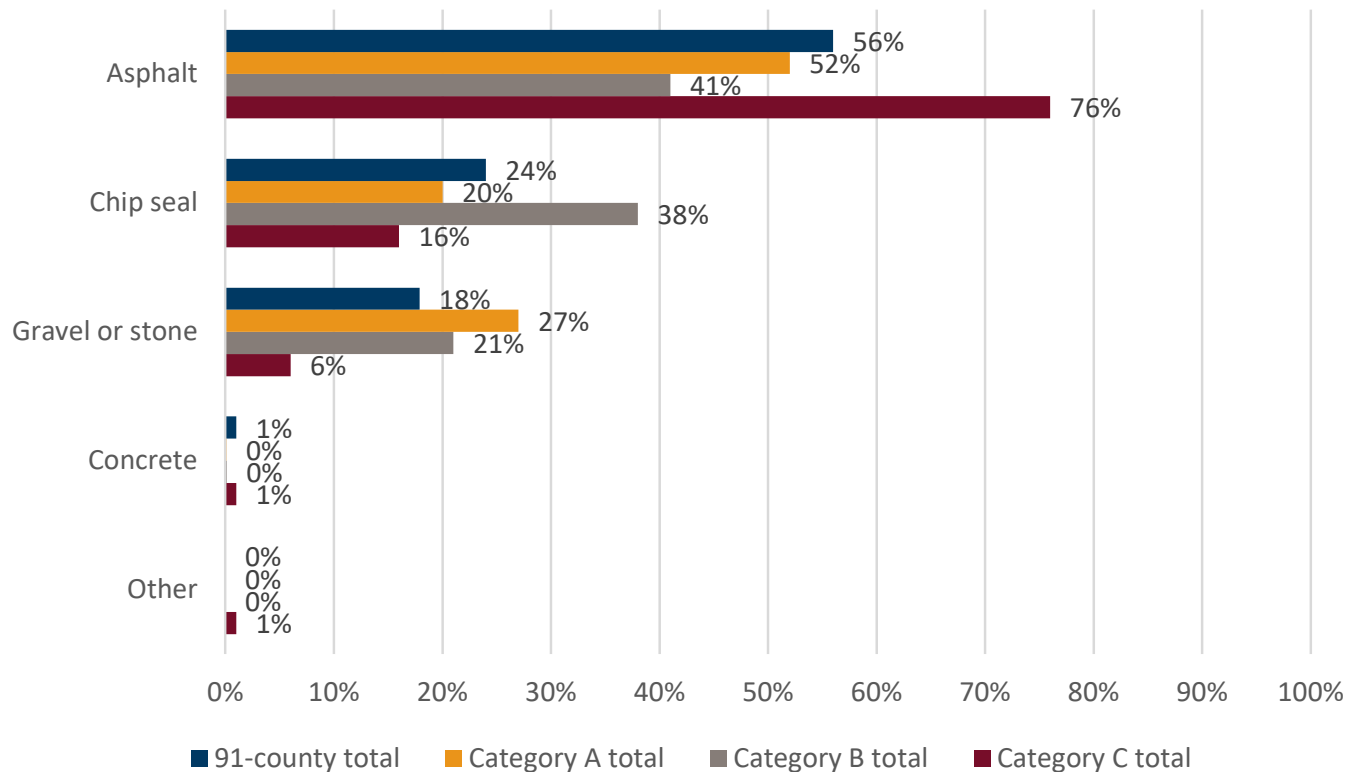
Sources: 2021 asset management plans; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+

Table 4. Road mileage by pavement type—2022

County	Population category	Mileage	Asphalt	Chip seal	Gravel	Concrete	Composite	Unim-proved
Adams	B	669	17%	68%	14%	0%	0%	<0.5%
Allen	C	1,322	45%	46%	7%	2%	0%	0%
Bartholomew	C	686	93%	6%	1%	0%	0%	0%
Benton	A	662	0%	51%	49%	0%	0%	0%
Blackford	A	321	32%	61%	7%	0%	0%	0%
Boone	C	733	56%	<0.5%	44%	<0.5%	0%	0%
Brown	A	406	65%	0%	35%	0%	0%	0%
Carroll	A	762	13%	63%	0%	0%	24%	0%
Cass	B	864	11%	77%	11%	<0.5%	0%	0%
Clark	C	513	98%	0%	<0.5%	<0.5%	<0.5%	0%
Clay	A	686	44%	15%	40%	0%	0%	0%
Clinton	B	778	9%	58%	32%	<0.5%	0%	0%
Crawford	A	462	48%	80%	43%	0%	0%	<0.5%
Daviess	B	781	36%	7%	54%	2%	<0.5%	0%
Dearborn	C	503	93%	<0.5%	6%	<0.5%	0%	0%
Decatur	A	645	88%	0%	11%	1%	0%	0%
DeKalb	B	704	18%	42%	40%	<0.5%	0%	0%
Delaware	C	802	99%	0%	0%	1%	0%	0%
Dubois	B	662	58%	23%	17%	0%	0%	2%
Elkhart	C	1,124	94%	0%	5%	1%	0%	0%
Fayette	A	406	23%	68%	9%	0%	0%	0%
Floyd	C	351	100%	0%	0%	<0.5%	0%	0%
Fountain	A	636	40%	8%	51%	0%	0%	0%
Franklin	A	633	95%	0%	5%	<0.5%	0%	0%
Fulton	A	778	29%	62%	9%	<0.5%	0%	0%
Gibson	B	914	20%	38%	39%	0%	0%	2%
Grant	C	798	17%	83%	0%	0%	0%	0%
Greene	B	916	59%	0%	41%	<0.5%	0%	0%
Hamilton	C	555	61%	39%	<0.5%	<0.5%	0%	0%
Hancock	C	653	55%	30%	3%	<0.5%	11%	0%
Harrison	B	856	97%	0%	3%	0%	0%	0%
Hendricks	C	754	80%	20%	<0.5%	<0.5%	0%	0%
Henry	B	792	58%	34%	8%	<0.5%	0%	0%
Howard	C	584	100%	0%	0%	<0.5%	0%	<0.5%
Huntington	B	617	99%	0%	<0.5%	<0.5%	0%	0%
Jackson	B	729	87%	0%	13%	0%	0%	0%
Jasper	B	932	20%	53%	27%	0%	0%	0%
Jay	A	732	68%	0%	29%	3%	0%	0%
Jefferson	B	530	60%	13%	27%	0%	0%	0%
Jennings	A	667	74%	12%	14%	0%	0%	<0.5%
Johnson	C	586	45%	50%	0%	4%	1%	0%
Knox	B	855	71%	0%	28%	<0.5%	0%	0%
Kosciusko	C	1,169	91%	0%	8%	<0.5%	0%	0%

Table 4. Road mileage by pavement type—2022 (continued)

County	Population category	Mileage	Asphalt	Chip seal	Gravel	Concrete	Composite	Unim-proved
LaGrange	B	785	21%	55%	24%	0%	0%	0%
Lake	C	522	82%	12%	6%	0%	0%	0%
La Porte	C	1,058	95%	0%	4%	<0.5%	0%	1%
Lawrence	B	625	91%	<0.5%	8%	<0.5%	0%	0%
Madison	C	867	57%	35%	<0.5%	8%	0%	0%
Marshall	B	824	28%	71%	<0.5%	<0.5%	0%	0%
Martin	A	361	39%	7%	54%	0%	0%	0%
Miami	B	780	21%	64%	15%	0%	0%	0%
Monroe	C	716	90%	0%	10%	0%	0%	0%
Montgomery	B	817	16%	48%	37%	0%	0%	0%
Morgan	C	667	78%	22%	0%	0%	0%	0%
Newton	A	650	28%	46%	26%	0%	0%	0%
Noble	B	813	29%	62%	9%	<0.5%	0%	0%
Ohio	A	143	96%	0%	4%	0%	0%	0%
Orange	A	587	82%	5%	13%	0%	0%	0%
Owen	A	639	68%	<0.5%	32%	0%	0%	0%
Parke	A	883	47%	7%	45%	0%	0%	1%
Perry	A	476	40%	11%	49%	0%	0%	0%
Pike	A	543	43%	2%	55%	<0.5%	0%	0%
Porter	C	782	60%	36%	10%	<0.5%	3%	<0.5%
Posey	A	691	50%	19%	31%	<0.5%	0%	0%
Pulaski	A	884	10%	52%	38%	0%	0%	0%
Putnam	B	752	21%	47%	31%	<0.5%	0%	<0.5%
Randolph	A	850	98%	0%	2%	0%	0%	0%
Ripley	A	713	93%	0%	7%	0%	0%	0%
Rush	A	747	97%	<0.5%	2%	0%	0%	0%
St. Joseph	C	1,040	78%	16%	5%	1%	<0.5%	0%
Scott	A	306	98%	0%	2%	0%	0%	0%
Shelby	B	808	95%	5%	0%	<0.5%	0%	0%
Spencer	A	774	47%	9%	44%	0%	0%	0%
Starke	A	671	84%	5%	11%	<0.5%	0%	0%
Steuben	B	645	62%	6%	32%	0%	0%	0%
Sullivan	A	867	34%	9%	57%	<0.5%	<0.5%	0%
Switzerland	A	320	100%	0%	0%	0%	0%	0%
Tippecanoe	C	844	71%	4%	20%	4%	<0.5%	0%
Tipton	A	552	22%	77%	10%	<0.5%	0%	0%
Union	A	264	42%	43%	15%	0%	0%	0%
Vanderburgh	C	518	91%	0%	0%	9%	0%	0%
Vermillion	A	395	65%	0%	35%	0%	0%	0%
Vigo	C	828	49%	35%	15%	1%	0%	0%
Wabash	B	723	3%	94%	3%	<0.5%	0%	0%
Warren	A	512	7%	28%	65%	0%	0%	0%

Table 4. Road mileage by pavement type—2022 (continued)

County	Population category	Mileage	Asphalt	Chip seal	Gravel	Concrete	Composite	Unim-proved
Warrick	C	791	71%	4%	20%	5%	0%	0%
Washington	A	797	89%	0%	11%	0%	0%	0%
Wayne	C	685	100%	0%	<0.5%	0%	0%	0%
Wells	A	709	2%	68%	30%	0%	0%	0%
White	A	923	53%	15%	32%	0%	0%	0%
Whitley	B	587	15%	69%	13%	<0.5%	30%	0%
91-county total	**N/A**	**63,262**	**57%**	**24%**	**18%**	**1%**	**<0.5%**	**<0.5%**
Category A total	**N/A**	**23,053**	**54%**	**20%**	**25%**	**<0.5%**	**<0.5%**	**<0.5%**
Category B total	**N/A**	**19,758**	**42%**	**36%**	**21%**	**<0.5%**	**<0.5%**	**<0.5%**
Category C total	**N/A**	**20,451**	**74%**	**17%**	**6%**	**1%**	**1%**	**<0.5%**

Sources: 2022 asset management plans; U.S. Census Bureau

Notes:

1. Percentages may add to slightly more or less than 100% due to rounding.

2. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Road conditions

When consistent investments are made using an asset management network approach, weighted average ratings should increase over time.[4] Tables 5–8 summarize pavement conditions for asphalt, chip seal, gravel, and concrete pavements in each county in 2021 and 2022. Eighty-six counties rate pavements using a Pavement Surface Evaluation and Rating system (PASER). Five counties—Delaware, Gibson, Tippecanoe, Vanderburgh, and Warrick—use the Pavement Conditions Index (PCI) method to rate pavement surfaces, Warrick County changed their rating system for pavements from PASER to PCI in 2022.

This is the second year the research team had access to a complete complement of 91-county data in asset management plans and operational reports. While this data generally showed improving ratings on average for chip seal and gravel, there were slight decreases in average ratings for asphalt and concrete pavements.

Figures 5 and 6 show asphalt, chip seal, and concrete pavements were rated fair on average in 2021 and 2022. The average ratings for chip seal pavements are generally lower than the average ratings for asphalt. Table 9 shows the number of counties reporting poor average weighted ratings by pavement type in 2021 and 2022. Between 2021 and 2022, the number of counties reporting one or more pavement types rated as poor decreased from 37 to 33. One additional county had average poor ratings for asphalt pavements, and the number of counties rated as poor for chip seal pavements decreased by three. The number of counties using the 5-pt PASER with poor average ratings for gravel pavements decreased by two, while the number for concrete pavements decreased by one. These numbers may indicate improvement in reducing poor pavements overall.

Asphalt rating data was available for 90 counties 2021 and 2022. Benton County reported no asphalt mileage. For asphalt pavements, the differences in individual county average ratings varied widely between a decrease of 20% to an increase of 18% from 2021 to 2022. Across 89 counties the aggregated average rating decreased by 2% (Table 5). A change was not calculated for Warrick County because of the change of rating systems.

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[4] An asset management approach is multi-year strategy that considers ratings across an agency's entire road and bridge network to distribute resources for network improvement. This approach utilizes a mix of treatments to optimize pavement conditions and performance while minimizing expenditures. Rather than a commonly practiced "worst first" approach, this strategy minimizes deterioration and maintains pavements before they require rehabilitation or replacement. A network approach has proven to be more effective over time.

Chip seal rating data was available for 65 counties in 2021 and 2022. The differences from 2021 to 2022 in individual county average ratings varied between -58% to +48%. The aggregated average rating for chip seal improved by 2% (Table 6).

Gravel rating data was available for 60 counties in both 2022 and 2021. Six additional counties reported a rating in 2022 that did not in 2021. Among the 60 counties with ratings for both 2021 and 2022, the difference in individual county average ratings varied between -100% to +400%. In the aggregate, the average rating improved

by 18% for the 5-point PASER scale counties. In 2022, 20 counties reported having gravel pavements but did not rate them. There were 3,518 gravel miles not rated (Table 7). Nine counties reported no gravel miles.
In 2021 and 2022, most counties reported having no or very little concrete pavement. In 2022, 46 counties reported concrete pavement ranging from 0.1 to 69 miles. The average weighted rating for concrete pavements decreased by 2% for the 42 PASER-rated counties between 2021 and 2022 (Table 8). Among counties that use the PCI rating system, only Tippecanoe County rated these pavements in both years.

Figure 5. Weighted pavement ratings for concrete, asphalt, and chip seal pavements—2022
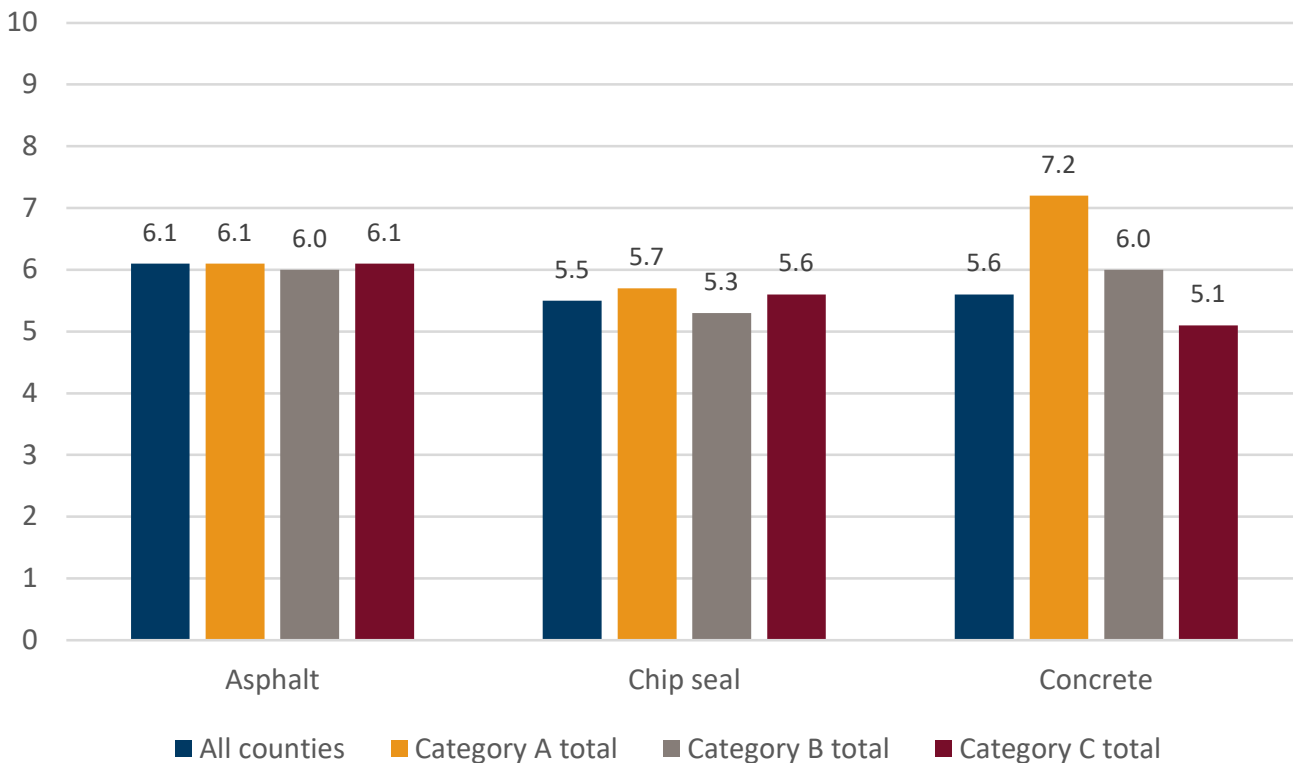
Sources: 2022 asset management plans; U.S. Census Bureau.

Notes:
1. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.
2. Five counties—Delaware, Gibson, Tippecanoe, Vanderburgh, and Warrick—used the PCI method to rate pavement surfaces. These counties are excluded.

Figure 6. Weighted pavement ratings for concrete, asphalt, and chip seal pavements—2021
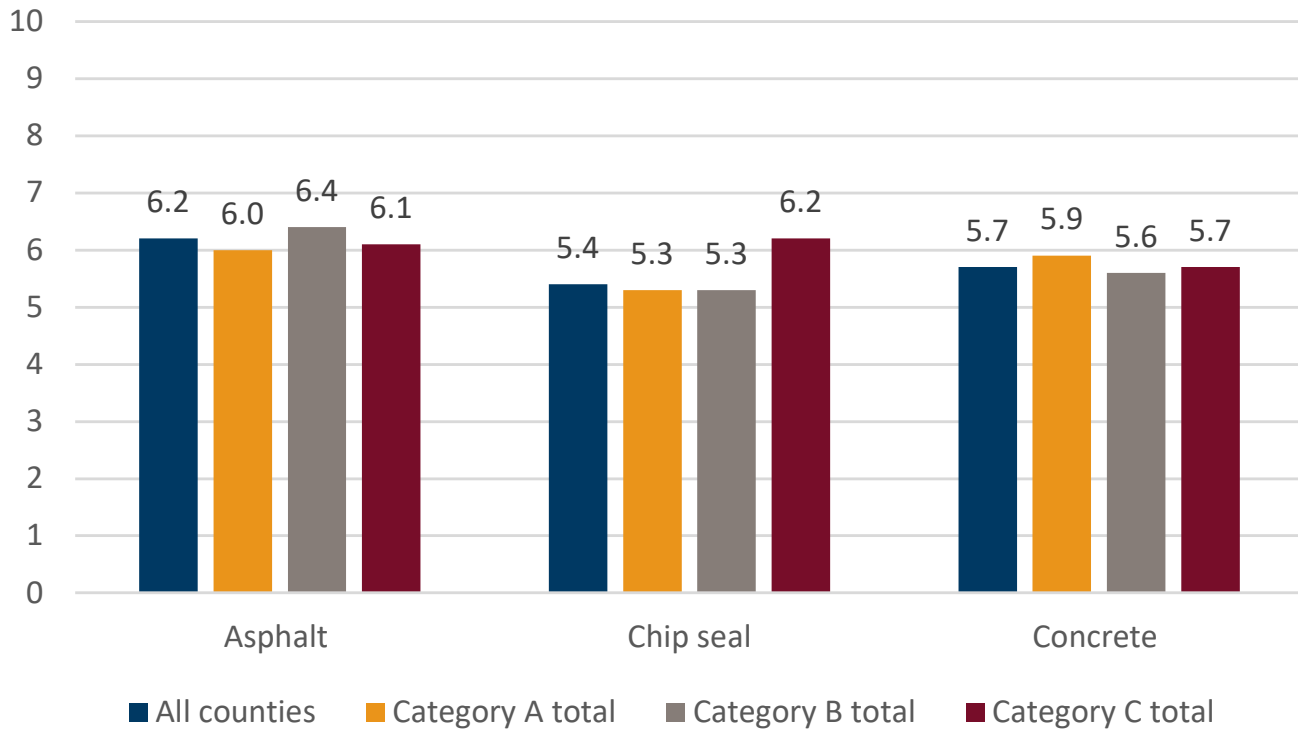
Sources: 2021 asset management plans; U.S. Census Bureau.

Notes:

1. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

2. Four counties—Delaware, Gibson, Tippecanoe, and Vanderburgh—used the PCI method to rate pavement surfaces. These counties are excluded.

Table 5. Asphalt pavement conditions—2021 and 2022

County	Population category	2022					2021	% change in weighted rating 2021–22
		Mileage	Poor (PASER 0-4)	Fair (PASER 5-7)	Good (PASER 8-10)	Weighted rating	Weighted rating	
Adams	B	111	63%	24%	13%	4.6	5.0	-8%
Allen	C	597	38%	32%	29%	5.8	5.8	0%
Bartholomew	C	637	1%	49%	50%	7.5	7.2	4.2%
Benton	A	0	NR	NR	NR	NR	NR	N/A
Blackford	A	102	16%	34%	50%	6.9	6.4	7.8%
Boone	C	408	13%	51%	36%	6.8	6.2	9.7%
Brown	A	265	6%	37%	57%	7.1	6.6	7.6%
Carroll	A	98	1%	54%	45%	7.4	7.6	-2.6%
Cass	B	102	0%	46%	54%	7.7	7.6	1.3%
Clark	C	508	31%	44%	25%	5.8	6.2	-6.5%
Clay	A	301	27%	32%	41%	6.4	6.6	-3%
Clinton	B	77	8%	32%	59%	7	6.7	4.5%
Crawford	A	222	6%	80%	14%	5.6	5.5	1.8%
Daviess	B	283	1%	63%	37%	7.4	7.2	2.8%
Dearborn	C	471	69%	17%	14%	4.1	3.8	7.9%
Decatur	A	568	33%	41%	26%	5.7	5.8	-1.7%
DeKalb	B	125	2%	25%	73%	8.2	7.1	15.5%
Delaware	C	792	54%	17%	29%	49 (PCI)	54 (PCI)	-9.3%
Dubois	B	384	7%	45%	48%	7.2	7.1	1.4%
Elkhart	C	1,056	3%	49%	48%	7.2	7.3	-1.4%
Fayette	A	93	16%	7%	77%	7.6	7.8	-2.6%
Floyd	C	351	17%	35%	48%	6.9	6.9	0%
Fountain	A	256	79%	12%	10%	4	3.4	17.6%
Franklin	A	600	25%	66%	9%	5.5	5.3	3.8%
Fulton	A	226	15%	75%	11%	5.8	5.8	0%
Gibson	B	185	9%	12%	80%	76 (PCI)	78 (PCI)	-2.6%
Grant	C	136	29%	43%	28%	6.2	6.2	0%
Greene	B	544	25%	58%	17%	5.6	5.9	-5.1%
Hamilton	C	339	0%	56%	44%	7.3	7.2	1.4%
Hancock	C	362	0%	89%	10%	7	6.8	2.9%
Harrison	B	829	2%	68%	31%	6.9	6.8	1.5%
Hendricks	C	602	40%	36%	24%	5.6	5.6	0%
Henry	B	457	69%	16%	15%	4	4.6	-13%
Howard	C	582	0%	26%	74%	7.8	7.8	0%
Huntington	B	613	21%	75%	4%	5.3	5.3	0%
Jackson	B	634	55%	31%	14%	4.7	4.6	2.2%
Jasper	B	184	14%	17%	68%	7.5	7.4	1.4%
Jay	A	499	1%	62%	37%	7.4	7.4	0%
Jefferson	B	315	23%	41%	36%	6.2	6.3	-1.6%
Jennings	A	492	3%	66%	31%	6.7	6.3	6.3%

Table 5. Asphalt pavement conditions—2021 and 2022 (continued)

| County | Population category | 2022 | | | | | 2021 | % change in weighted rating 2021–22 |
		Mileage	Poor (PASER 0-4)	Fair (PASER 5-7)	Good (PASER 8-10)	Weighted rating	Weighted rating	
Johnson	C	264	7%	67%	26%	6.6	5.8	13.8%
Knox	B	608	36%	34%	30%	5.7	5.4	5.6%
Kosciusko	C	1,066	25%	50%	24%	5.9	5.6	5.4%
LaGrange	B	167	37%	51%	12%	5.3	6.6	-19.7%
Lake	C	429	23%	30%	46%	6.5	6.7	-3%
La Porte	C	1,003	51%	28%	21%	4.9	5.0	-2%
Lawrence	B	572	19%	48%	33%	6.3	6.5	-3.1%
Madison	C	491	58%	33%	9%	4.6	5.1	-9.8%
Marshall	B	232	19%	30%	51%	6.9	6.9	0%
Martin	A	141	85%	4%	11%	3.4	3.2	6.2%
Miami	B	161	38%	41%	21%	5.1	5.3	-3.8%
Monroe	C	647	40%	41%	18%	5.3	5.6	-5.4%
Montgomery	B	129	50%	37%	13%	5.1	5.2	-1.9%
Morgan	C	519	6%	48%	46%	7.1	7.0	1.4%
Newton	A	184	4%	82%	15%	6.8	6.4	6.2%
Noble	B	234	0%	90%	10%	6.7	6.7	0%
Ohio	A	137	57%	22%	21%	5.2	4.7	10.6%
Orange	A	479	18%	55%	27%	6.2	6.6	-6.1%
Owen	A	434	51%	28%	21%	4.5	5.1	-11.8%
Parke	A	414	10%	55%	36%	7.2	7.0	2.9%
Perry	A	189	29%	8%	63%	7.2	6.5	10.8%
Pike	A	234	15%	26%	59%	7.2	7.0	2.9%
Porter	C	473	51%	36%	13%	4.7	4.5	4.4%
Posey	A	344	0%	24%	76%	8.3	7.4	12.2%
Pulaski	A	91	10%	56%	34%	6.7	6.1	9.8%
Putnam	B	157	14%	49%	37%	6.7	7.2	-6.9%
Randolph	A	837	45%	38%	17%	5.2	4.8	8.3%
Ripley	A	660	5%	48%	46%	7.2	7.0	2.9%
Rush	A	728	33%	20%	47%	6.3	6.4	-1.6%
St. Joseph	C	807	43%	41%	17%	5.0	4.8	4.2%
Scott	A	300	3%	73%	25%	6.7	6.5	3.1%
Shelby	B	769	37%	38%	25%	5.4	6.6	-18.2%
Spencer	A	361	1%	48%	51%	7.5	7.5	0%
Starke	A	565	38%	48%	14%	5.3	5.7	-7%
Steuben	B	400	17%	42%	41%	6.5	7.0	-7.1%
Sullivan	A	293	17%	37%	46%	6.8	6.5	4.6%
Switzerland	A	320	32%	55%	13%	5.4	5.4	0%
Tippecanoe	C	601	35%	27%	38%	62 (PCI)	66 (PCI)	-6.1%
Tipton	A	123	77%	21%	2%	3.2	3.3	-3%
Union	A	112	0%	30%	70%	7.8	7.6	2.6%

Table 5. Asphalt pavement conditions—2021 and 2022 (continued)

| County | Population category | 2022 | | | | | 2021 | % change in weighted rating 2021–22 |
		Mileage	Poor (PASER 0-4)	Fair (PASER 5-7)	Good (PASER 8-10)	Weighted rating	Weighted rating	
Vanderburgh	C	472	36%	22%	42%	63 (PCI)	63 (PCI)	0%
Vermillion	A	257	27%	46%	27%	6.1	6.0	1.7%
Vigo	C	405	19%	42%	39%	6.4	6.4	0%
Wabash	B	25	36%	7%	57%	6.9	6.8	1.5%
Warren	A	35	0%	0%	100%	7.4	8.9	-16.9%
Warrick	C	566	23%	22%	55%	68 (PCI)	6.5	N/A
Washington	A	713	45%	23%	32%	5.5	5.2	5.8%
Wayne	C	683	0%	80%	20%	6	6.1	-1.6%
Wells	A	17	0%	57%	43%	7.2	6.5	10.8%
White	A	489	50%	36%	15%	5	4.9	2%
Whitley	B	86	12%	40%	48%	6.8	7.0	-2.9%
90-county total	**N/A**	**35,829**	**28%**	**41%**	**32%**	**N/A**	**N/A**	**N/A**
85-county total (PASER)	**N/A**	**33,213**	**27%**	**42%**	**31%**	**6.1**	**6.2**	**-1.6%**
Category A total (PASER)	**N/A**	**12,179**	**26%**	**43%**	**32%**	**6.1**	**6.0**	**1.6%**
Category B total (PASER)	**N/A**	**8,198**	**25%**	**45%**	**29%**	**6.0**	**6.4**	**-6.6%**
Category C total (PASER)	**N/A**	**12,836**	**28%**	**40%**	**32%**	**6.1**	**6.1**	**0.0%**
Five-county total (PCI)	**N/A**	**2,616**	**37%**	**21%**	**42%**	**61 (PCI)**	**62 (PCI)**	**-1.6%**

Sources: 2021 and 2022 asset management plans; U.S. Census Bureau.

Notes:

1. Totals may equal slightly more or less than 100% due to rounding.
2. Benton County does not report any asphalt pavement inventory.
3. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.
4. Five counties—Delaware, Gibson, Tippecanoe, Vanderburgh, and Warrick—use the PCI method to rate pavement surfaces. Warrick County previously used PASER ratings. The PCI ratings are poor (0–54), fair (55–70), and good (71–100). All other counties with ratings use PASER ratings.

Table 6. Chip seal pavement conditions—2021 and 2022

| County | Population category | 2022 | | 2021 | % change in weighted rating 2021–22 |
		Mileage	Weighted rating	Weighted rating	
Adams	B	457	4.6	4.6	0%
Allen	C	606	5.8	6.5	-12%
Bartholomew	C	44	5.4	4.7	13%
Benton	A	338	6.7	6.8	-1%
Blackford	A	195	6.7	6.4	4%
Boone	C	3	6.5	5.2	20%
Brown	A	0	N/A	N/A	N/A
Carroll	A	478	6.5	6.8	-5%
Cass	B	664	6.7	6.5	3%
Clark	C	0	N/A	N/A	N/A
Clay	A	104	6.2	6.6	-6%
Clinton	B	451	5.1	4.6	10%
Crawford	A	39	4.3	4.2	2%
Daviess	B	53	7.5	7.6	-1%
Dearborn	C	1	3.0	3	0%
Decatur	A	0	N/A	N/A	N/A
DeKalb	B	295	6.4	5.3	17%
Delaware	C	0	N/A (PCI)	N/A (PCI)	N/A
Dubois	B	150	5.9	6.0	-2%
Elkhart	C	0	N/A	N/A	N/A
Fayette	A	276	5.2	5.9	-13%
Floyd	C	0	N/A	N/A	N/A
Fountain	A	53	4.4	2.3	48%
Franklin	A	0	N/A	N/A	N/A
Fulton	A	483	5.3	5.3	0%
Gibson	B	351	71 (PCI)	73 (PCI)	-3%
Grant	C	662	4.2	4.2	0%
Greene	B	0	N/A	N/A	N/A
Hamilton	C	214	7.6	8.2	-8%
Hancock	C	198	6.9	6.9	0%
Harrison	B	0	N/A	N/A	N/A
Hendricks	C	149	6.8	6.4	6%
Henry	B	270	3.4	3.7	-9%
Howard	C	0	N/A	N/A	N/A
Huntington	B	0	N/A	N/A	N/A
Jackson	B	0	N/A	N/A	N/A
Jasper	B	495	6.5	6.5	0%
Jay	A	0	N/A	N/A	N/A
Jefferson	B	70	4.0	6.3	-58%
Jennings	A	82	3.8	3.6	5%
Johnson	C	292	6.3	NR	N/A

Table 6. Chip seal pavement conditions—2021 and 2022 (continued)

| County | Population category | 2022 | | 2021 | % change in weighted rating 2021–22 |
		Mileage	Weighted rating	Weighted rating	
Knox	B	0	N/A	N/A	N/A
Kosciusko	C	0	N/A	N/A	N/A
LaGrange	B	427	5.1	5.4	-6%
Lake	C	62	7.7	8.1	-5%
La Porte	C	0	N/A	N/A	0%
Lawrence	B	3	6.6	5.2	21%
Madison	C	306	4.8	4.7	2%
Marshall	B	588	4.5	4.5	0%
Martin	A	25	3.3	3.3	0%
Miami	B	502	3.3	3.3	0%
Monroe	C	0	N/A	N/A	0%
Montgomery	B	390	4.2	3.1	26%
Morgan	C	148	6.2	5.9	5%
Newton	A	296	7.5	3.9	48%
Noble	B	504	6.8	6.7	1%
Ohio	A	0	N/A	N/A	N/A
Orange	A	30	5.3	4.7	11%
Owen	A	2	2.1	2.6	-24%
Parke	A	63	6.6	6.6	0%
Perry	A	53	6.0	6.2	-3%
Pike	A	12	4.0	3.9	3%
Porter	C	281	5.7	6.4	-12%
Posey	A	128	6.3	3.4	46%
Pulaski	A	464	6.6	6.3	5%
Putnam	B	356	5.9	5.9	0%
Randolph	A	0	N/A	7.2	N/A
Ripley	A	0	N/A	N/A	N/A
Rush	A	2	6.1	6.9	-13%
St. Joseph	C	171	3.4	3.3	3%
Scott	A	0	N/A	N/A	N/A
Shelby	B	38	5.8	7.2	-24%
Spencer	A	70	5.7	5.7	0%
Starke	A	31	5.8	5.7	2%
Steuben	B	37	6.1	6.5	-7%
Sullivan	A	75	4.7	4.6	2%
Switzerland	A	0	N/A	N/A	N/A
Tippecanoe	C	35	64 (PCI)	75 (PCI)	-17%
Tipton	A	423	2.3	2.3	0%
Union	A	114	5.7	4.5	21%
Vanderburgh	C	0	N/A (PCI)	N/A (PCI)	N/A
Vermillion	A	0	N/A	N/A	N/A

Table 6. Chip seal pavement conditions—2021 and 2022 (continued)

County	Population category	2022		2021	% change in weighted rating 2021–22
		Mileage	Weighted rating	Weighted rating	
Vigo	C	289	4.5	5.0	-11%
Wabash	B	676	5.3	5.0	6%
Warren	A	141	6.7	7.2	-7%
Warrick	C	31	86 (PCI)	10.0	N/A
Washington	A	0	N/A	N/A	N/A
Wayne	C	0	N/A	N/A	N/A
Wells	A	483	6.4	6.4	0%
White	A	142	7.0	6.4	9%
Whitley	B	408	5.5	3.1	44%
65-county total	**N/A**	**15,279**	**N/A**	**N/A**	**N/A**
62-county total (PASER)	**N/A**	**14,862**	**5.5**	**5.4**	**1.8%**
Category A total (PASER)	**N/A**	**4,602**	**5.8**	**5.3**	**9.4%**
Category B total (PASER)	**N/A**	**6,834**	**5.3**	**5.3**	**0%**
Category C total (PASER)	**N/A**	**3,426**	**5.5**	**6.2**	**-11.3%**
Three-county total (PCI)	**N/A**	**417**	**72 (PCI)**	**74 (PCI)**	**2.7%**

Sources: 2022 asset management reports; U.S. Census Bureau.

Notes:

1. N/A=Not applicable.

2. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

3. Delaware, Gibson, Tippecanoe, Vanderburgh, and Warrick counties use the PCI method to rate pavement surfaces in 2022. Warrick County previously used PASER ratings for chip seal pavements. The PCI ratings are poor (0–54), fair (55–70), and good (71–100). All other counties use PASER ratings.

Table 7. Gravel pavement conditions—2021 and 2022

| County | Population category | 2022 | | | 2021 | % change in weighted rating 2021–22 |
		Mileage	Scale	Weighted rating	Weighted rating	
Adams	B	95	5-pt	4.0	2.0	100%
Allen	C	87	10-pt	7.2	5.7	26%
Bartholomew	C	5	5-pt	3.2	3.4	-6%
Benton	A	323	10-pt	6.2	6.2	0%
Blackford	A	25	5-pt	4.0	4.0	0%
Boone	C	321	5-pt	4.1	4.0	2%
Brown	A	141	NR	NR	NR	N/A
Carroll	A	185	5-pt	6.4	3.4	88%
Cass	B	96	5-pt	7.0	7.0	0%
Clark	C	3	5-pt	2.7	1.5*	80%
Clay	A	278	NR	NR	NR	N/A
Clinton	B	249	10-pt	4.0	4.0	0%
Crawford	A	199	10-pt	3.5	3.0	17%
Daviess	B	428	NR	NR	NR	N/A
Dearborn	C	31	5-pt	2.5	2.5	0%
Decatur	A	74	NR	NR	NR	N/A
DeKalb	B	281	5-pt	4.0	4.0	0%
Delaware	C	0	PCI	N/A	N/A	N/A
Dubois	B	111	10-pt	5.9	6.1	-3%
Elkhart	C	53	5-pt	4.0	2.0	100%
Fayette	A	37	5-pt	4.0	4.0	0%
Floyd	C	0	N/A	N/A	N/A	N/A
Fountain	A	327	NR	NR	NR	N/A
Franklin	A	32	10-pt	4.3	4.4	-2%
Fulton	A	69	10-pt	5.1	5.1	0%
Gibson	B	357	PCI	NR	NR	N/A
Grant	C	0	N/A	N/A	N/A	N/A
Greene	B	372	5-pt	5.0	1.0	400%
Hamilton	C	1	10-pt	3.8	8.0	-53%
Hancock	C	19	10-pt	6.6	6.8	-3%
Harrison	B	27	10-pt	6.0	6.0	0%
Hendricks	C	0.3	5-pt	2.0	2.0	0%
Henry	B	65	5-pt	2.9	3.2	-9%
Howard	C	0	N/A	N/A	N/A	N/A
Huntington	B	3	10-pt	6.4	6.0	6%
Jackson	B	95	NR	NR	NR	N/A
Jasper	B	253	5-pt	4.0	4.0	0%
Jay	A	208	5-pt	2.0	2.0	0%
Jefferson	B	145	5-pt	2.2	2.0	10%
Jennings	A	94	10-pt	3.2	3.2	0%

Table 7. Gravel pavement conditions—2021 and 2022 (continued)

| County | Population category | 2022 | | | 2021 | % change in weighted rating 2021–22 |
		Mileage	Scale	Weighted rating	Weighted rating	
Johnson	C	0	N/A	N/A	N/A	N/A
Knox	B	240	5-pt	3.0	3.0	0%
Kosciusko	C	102	10-pt	6.9	6.8	1%
LaGrange	B	192	5-pt	3.0	1.0	200%
Lake	C	32	NR	NR	NR	N/A
La Porte	C	44	10-pt	5.6	5.2	8%
Lawrence	B	51	NR	NR	NR	N/A
Madison	C	1	5-pt	NR	NR	N/A
Marshall	B	3	10-pt	8.6	8.6	0%
Martin	A	195	5-pt	2.0	2.0	0%
Miami	B	117	10-pt	4.0	4.0	0%
Monroe	C	69	10-pt	4.0	6.2	-35%
Montgomery	B	299	5-pt	NR	3.0	N/A
Morgan	C	0	N/A	N/A	N/A	N/A
Newton	A	170	NR	NR	NR	N/A
Noble	B	75	10-pt	6.0	6.1	-2%
Ohio	A	6	5-pt	2.1	2.1	0%
Orange	A	78	5-pt	1.0	1.0	0%
Owen	A	203	NR	NR	NR	N/A
Parke	A	394	10-pt	5.5	5.4	2%
Perry	A	234	5-pt	3.0	3.0	0%
Pike	A	298	NR	NR	NR	N/A
Porter	C	7	10-pt	NR	4.6	N/A
Posey	A	218	NR	NR	NR	N/A
Pulaski	A	329	NR	NR	NR	N/A
Putnam	B	235	5-pt	1.0	NR	N/A
Randolph	A	13	5-pt	2.3	2.3	0%
Ripley	A	52	NR	NR	NR	N/A
Rush	A	18	5-pt	4.0	4	0%
St. Joseph	C	49	10-pt	3.8	4	-5%
Scott	A	7	5-pt	4.1	1.8*	14%
Shelby	B	0	N/A	N/A	N/A	N/A
Spencer	A	342	5-pt	1.0	2.8	-64%
Starke	A	75	10-pt	4.9	NR	N/A
Steuben	B	209	10-pt	3.5	3.5	0%
Sullivan	A	496	10-pt	3.0	3.0	0%
Switzerland	A	0	N/A	N/A	N/A	N/A
Tippecanoe	C	166	PCI	73	73	0%
Tipton	A	5	10-pt	2.3	2.3	0%
Union	A	38	10-pt	8.0	8.0	0%

Table 7. Gravel pavement conditions—2021 and 2022 (continued)

County	Population category	2022			2021	% change in weighted rating 2021–22
		Mileage	Scale	Weighted rating	Weighted rating	
Vanderburgh	C	0	PCI	N/A	N/A	N/A
Vermillion	A	138	5-pt	5.0	NR	N/A
Vigo	C	121	10-pt	3.0	3.4	-12%
Wabash	B	19	5-pt	4.0	4.0	0%
Warren	A	336	10-pt	6.0	6.0	0%
Warrick	C	158	PCI	NR	NR	N/A
Washington	A	84	5-pt	3.3	3.3	0%
Wayne	C	2	10-pt	6.5	6	8%
Wells	A	209	10-pt	5.8	5.8	0%
White	A	292	5-pt	2.6	2.6	0%
Whitley	B	75	5-pt	4.5	3	50%
63-county total	**N/A**	**8,068**	**N/A**	**N/A**	**N/A**	**N/A**
29-county total (10-point)	**N/A**	**3,558**	**10-pt**	**4.8**	**4.0**	**20%**
Category A	**N/A**	**2,270**		**4.9**	**3.8**	**29%**
Category B	**N/A**	**794**		**4.4**	**3.9**	**13%**
Category C	**N/A**	**494**		**5.1**	**5.3**	**4%**
34-county total (5-point)	**N/A**	**4,344**	**5-pt**	**3.3**	**2.8**	**18%**
Category A	**N/A**	**1,862**		**2.8**	**2.8**	**0%**
Category B	**N/A**	**2,068**		**3.9**	**2.7**	**33%**
Category C	**N/A**	**414**		**4.0**	**2.8**	**39%**
PCI rated	**N/A**	**166**	**N/A**	**73**	**73**	**0%**

Sources: 2022 asset management plans; U.S. Census Bureau.

Notes:

1. NR=Not reported or not rated; N/A=Not applicable.

2. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

3. Delaware, Gibson, Tippecanoe, Vanderburgh, and Warrick counties use the PCI method to rate gravel surfaces. Among them, only Tippecanoe County rated gravel pavements and is not included in the 5-pt and 10-pt ratings totals. The PCI ratings are poor (0–54), fair (55–70), good (71–100).

4. All other counties that rate their gravel roads use a 5-point PASER scale or a similar 10-point scale. The source of the 10-point scale is unknown.

5. *Two counties appear to have adjusted the scale they are utilizing between 2021 and 2022. For these, the project team adjusted the 2021 rating proportionally.

Table 8. Concrete pavement conditions—2021 and 2022

County	Population category	2022		2021	% change in weighted rating 2021–22
		Mileage	Weighted rating	Weighted rating	
Adams	B	0.0	N/A	NR	N/A
Allen	C	32.0	6.5	7.2	-10%
Bartholomew	C	0.6	5.0	5.0	0%
Benton	A	0.0	N/A	N/A	N/A
Blackford	A	0.0	N/A	N/A	N/A
Boone	C	0.1	4.0	NR	N/A
Brown	A	0.0	N/A	N/A	N/A
Carroll	A	0.0	N/A	N/A	N/A
Cass	B	2.3	7.8	7.5	4%
Clark	C	1.3	7.8	5.6	39%
Clay	A	0.0	N/A	N/A	N/A
Clinton	B	0.5	6.0	6.0	0%
Crawford	A	0.0	N/A	NR	N/A
Daviess	B	14.0	8.2	8.2	0%
Dearborn	C	0.1	1.0	1.0	0%
Decatur	A	3.0	8.0	8.0	0%
DeKalb	B	2.0	7.9	7.8	1%
Delaware	C	9.0	65 (PCI)	NR	N/A
Dubois	B	0.0	N/A	N/A	N/A
Elkhart	C	15.0	6.5	6.6	-2%
Fayette	A	0.0	N/A	NR	N/A
Floyd	C	0.3	7.0	7.0	0%
Fountain	A	0.0	N/A	NR	N/A
Franklin	A	1.0	5.7	9.0	-37%
Fulton	A	0.5	7.2	7.2	0%
Gibson	B	0.0	N/A (PCI)	N/A (PCI)	N/A
Grant	C	0.0	N/A	N/A	N/A
Greene	B	0.1	7.0	NR	N/A
Hamilton	C	2.0	7.1	7.3	-3%
Hancock	C	0.3	6.0	8	-25%
Harrison	B	0.0	N/A	N/A	N/A
Hendricks	C	3.0	5.8	5.9	-2%
Henry	B	1.0	3.4	3.4	0%
Howard	C	1.0	7.4	7.4	0%
Huntington	B	2.0	7.1	7.0	1%
Jackson	B	0.0	N/A	N/A	N/A
Jasper	B	0.0	N/A	N/A	N/A
Jay	A	25.0	8.0	8.0	0%
Jefferson	B	0.0	N/A	N/A	N/A
Jennings	A	0.0	N/A	N/A	N/A
Johnson	C	22.0	5.3	3.9	36%

Table 8. Concrete pavement conditions—2021 and 2022 (continued)

County	Population category	2022		2021	% change in weighted rating 2021–22
		Mileage	Weighted rating	Weighted rating	
Knox	B	7.0	3.6	4.3	-16%
Kosciusko	C	1.0	6.2	6.7	-7%
LaGrange	B	0.0	N/A	N/A	N/A
Lake	C	0.0	N/A	N/A	N/A
La Porte	C	0.1	3.0	NR	N/A
Lawrence	B	0.3	6.0	7.0	-14%
Madison	C	69.0	3.8	3.7	3%
Marshall	B	0.6	5.3	5.3	0%
Martin	A	0.0	N/A	N/A	N/A
Miami	B	0.0	N/A	N/A	N/A
Monroe	C	0.0	N/A	N/A	N/A
Montgomery	B	0.0	N/A	N/A	N/A
Morgan	C	0.0	N/A	N/A	N/A
Newton	A	0.0	N/A	N/A	N/A
Noble	B	0.4	6.5	5.0	30%
Ohio	A	0.0	N/A	N/A	N/A
Orange	A	0.0	N/A	N/A	N/A
Owen	A	0.0	N/A	N/A	N/A
Parke	A	0.0	N/A	N/A	N/A
Perry	A	0.0	N/A	N/A	N/A
Pike	A	0.2	6.0	6.0	0%
Porter	C	0.1	2.8	3.2	-13%
Posey	A	0.6	6.9	7.7	-10%
Pulaski	A	0.0	N/A	N/A	N/A
Putnam	B	3.0	2.2	3.8	-42%
Randolph	A	0.0	N/A	NR	N/A
Ripley	A	0.0	N/A	NR	N/A
Rush	A	0.0	N/A	3.0	N/A
St. Joseph	C	12.0	5.8	6.2	-6%
Scott	A	0.0	N/A	N/A	N/A
Shelby	B	0.7	4.4	4.8	-8%
Spencer	A	0.0	N/A	N/A	N/A
Starke	A	0.1	3.0	NR	N/A
Steuben	B	0.0	N/A	NR	N/A
Sullivan	A	0.5	4.0	4.0	0%
Switzerland	A	0.0	N/A	N/A	N/A
Tippecanoe	C	38.0	89 (PCI)	78 (PCI)	14%
Tipton	A	1.0	4.5	4.5	0%
Union	A	0.0	N/A	N/A	N/A
Vanderburgh	C	45.0	79 (PCI)	NR	N/A
Vermillion	A	0.0	N/A	N/A	N/A

Table 8. Concrete pavement conditions—2021 and 2022 (continued)

| County | Population category | 2022 | | 2021 | % change in weighted rating 2021–22 |
		Mileage	Weighted rating	Weighted rating	
Vigo	C	12.0	5.8	5.4	7%
Wabash	B	2.0	2.0	2.0	0%
Warren	A	0.0	N/A	4.0	N/A
Warrick	C	36.0	70 (PCI)	6.4	N/A
Washington	A	0.0	N/A	N/A	N/A
Wayne	C	0.0	N/A	N/A	N/A
Wells	A	0.0	N/A	N/A	N/A
White	A	0.0	N/A	N/A	N/A
Whitley	B	1.0	6.1	5.7	7%
46-county total	**N/A**	**369**	**N/A**	**N/A**	**N/A**
42-county total (PASER)	**N/A**	**241**	**5.6**	**5.7**	**-1.7%**
Category A total	**N/A**	**32**	**7.7**	**5.9**	**30.5%**
Category B total	**N/A**	**37**	**6.0**	**5.6**	**7.1%**
Category C total	**N/A**	**172**	**5.1**	**5.7**	**-10.5%**
4-county total (PCI)	**N/A**	**128**	**78**	**80**	**-2.5%**

Sources: 2021 and 2022 asset management plans; U.S. Census Bureau.

Notes:

1. NR=Not reported or not rated; N/A=Not applicable.

2. Because the inventory of gravel pavements is less than one mile for several counties, the inventory is reported to the tenth of a mile.

3. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

4. Delaware, Gibson, Tippecanoe, Vanderburgh, and Warrick counties use the PCI method to rate pavements. The PCI ratings are poor (0-54), fair (55-70), and good (71-100). Gibson County does not report any concrete pavement. Only Tippecanoe County rated concrete pavements for both 2021 and 2022. All other counties use PASER ratings.

Table 9. Counties with poor weighted average by pavement

| | Asphalt—Poor ≤ 4(PASER) OR < 54 (PCI) | | Chip Seal—Poor ≤ 4 (PASER) OR < 54 (PCI) | | Gravel—Poor ≤ 2 (PASER) OR < 54 (PCI) | | Concrete—Poor ≤ 4 (PASER) OR < 54 (PCI) | | Counties with one or more pavement types with an average poor rating | |
	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
91-county total	4	5	13	10	20	18	10	9	37	33
Category A total	3	3	6	5	7	9	3	1	14	14
Category B total	0	1	5	3	8	4	3	4	12	9
Category C total	1	1	2	2	5	5	4	4	11	10

Sources: 2022 asset management plans; U.S. Census Bureau.

Notes:

1. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

2. Only counties that use a 5-point PASER rating scale for gravel are included here. In 2021, 29 counties rated gravel on a 5-point scale compared to 34 in 2022. The source of a 10-point rating scale is unknown.

Roads treated

Local governments use a variety of treatment options to preserve and to address the deterioration of pavements. These treatments range from full reconstruction to a variety of maintenance activities.[5] The expanded resources available to local governments during the past several years through expanded Motor Vehicle Highway (MVH) and Local Roads and Streets (LRS) distributions as well as Community Crossing Matching Grants should allow local governments generally to treat more lane miles. An asset-management network approach also contributes to the effective use of local resources in improving and maintaining the local road network.

Counties reported treating 7,610 miles of pavement in 2022 compared to 8,172 miles in 2021, a decrease of 560 center-line miles or 7% (Tables 10–12). Table 10 shows the percentage of miles each county reported treating in 2022 by the pavement type. Table 11 shows the same summary information for 2021. Table 12 compares the miles of pavement treated in 2021 and 2022.

The percentages of pavement miles treated varied in 2021 and 2022 by size of county. In 2022, counties reported treating a 12% of pavement miles across pavement types compared to 13% in 2021. Treatment mileage increased for Category B counties but decreased slightly for Category A counties and more substantially for Category C counties. Category A counties reported treating 13% of pavement miles in 2022 and 14% in 2021. Category B counties reported treating 11% in 2022 and only 9% in 2021. Category C counties reported treating 12% of pavement miles in 2022 compared to 16% in 2021.

In the aggregate across counties, treatment levels also were similar for asphalt, concrete, and gravel pavements in 2021 and 2022. Counties reported treating 16% of asphalt pavement miles in 2022 compared to 17% in 2021; 3% of concrete miles in 2022 compared to 2% in 2021; and 2% of gravel miles in 2022 compared to 1% in 2021. The treatment mileage for chip seal was the least similar among pavement types with 11% in 2022 and 14% in 2021.

Treatment data should be considered in the context of local road conditions over time. Many factors affect the differences in mileage of pavement treated from year to year, including local asset management planning, the exact mix and costs of treatment, the extent and mix of resources available, and the robustness of treatment data.

The management of local road networks is a long-term process. Local government programming may vary from year to year. Local governments also must react as immediate challenges arise. Preparing for and reacting to winter and other types of extreme weather events is likely to use increasing amounts of resources on average over time.

The mix of treatments needed varies within and across counties. Full reconstruction typically is more expensive than resurfacing. It is difficult, however, to assess the relative value of work completed from existing data because it is influenced by many factors. While it is likely that local governments experienced some inflationary pressures in 2021 and 2022, the INDOT unit-price databases suggest a wide range of unit costs for similar treatments.

During the analysis, the research team also identified some extreme data discrepancies. For example, Decatur County reported treating 100% of its 568 miles of asphalt pavements, and Scott County reported treating 98% of 300 miles of asphalt pavements. On the other end, nine counties reported treating no pavements. This may reflect varied interpretations among counties about the definition of treatment as well as overestimates of the amounts of pavement to which treatments were applied. Clarification is needed to ensure data is reported consistently across counties.

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[5] A list of treatment options appears in Appendix A: Methodology.

Table 10. Miles of pavement treated by type—2022

County	Pop. category	Total		Asphalt		Chip seal		Gravel		Concrete	
		Rated miles	% treated	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated
Adams	B	669	16%	111	15%	457	16%	95	15%	0.0	0%
Allen	C	1,322	12%	597	6%	606	20%	87	0%	32.0	6%
Bartholomew	C	686	15%	637	16%	44	11%	5	0%	0.6	0%
Benton	A	662	51%	0	0%	338	100%	323	0%	0.0	0%
Blackford	A	321	8%	102	13%	195	7%	25	0%	0.0	0%
Boone	C	733	16%	408	28%	3	33%	321	0%	0.1	0%
Brown	A	406	10%	265	16%	0	0%	141	0%	0.0	0%
Carroll	A	762	8%	98	11%	478	10%	185	0%	0.0	0%
Cass	B	864	7%	102	9%	664	8%	96	0%	2.3	0%
Clark	C	513	7%	508	7%	0	0%	3	0%	1.3	8%
Clay	A	686	7%	301	13%	104	9%	278	0%	0.0	0%
Clinton	B	778	5%	77	6%	451	7%	249	1%	0.5	0%
Crawford	A	462	7%	222	5%	39	3%	199	10%	0.0	0%
Daviess	B	781	7%	283	14%	53	26%	428	0%	14.0	0%
Dearborn	C	503	7%	471	8%	1	0%	31	0%	0.1	0%
Decatur	A	645	88%	568	100%	0	0%	74	0%	3.0	0%
DeKalb	B	704	4%	125	20%	295	2%	281	0%	2.0	0%
Delaware	C	802	7%	792	7%	0	0%	0	0%	9.0	11%
Dubois	B	662	19%	384	15%	150	44%	111	0%	0.0	0%
Elkhart	C	1,124	12%	1,056	13%	0	0%	53	0%	15.0	0%
Fayette	A	406	0%	93	1%	276	0%	37	0%	0.0	0%
Floyd	C	351	0%	351	0%	0	0%	0	0%	0.3	0%
Fountain	A	636	6%	256	9%	53	28%	327	0%	0.0	0%
Franklin	A	633	11%	600	11%	0	0%	32	9%	1.0	0%
Fulton	A	778	12%	226	6%	483	17%	69	1%	0.5	0%
Gibson	B	914	8%	185	5%	351	16%	357	2%	0.0	0%
Grant	C	798	0%	136	0%	662	0%	0	0%	0.0	0%
Greene	B	916	4%	544	6%	0	0%	372	0%	0.1	0%
Hamilton	C	555	13%	339	6%	214	24%	1	0%	2.0	0%
Hancock	C	653	0%	362	0%	198	0%	19	0%	0.3	0%
Harrison	B	856	18%	829	18%	0	0%	27	0%	0.0	0%
Hendricks	C	754	10%	602	12%	149	0%	0	0%	3.0	0%
Henry	B	792	7%	457	9%	270	2%	65	12%	1.0	0%
Howard	C	584	4%	582	4%	0	0%	0	0%	1.0	0%
Huntington	B	617	10%	613	10%	0	0%	3	0%	2.0	0%
Jackson	B	729	94%	634	93%	0	0%	95	100%	0.0	0%
Jasper	B	932	10%	184	19%	495	11%	253	0%	0.0	0%
Jay	A	732	12%	499	18%	0	0%	208	0%	25.0	0%
Jefferson	B	530	14%	315	23%	70	4%	145	0%	0.0	0%
Jennings	A	667	4%	492	6%	82	2%	94	0%	0.0	0%

Table 10. Miles of pavement treated by type—2022 (continued)

County	Pop. category	Total		Asphalt		Chip seal		Gravel		Concrete	
		Rated miles	% treated	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated
Johnson	C	586	8%	264	12%	292	5%	0	0%	22.0	0%
Knox	B	855	6%	608	8%	0	0%	240	0%	7.0	0%
Kosciusko	C	1,169	9%	1,066	10%	0	0%	102	0%	1.0	0%
LaGrange	B	785	0%	167	0%	427	0%	192	0%	0.0	0%
Lake	C	522	0%	429	0%	62	0%	32	0%	0.0	0%
La Porte	C	1,058	6%	1,003	6%	0	0%	44	0%	0.1	0%
Lawrence	B	625	4%	572	5%	3	0%	51	0%	0.3	0%
Madison	C	867	0%	491	0%	306	0%	1	0%	69.0	0%
Marshall	B	824	0%	232	0%	588	0%	3	0%	0.6	0%
Martin	A	361	3%	141	7%	25	0%	195	1%	0.0	0%
Miami	B	780	2%	161	4%	502	2%	117	0%	0.0	0%
Monroe	C	716	63%	647	67%	0	0%	69	25%	0.0	0%
Montgomery	B	817	0%	129	0%	390	0%	299	0%	0.0	0%
Morgan	C	667	4%	519	3%	148	7%	0	0%	0.0	0%
Newton	A	650	9%	184	1%	296	19%	170	0%	0.0	0%
Noble	B	813	15%	234	18%	504	15%	75	0%	0.4	0%
Ohio	A	143	11%	137	12%	0	0%	6	0%	0.0	0%
Orange	A	587	7%	479	8%	30	7%	78	0%	0.0	0%
Owen	A	639	46%	434	65%	2	100%	203	3%	0.0	0%
Parke	A	883	0%	414	0%	63	0%	394	0%	0.0	0%
Perry	A	476	3%	189	3%	53	11%	234	0%	0.0	0%
Pike	A	543	3%	234	7%	12	0%	298	0%	0.2	0%
Porter	C	782	5%	473	8%	281	0%	7	0%	0.1	0%
Posey	A	691	6%	344	10%	128	6%	218	0%	0.6	0%
Pulaski	A	884	6%	91	30%	464	5%	329	0%	0.0	0%
Putnam	B	752	9%	157	10%	356	15%	235	0%	3.0	0%
Randolph	A	850	10%	837	10%	0	0%	13	46%	0.0	0%
Ripley	A	713	14%	660	15%	0	0%	52	4%	0.0	0%
Rush	A	747	10%	728	10%	2	0%	18	0%	0.0	0%
St. Joseph	C	1,040	5%	807	5%	171	8%	49	2%	12.0	0%
Scott	A	306	98%	300	98%	0	0%	7	100%	0.0	0%
Shelby	B	808	6%	769	6%	38	18%	0	0%	0.7	0%
Spencer	A	774	5%	361	11%	70	1%	342	0%	0.0	0%
Starke	A	671	10%	565	11%	31	6%	75	0%	0.1	0%
Steuben	B	645	1%	400	2%	37	0%	209	0%	0.0	0%
Sullivan	A	867	3%	293	8%	75	1%	496	1%	0.5	0%
Switzerland	A	320	1%	320	1%	0	0%	0	0%	0.0	0%
Tippecanoe	C	844	5%	601	7%	35	3%	166	0%	38.0	5%
Tipton	A	552	17%	123	18%	423	17%	5	0%	1.0	0%
Union	A	264	13%	112	4%	114	23%	38	5%	0.0	0%
Vanderburgh	C	518	8%	472	8%	0	0%	0	0%	45.0	7%

Table 10. Miles of pavement treated by type—2022 (continued)

County	Pop. category	Total		Asphalt		Chip seal		Gravel		Concrete	
		Rated miles	% treated	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated
Vermillion	A	395	14%	257	22%	0	0%	138	0%	0.0	0%
Vigo	C	828	9%	405	5%	289	17%	121	2%	12.0	8%
Wabash	B	723	8%	25	8%	676	8%	19	0%	2.0	0%
Warren	A	512	3%	35	37%	141	0%	336	0%	0.0	0%
Warrick	C	791	6%	566	6%	31	32%	158	0%	36.0	3%
Washington	A	797	5%	713	5%	0	0%	84	0%	0.0	0%
Wayne	C	685	82%	683	82%	0	0%	2	100%	0.0	0%
Wells	A	709	12%	17	35%	483	16%	209	0%	0.0	0%
White	A	923	9%	489	2%	142	51%	292	0%	0.0	0%
Whitley	B	587	24%	86	13%	408	13%	75	99%	1.0	0%
91-county total	**N/A**	**63,262**	**12%**	**35,829**	**16%**	**15,279**	**11%**	**11,351**	**2%**	**369**	**3%**
Category A total	**N/A**	**23,053**	**13%**	**12,179**	**18%**	**4,602**	**19%**	**5,988**	**1%**	**32.0**	**0%**
Category B total	**N/A**	**19,758**	**11%**	**8,383**	**16%**	**7,185**	**9%**	**4,092**	**5%**	**37.0**	**0%**
Category C total	**N/A**	**20,451**	**12%**	**15,267**	**13%**	**3,492**	**8%**	**1,271**	**2%**	**300**	**3%**

Sources: 2022 asset management plans; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 11. Miles of pavement treated by type—2021

	Total		Asphalt		Chip seal		Gravel		Concrete	
	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated	Rated miles	% treated
91-county total	62,772	13%	35,392	17%	15,374	14%	11,628	1%	378	2%
Category A total	23,992	14%	12,788	17%	4,841	16%	6,316	2%	47	0%
Category B total	19,522	9%	8,055	11%	7,372	11%	4,050	2%	45	1%
Category C total	19,258	16%	14,549	18%	3,161	17%	1,262	3%	286	3%

Source: 2021 asset management plans; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 12. Miles of pavement treated—2021 and 2022

|	2021	2022	Difference	% change
91-county total	8,172	7,610	-562	-7%
Category A total	3,259	3,077	-182	-6%
Category B total	1,709	2,168	459	27%
Category C total	3,204	2,365	-839	-26%

Sources: 2021 and 2022 asset management plans; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Spending and revenue

The analysis of revenue and spending comes primarily from 2020 and 2021 operational reports.[6] Table 13 shows the 2021 operational spending reported by counties for selected activities. Spending generally increases by year and as the population increases (Figure 7). This is, in part, due to fuel taxes being distributed principally based on number of vehicles and regular increases built into fuel tax collections.

The average percentage of spending for construction, reconstruction, and preservation varied by size of county. Category C counties reported spending on average 61%, while Category A counties reported 52%, and Category B counties reported 49% (Figure 8). Category A counties reported spending a higher percentage on administration and unallocated than counties in the other two categories. Category B counties reported spending a greater percentage on winter operations, and other maintenance and repair than counties in the other two categories. The percentages shown for each type of operations spending by population category varies slightly across 2020 and 2021 (Figures 8 and 9).
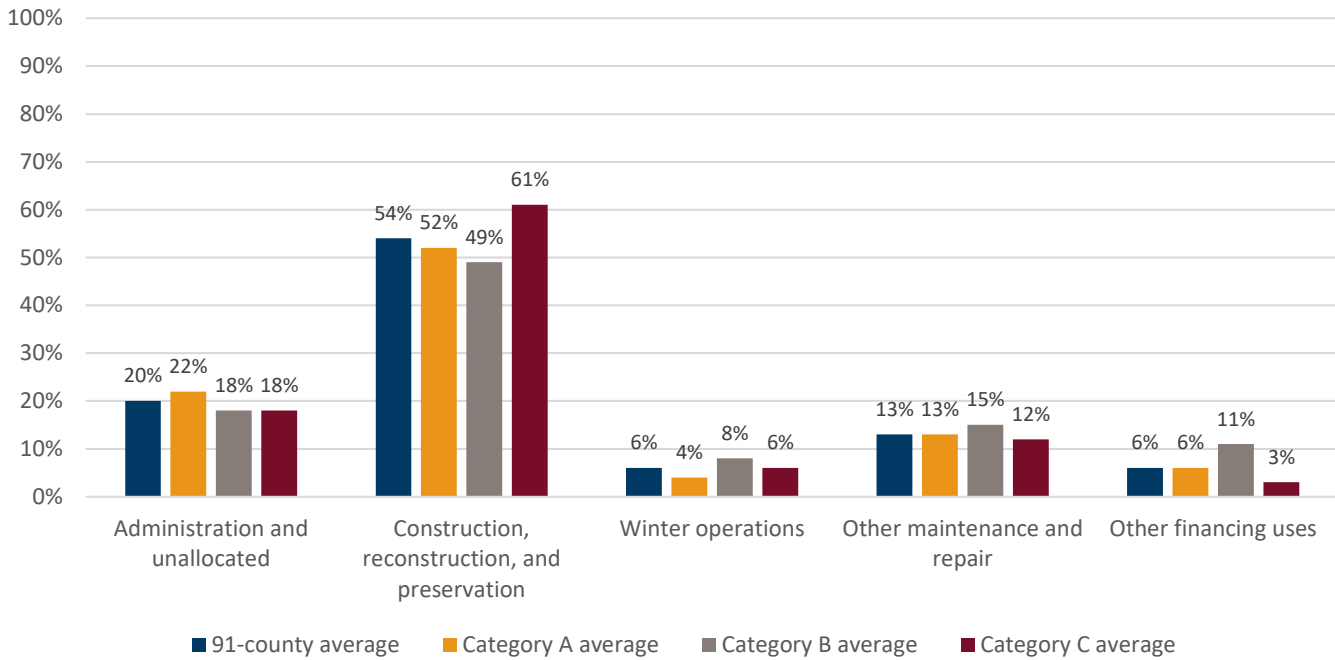
Figure 7. Average county road and bridge spending by population category—2020 and 2021
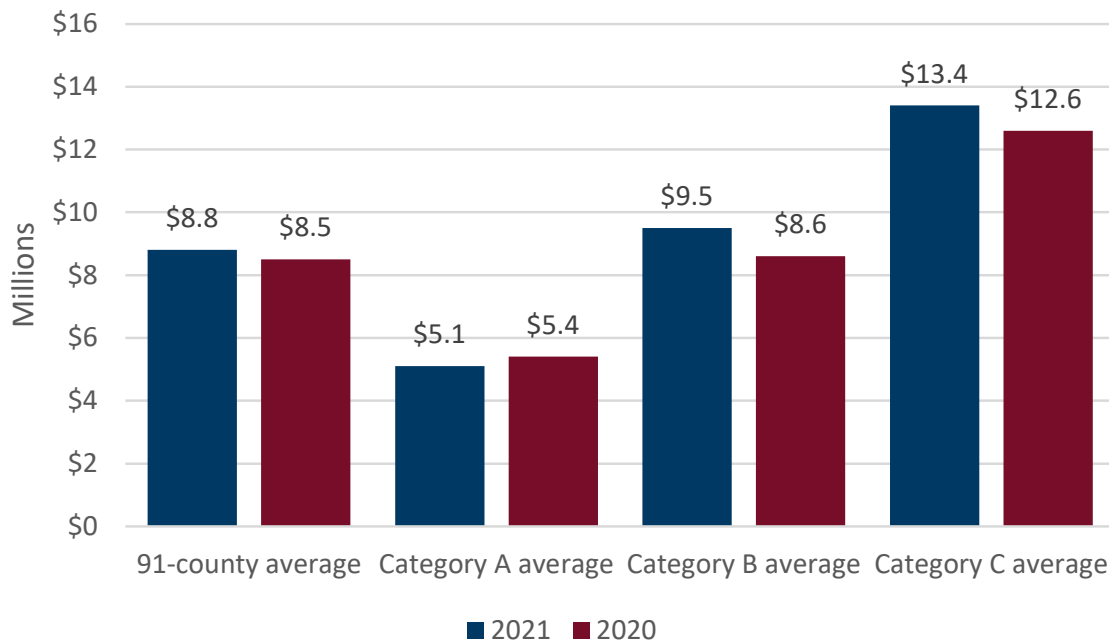
Sources: 2021 and 2020 annual operational reports; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

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[6] The 2022 annual operational reports will not be available until the second half of 2023.

Figure 8. Average percentage of county road and bridge spending by activity and population category—2021

Legend: ■ 91-county average ■ Category A average ■ Category B average ■ Category C average

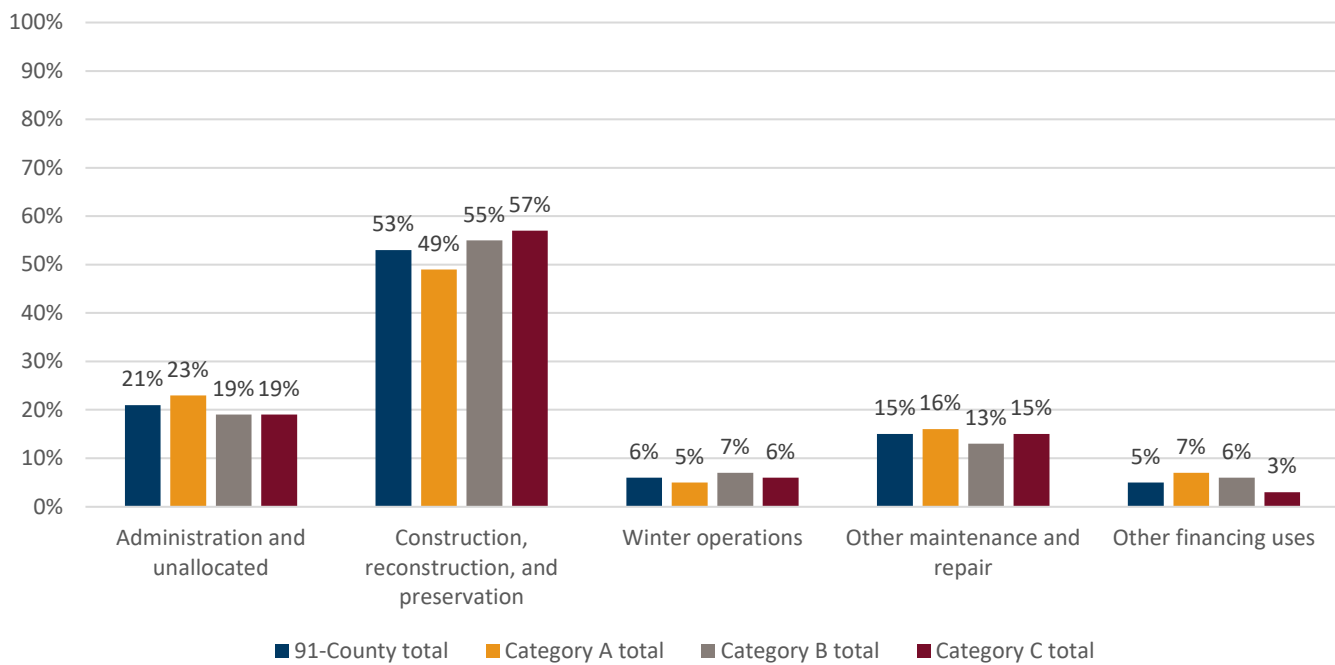| Activity	91-county average	Category A average	Category B average	Category C average
Administration and unallocated	20%	22%	18%	18%
Construction, reconstruction, and preservation	54%	52%	49%	61%
Winter operations	6%	4%	8%	6%
Other maintenance and repair	13%	13%	15%	12%
Other financing uses	6%	6%	11%	3%

Sources: 2021 annual operational reports; U.S. Census Bureau.

Notes:

1. Percentages may not add to 100% due to rounding.
2. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.
3. Crawford County reported spending differentiating by type of spending. For this reason, Crawford County is not included in the county averages.

Figure 9. Average percentage of county road and bridge spending by activity and population category—2020

Legend: ■ 91-County total ■ Category A total ■ Category B total ■ Category C total

Activity	91-County total	Category A total	Category B total	Category C total
Administration and unallocated	21%	23%	19%	19%
Construction, reconstruction, and preservation	53%	49%	55%	57%
Winter operations	6%	5%	7%	6%
Other maintenance and repair	15%	16%	13%	15%
Other financing uses	5%	7%	6%	3%

Sources: 2020 annual operational reports; U.S. Census Bureau.

Notes:

1. Percentages may not add to 100% due to rounding.
2. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 13. Percentage of road and bridge spending by activity—2021

County	Population category	Total operational spending	Adminis-tration and unallocated	Construction, reconstruction, and preservation	Winter operations	Other maintenance and repair	Other financing uses
Adams	B	$ 5,292,683	39%	25%	5%	7%	24%
Allen	C	$30,007,611	24%	56%	3%	11%	6%
Bartholomew	C	$8,551,896	5%	60%	9%	16%	11%
Benton	A	$3,529,144	4%	96%	0%	0%	0%
Blackford	A	$1,972,503	17%	70%	7%	6%	0%
Boone	C	$10,324,394	15%	76%	2%	2%	6%
Brown	A	$4,121,872	13%	66%	7%	14%	0%
Carroll	A	$4,450,700	43%	24%	6%	27%	0%
Cass	B	$6,745,645	20%	53%	3%	24%	0%
Clark	C	$9,152,715	25%	53%	0%	11%	11%
Clay	A	$5,645,781	26%	70%	1%	1%	3%
Clinton	B	5,880,679	59%	24%	17%	0%	0%
Crawford	A	$3,134,073	–	–	–	–	–
Daviess	B	$12,025,353	0%	62%	1%	20%	17%
Dearborn	C	$10,931,630	17%	67%	7%	0%	8%
Decatur	A	$5,900,141	22%	33%	23%	7%	15%
DeKalb	B	$5,972,878	8%	36%	24%	31%	0%
Delaware	C	$10,701,174	6%	68%	18%	8%	1%
Dubois	B	$58,352,590	1%	8%	0%	3%	89%
Elkhart	C	$16,961,303	16%	56%	9%	19%	0%
Fayette	A	$4,163,017	3%	83%	1%	12%	2%
Floyd	C	$4,851,466	1%	16%	27%	56%	0%
Fountain	A	$4,270,289	10%	77%	1%	6%	6%
Franklin	A	$7,427,341	15%	53%	3%	13%	15%
Fulton	A	$4,478,475	5%	57%	2%	23%	14%
Gibson	B	$5,444,790	5%	37%	0%	57%	0%
Grant	C	$7,236,496	31%	68%	1%	0%	0%
Greene	B	$6,302,577	15%	70%	2%	9%	5%
Hamilton	C	$34,913,734	13%	62%	2%	1%	22%
Hancock	C	$4,641,820	28%	68%	3%	2%	0%
Harrison	B	$13,550,339	36%	46%	2%	3%	13%
Hendricks	C	$16,605,895	30%	67%	2%	1%	0%
Henry	B	$8,470,714	2%	79%	2%	17%	0%
Howard	C	$5,235,312	8%	74%	10%	7%	0%
Huntington	B	$5,739,984	4%	49%	3%	42%	3%
Jackson	B	$5,376,965	22%	72%	5%	1%	0%
Jasper	B	$20,132,176	1%	22%	2%	5%	70%
Jay	A	$4,464,325	5%	48%	22%	25%	0%
Jefferson	B	$5,771,473	31%	63%	1%	5%	0%
Jennings	A	$5,015,455	40%	55%	1%	4%	0%

Table 13. Percentage of road and bridge spending by activity—2021 (continued)

County	Population category	Total operational spending	Adminis- tration and unallocated	Construction, reconstruction, and preservation	Winter operations	Other maintenance and repair	Other financing uses
Johnson	C	$9,446,304	17%	70%	3%	10%	0%
Knox	B	$6,098,105	16%	67%	1%	16%	0%
Kosciusko	C	$9,526,432	3%	69%	6%	19%	3%
LaGrange	B	$7,928,049	3%	39%	0%	23%	35%
Lake	C	$23,399,459	9%	71%	8%	12%	0%
La Porte	C	$16,705,502	40%	58%	1%	1%	0%
Lawrence	B	$7,220,422	26%	69%	3%	2%	0%
Madison	C	$6,026,986	21%	48%	11%	20%	0%
Marshall	B	$8,863,624	10%	1%	72%	2%	15%
Martin	A	$4,393,767	29%	13%	10%	48%	0%
Miami	B	$5,213,938	4%	51%	25%	21%	0%
Monroe	C	$29,871,185	13%	72%	2%	7%	6%
Montgomery	B	$6,976,620	32%	58%	2%	8%	0%
Morgan	C	$7,438,106	34%	49%	2%	15%	0%
Newton	A	$5,319,517	2%	46%	8%	29%	15%
Noble	B	$7,950,610	11%	59%	5%	18%	7%
Ohio	A	$1,793,745	8%	82%	10%	0%	0%
Orange	A	$5,361,000	19%	62%	1%	11%	7%
Owen	A	$5,401,110	28%	66%	1%	6%	0%
Parke	A	$4,858,825	5%	61%	22%	12%	0%
Perry	A	$4,900,024	8%	63%	1%	22%	6%
Pike	A	$3,260,497	30%	70%	0%	0%	0%
Porter	C	$12,465,396	12%	63%	10%	15%	0%
Posey	A	$8,674,140	38%	60%	0%	0%	2%
Pulaski	A	$2,912,757	81%	17%	2%	0%	0%
Putnam	B	$6,936,919	38%	52%	2%	7%	0%
Randolph	A	$5,339,373	12%	80%	1%	3%	4%
Ripley	A	$3,671,069	11%	76%	1%	12%	0%
Rush	A	$20,059,566	5%	14%	0%	1%	79%
St. Joseph	C	$18,851,659	21%	35%	12%	27%	6%
Scott	A	$2,036,330	49%	33%	0%	3%	15%
Shelby	B	$6,425,470	16%	70%	4%	10%	0%
Spencer	A	$7,062,380	13%	28%	2%	57%	0%
Starke	A	$3,481,707	34%	45%	9%	12%	0%
Steuben	B	$8,674,508	23%	50%	2%	16%	8%
Sullivan	A	$10,103,325	53%	32%	0%	0%	15%
Switzerland	A	$2,300,340	26%	49%	3%	17%	6%
Tippecanoe	C	$12,583,927	29%	45%	5%	18%	2%
Tipton	A	$3,280,595	34%	47%	1%	19%	0%

Table 13. Percentage of road and bridge spending by activity—2021 (continued)

County	Population category	Total operational spending	Adminis-tration and unallocated	Construction, reconstruction, and preservation	Winter operations	Other maintenance and repair	Other financing uses
Union	A	$2,134,541	10%	79%	11%	0%	0%
Vanderburgh	C	$17,880,799	26%	68%	1%	4%	0%
Vermillion	A	$2,515,317	36%	42%	1%	20%	0%
Vigo	C	$8,662,076	15%	65%	2%	18%	0%
Wabash	B	$4,729,478	9%	61%	5%	25%	0%
Warren	A	$3,155,454	29%	28%	1%	36%	6%
Warrick	C	$10,318,556	5%	92%	1%	2%	0%
Washington	A	$6,935,301	43%	53%	2%	2%	0%
Wayne	C	$7,450,130	26%	60%	3%	11%	0%
Wells	A	$4,920,291	41%	56%	1%	0%	1%
White	A	$9,931,817	5%	41%	3%	51%	0%
Whitley	B	$4,686,984	30%	51%	8%	11%	0%
90-county average	**N/A**	**$8,755,406**	**20%**	**54%**	**6%**	**13%**	**6%**
Category A average	**N/A**	**$5,114,644**	**23%**	**53%**	**4%**	**13%**	**6%**
Category B average	**N/A**	**$9,490,907**	**18%**	**49%**	**8%**	**15%**	**11%**
Category C average	**N/A**	**$13,360,813**	**18%**	**61%**	**6%**	**12%**	**3%**

Sources: 2021 annual operational reports; U.S Census Bureau.

Notes:

1. Percentages may not total 100%, due to rounding.

2. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

3. Crawford County reported spending by revenue source but not by spending category. For this reason, Crawford County is not included in the county averages.

4. The data show an improvement in reporting winter operations spending with more counties reporting specific expenditures in 2021 than in 2020. While all counties have some actual winter operations expenditures, counties that have not reported any spending likely have not adjusted to parsing those expenses from other maintenance activities. Researchers expect the remaining counties will be able to parse these expenses over time.

Table 14 shows all types of county road and bridge revenues by fund for 2021. Figures 10 and 11 provide a summary of revenues for 2020 and 2021 by fund.

Average county road and bridge revenues increase with population in 2020 and 2021. The overall average county revenue was $9.8 million compared to $9 million in 2020. For Category A counties, the average revenue was $5.8 million in 2021 and $5.7 million in 2020. The average revenue for Category B counties was $10.3 million in 2021 and $9.4 million in 2020. Category C counties had an average revenue of $14.8 million in 2021 compared to $13.3 million in 2020. This is not surprising given the Motor Vehicle Highway (MVH) formula generally is weighted toward counties with higher populations.

Category B counties again reported more revenue in cumulative bridge funds on average than counties in other categories. Large counties also can have major bridge funds (IC 8-16-3.1). As shown in Table 23, six counties reported spending from these funds. Those revenues are reported under other revenues in the annual operational reports and are not included in the findings about cumulative bridge funds here.

In 2020 and 2021, Category A and Category B counties reported similar average amounts of other revenue but less than Category C counties.

Counties use a variety of funding sources to support local road and bridge work. Table 15 shows selected sources of new revenue from local taxes and intergovernmental sources identified by two or more counties in 2021 in either their operational reports or their annual financial reports. All counties received state MVH and Local Road and Street (LRS) distributions. All counties reported using property taxes for their cumulative capital bridge or major bridge funds. Eighty-eight counties reported allocating Financial Institutions Taxes and Vehicle/Aircraft Excise Taxes to road and bridge funds. Fifty-four counties have adopted a wheel and surtax and collect those revenues (see also Table

B2). Fifteen counties reported allocating new revenue from local option income taxes to local roads and bridges. Eight counties also reported having general cumulative capital funds. These funds utilize a variety of revenue types.

Eighty-nine counties reported receiving revenue for Community Crossing Matching Grants. The Indiana Department of Transportation reported awarding 84 counties these grants in 2021 (Table 15 and Table B3).[7] The additional counties likely received revenue from previous-year awards. Six counties also reported receiving other types of state grants. Sixteen counties reported receiving federal grants principally for bridges, and five counties reported receiving grants for bridge inspections.

A few more counties reported debt or capital leases in 2021 than in 2020. In 2021, 20 counties reported using debt—bonds, notes, or loans—to fund road and bridge construction/reconstruction or to buy equipment. Nine counties used that debt to work on roads or bridges. Six counties used debt to purchase equipment. Five counties reported debt but did not specify the use. Eighteen counties reported using debt in 2020. Twenty-five counties also reported using capital leases for equipment in 2021, while 22 counties reported using this tool in 2020.

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[7] The research team shows the 2022 awards in Table B3 for reference. This data is not summarized here because the annual operational report data for CY 2022 is not yet available.
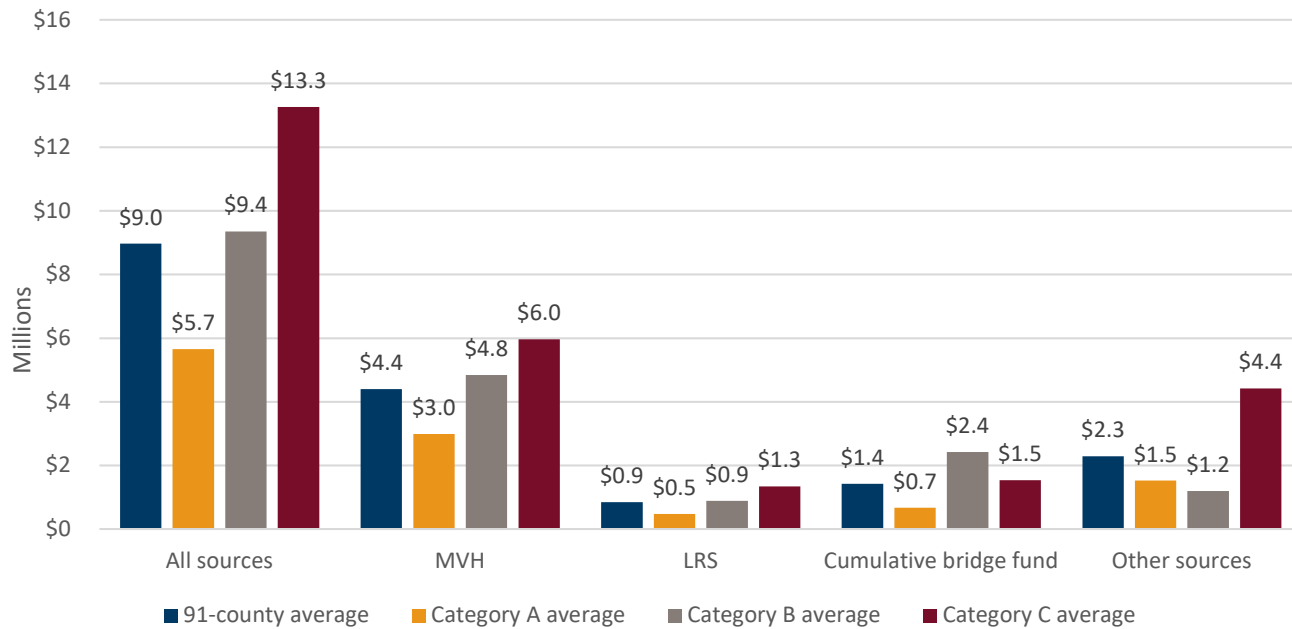
Figure 10. Average revenues used for road and bridge work by fund—2021
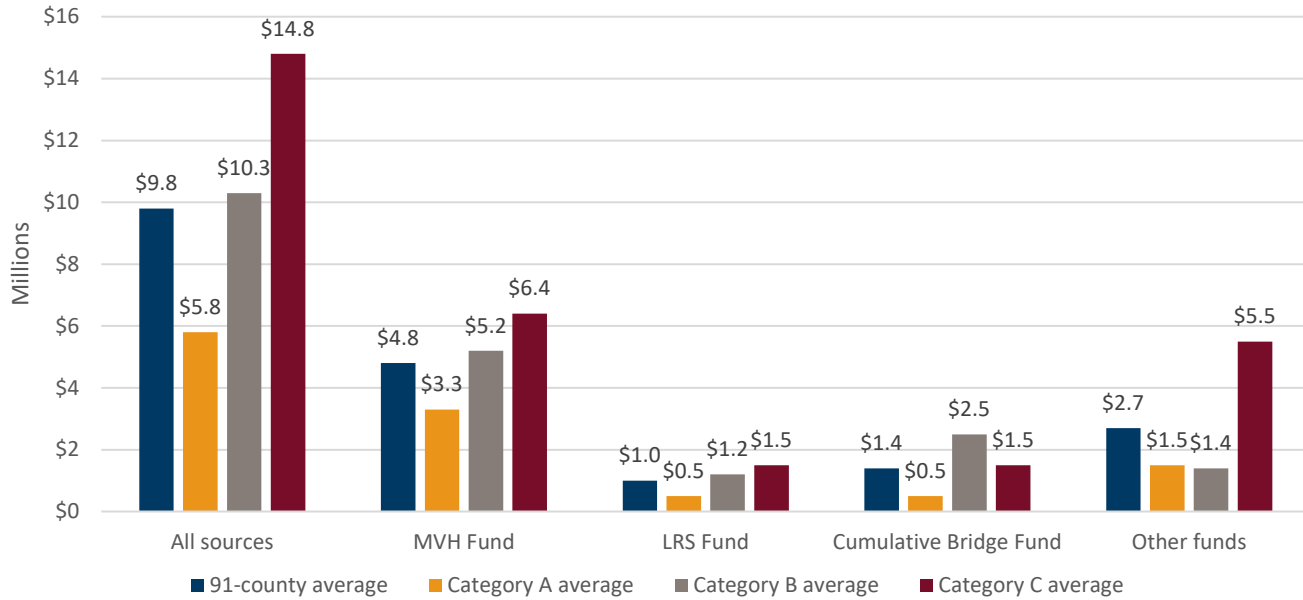
Sources: 2021 annual operational reports; U.S Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Figure 11. Average revenues used for road and bridge work by fund—2020

Sources: 2020 annual operational reports; U.S Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 14. Road and bridge revenues by fund—2021

County	Pop. category	All revenue	Motor Vehicle Highway Fund —unrestricted	Motor Vehicle Highway Fund —restricted	Local Road and Street Fund	Cumulative Bridge Fund	Total—other funds	% other funds
Adams	B	$8,173,440	$2,132,919	$1,619,432	$512,016	$822,007	$3,087,066	38%
Allen	C	$31,777,059	$8,923,913	$5,448,667	$2,806,097	$0	$14,598,381	46%
Bartholomew	C	$10,382,417	$2,786,394	$2,422,625	$1,124,714	$1,914,665	$2,134,019	21%
Benton	A	$4,168,685	$1,586,502	$1,406,399	$150,157	$277,275	$748,352	18%
Blackford	A	$2,383,018	$1,106,644	$811,703	$196,893	$190,047	$77,730	3%
Boone	C	$9,762,736	$2,073,244	$2,065,316	$671,716	$766,609	$4,185,851	43%
Brown	A	$4,580,608	$1,849,444	$972,051	$353,253	$404,011	$1,001,850	22%
Carroll	A	$6,163,759	$1,765,476	$1,708,432	$389,600	$643,339	$1,656,912	27%
Cass	B	$8,191,769	$2,900,731	$2,030,217	$620,719	$485,511	$2,154,591	26%
Clark	C	$10,663,465	$2,395,456	$2,534,274	$1,026,328	$1,959,433	$2,747,974	26%
Clay	A	$6,061,819	$2,308,979	$1,575,607	$449,253	$226,904	$1,501,076	25%
Clinton	B	$6,711,456	$1,867,574	$1,818,252	$534,381	$604,575	$1,886,673	28%
Crawford	A	$3,700,726	$1,062,052	$1,057,440	$198,313	$241,180	$1,141,741	31%
Daviess	B	$10,767,313	$4,140,675	$1,841,325	$509,880	$2,501,015	$1,774,417	16%
Dearborn	C	$11,789,780	$1,522,638	$1,501,357	$889,121	$975,414	$6,901,250	59%
Decatur	A	$6,281,659	$2,430,986	$1,530,934	$1,828,919	$490,820	$0	0%
DeKalb	B	$7,589,964	$2,155,317	$1,846,214	$712,002	$574,603	$2,301,828	30%
Delaware	C	$10,949,157	$2,961,772	$2,361,913	$879,693	$1,922,599	$2,823,180	26%
Dubois	B	$57,296,776	$12,438,518	$1,964,282	$9,189,693	$33,704,283	$0	0%
Elkhart	C	$24,055,657	$4,444,588	$3,847,826	$2,566,837	$1,336,165	$11,860,241	49%
Fayette	A	$4,012,631	$1,002,270	$996,979	$595,767	$345,250	$1,072,366	27%
Floyd	C	$4,851,466	$1,353,449	$1,151,236	$1,227,822	$399,647	$719,312	15%
Fountain	A	$4,658,777	$2,034,301	$1,462,414	$287,276	$874,785	$0	0%
Franklin	A	$5,907,309	$1,632,169	$2,086,011	$489,626	$722,465	$977,037	17%
Fulton	A	$5,997,024	$2,377,861	$1,733,595	$369,962	$257,946	$1,257,660	21%
Gibson	B	$6,959,541	$2,780,867	$2,178,616	$571,769	$1,428,288	$0	0%
Grant	C	$7,249,613	$2,483,947	$2,579,118	$642,283	$1,544,266	$0	0%
Greene	B	$6,861,797	$2,767,299	$2,018,179	$549,920	$370,653	$1,155,745	17%
Hamilton	C	$39,705,930	$4,741,664	$3,854,177	$1,341,898	$0	$29,768,191	75%
Hancock	C	$5,366,194	$2,337,156	$1,997,482	$1,115,157	$1,913,881	$0	0%
Harrison	B	$10,067,294	$3,181,779	$2,332,822	$833,027	$836,991	$2,882,675	29%
Hendricks	C	$17,793,186	$3,401,501	$2,923,180	$2,046,840	$4,720,672	$4,700,992	26%
Henry	B	$8,029,226	$2,026,386	$1,958,500	$824,781	$412,160	$2,807,400	35%
Howard	C	$7,275,125	$2,569,246	$2,879,901	$746,888	$1,079,090	$0	0%
Huntington	B	$7,126,763	$2,937,193	$1,714,804	$660,642	$686,013	$1,128,112	16%
Jackson	B	$6,254,296	$1,957,992	$1,869,110	$731,953	$609,227	$1,086,014	17%
Jasper	B	$19,793,413	$2,273,720	$3,162,915	$4,468,732	$6,870,000	$3,018,045	15%
Jay	A	$4,981,878	$2,241,699	$1,800,000	$400,000	$540,179	$0	0%
Jefferson	B	$5,303,263	$1,473,958	$1,355,958	$613,440	$835,813	$1,024,093	19%
Jennings	A	$5,121,127	$1,584,578	$1,450,455	$477,641	$589,898	$1,018,555	20%

Table 14. Road and bridge revenues by fund—2021 (continued)

County	Pop. category	All revenue	Motor Vehicle Highway Fund —unrestricted	Motor Vehicle Highway Fund —restricted	Local Road and Street Fund	Cumulative Bridge Fund	Total—other funds	% other funds
Johnson	C	$12,065,221	$4,492,406	$2,487,678	$2,208,820	$671,303	$2,205,013	18%
Knox	B	$6,627,241	$3,409,347	$2,053,344	$530,801	$633,749	$0	0%
Kosciusko	C	$10,957,852	$3,238,062	$2,995,319	$1,237,606	$692,951	$2,793,914	25%
LaGrange	B	$9,806,263	$4,606,073	$1,832,282	$740,369	$1,541,082	$1,086,457	11%
Lake	C	$15,964,119	$5,529,481	$4,553,150	$1,391,438	$3,219,165	$1,270,885	8%
La Porte	C	$19,275,134	$3,698,929	$2,949,911	$1,346,114	$561,549	$10,718,631	56%
Lawrence	B	$8,209,846	$2,868,278	$1,747,686	$742,553	$1,121,763	$1,729,566	21%
Madison	C	$10,029,673	$2,842,939	$2,758,221	$1,197,441	$1,429,438	$1,801,634	18%
Marshall	B	$10,870,171	$2,605,775	$4,245,856	$787,535	$1,752,561	$1,478,444	14%
Martin	A	$3,487,677	$1,312,054	$880,818	$186,241	$289,814	$818,751	23%
Miami	B	$7,082,726	$1,910,669	$1,856,591	$580,736	$436,474	$2,298,256	32%
Monroe	C	$29,468,798	$5,097,664	$2,783,797	$1,255,141	$2,212,251	$18,119,945	61%
Montgomery	B	$13,341,651	$3,548,614	$3,134,321	$1,864,041	$4,145,655	$649,020	5%
Morgan	C	$8,515,961	$2,851,039	$4,143,487	$1,120,056	$401,378	$0	0%
Newton	A	$12,488,472	$1,726,176	$1,354,927	$273,521	$333,662	$8,800,187	70%
Noble	B	$8,839,716	$3,914,095	$2,683,861	$869,251	$1,372,509	$0	0%
Ohio	A	$2,686,190	$408,281	$408,281	$113,604	$137,086	$1,618,938	60%
Orange	A	$5,799,947	$1,541,952	$1,608,512	$324,067	$538,221	$1,787,195	31%
Owen	A	$5,635,608	$1,581,487	$1,493,509	$1,111,186	$495,712	$953,714	17%
Parke	A	$5,414,534	$1,747,453	$2,571,032	$316,914	$319,053	$460,082	8%
Perry	A	$5,179,593	$1,374,484	$1,176,329	$315,615	$408,496	$1,904,669	37%
Pike	A	$5,399,953	$1,322,571	$1,234,426	$232,929	$308,533	$2,301,494	43%
Porter	C	$15,664,667	$2,941,825	$2,928,661	$1,907,737	$4,631,171	$3,255,273	21%
Posey	A	$9,131,461	$3,145,665	$1,665,438	$461,251	$1,098,763	$2,760,344	30%
Pulaski	A	$3,973,490	$1,862,496	$1,853,847	$236,097	$21,049	$0	0%
Putnam	B	$7,786,149	$3,270,798	$1,818,869	$609,465	$1,130,600	$956,416	12%
Randolph	A	$6,560,638	$2,011,391	$1,936,176	$415,719	$530,122	$1,667,230	25%
Ripley	A	$5,556,024	$1,794,295	$1,692,948	$528,031	$628,664	$912,088	16%
Rush	A	$20,689,679	$7,018,538	$1,644,594	$4,327,267	$543,675	$7,155,606	35%
St. Joseph	C	$24,231,774	$5,794,201	$4,128,615	$4,353,755	$837,891	$9,117,313	38%
Scott	A	$1,449,626	$609,878	$0	$480,000	$359,748	$0	0%
Shelby	B	$7,668,692	$3,372,451	$2,059,891	$795,625	$1,440,726	$0	0%
Spencer	A	$6,914,258	$1,833,779	$1,683,709	$373,414	$716,168	$2,307,187	33%
Starke	A	$4,755,951	$1,751,144	$1,441,762	$451,971	$338,574	$772,500	16%
Steuben	B	$8,140,805	$3,493,193	$2,301,476	$641,710	$243,149	$1,461,278	18%
Sullivan	A	$8,678,426	$2,404,032	$3,195,623	$320,633	$363,852	$2,394,285	28%
Switzerland	A	$3,067,850	$854,721	$848,758	$174,330	$235,022	$955,019	31%
Tippecanoe	C	$17,595,211	$2,953,380	$3,343,376	$1,610,504	$3,226,404	$6,461,547	37%
Tipton	A	$4,375,881	$2,273,320	$1,464,286	$298,396	$339,878	$0	0%
Union	A	$2,679,077	$677,114	$656,527	$128,192	$222,579	$994,665	37%

Table 14. Road and bridge revenues by fund—2021 (continued)

County	Pop. category	All revenue	Motor Vehicle Highway Fund —unrestricted	Motor Vehicle Highway Fund —restricted	Local Road and Street Fund	Cumulative Bridge Fund	Total—other funds	% other funds
Vanderburgh	C	$17,229,594	$4,268,407	$2,537,384	$1,761,560	$2,267,383	$6,394,859	37%
Vermillion	A	$5,365,721	$1,524,824	$1,165,048	$447,793	$1,143,262	$1,084,794	20%
Vigo	C	$8,017,676	$3,466,852	$2,412,459	$1,024,607	$1,113,758	$0	0%
Wabash	B	$5,224,848	$1,785,641	$1,743,271	$531,925	$368,195	$795,817	15%
Warren	A	$3,653,812	$1,419,417	$1,198,464	$165,338	$358,658	$511,935	14%
Warrick	C	$13,254,862	$3,351,665	$2,062,666	$1,228,103	$284,217	$6,328,211	48%
Washington	A	$5,706,960	$2,020,026	$1,785,922	$509,109	$520,039	$871,864	15%
Wayne	C	$6,849,739	$1,959,342	$1,910,360	$660,548	$1,459,754	$859,736	13%
Wells	A	$5,691,395	$2,201,826	$1,694,311	$503,397	$485,249	$806,613	14%
White	A	$12,660,169	$2,254,446	$2,036,393	$470,806	$1,398,065	$6,500,459	51%
Whitley	B	$5,701,831	$1,623,519	$1,608,273	$646,117	$719,614	$1,094,099	19%
91-county average	**N/A**	**$9,782,305**	**$2,698,669**	**$2,062,002**	**$982,576**	**$1,375,014**	**$2,685,882**	**26%**
Category A average	**N/A**	**$5,816,353**	**$1,833,009**	**$1,454,833**	**$509,276**	**$472,054**	**$1,547,181**	**23%**
Category B average	**N/A**	**$10,324,086**	**$3,123,438**	**$2,107,552**	**$1,179,734**	**$2,524,893**	**$1,379,077**	**13%**
Category C average	**N/A**	**$14,842,299**	**$3,499,302**	**$2,872,672**	**$1,458,845**	**$1,538,558**	**$5,546,902**	**37%**

Sources: 2021 annual operational reports; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 15. Selected sources of new revenue—2021

Motor Vehicle Highway Fund distributions	91
Local Road and Street Fund distributions	91
Covered bridge MVH distributions	12
Property taxes (bridge cumulative capital and major bridge funds)	91
Property taxes—tax increment financing (TIF)	4
Financial Institutions Tax distributions	88
Vehicle/Aircraft Excise Tax distributions	88
County Wheel Tax and Surtax	54
Local income taxes (LIT/LOIT/COIT/CEDIT)	15
Various revenues (cumulative capital funds)	8
Community Crossings Matching Grants	89
Other state grants	6
Federal grants—principally bridge grants	16
Bridge inspection grants	5
Riverboat	5
Landfill/wind farm	3

Sources: 2021 annual operational reports; 2021 annual financial reports; Indiana handbook of taxes, revenues, and appropriations—Fiscal Year 2022; Indiana Department of Transportation.

Notes:

1. This table only includes new revenues reported by counties in 2021. In some cases, expenditures were made from existing account balances that also may have come from these revenue types.

2. The revenues reported here reflect those that were identifiable within either the county annual operational report or annual financial reports. Revenues may not have been identified in cases in which counties did not use recognizable fund names, funding categories, or revenue coding.

3. INDOT awarded 84 counties Community Crossings Matching Grants in 2021 in one of the two grant rounds (Table B3). Five additional counties reported new state grant revenue from these grants. This likely reflects that they received distributions from the previous year's awards.

Winter operations

Winter operations typically include expenses associated with prepping roads and bridges for slick conditions and snow removal. These expenses include contractors, labor, equipment, sand, salt, and other treatment products . It is of special interest because annual spending is somewhat unpredictable and can vary widely depending on weather conditions. Also, researchers expect this variability may be a bigger challenge for northern counties.

County spending on winter operations for 2021 is shown in Table 13. The average spending for all counties is 6% of operations spending in 2021 compared to 7% in 2020. Fifty-seven counties reported spending 3% or less of operations spending, including 10 counties that reported

no winter operations spending. Marshall County reported the highest percentage of all counties in 2021 at 72% of operations spending compared to 38% in 2020.

Table 16 summarizes the average winter operations spending for 2020 and 2021 by size of county and by region. The data indicates northern counties spent more on winter operations than central and southern counties in both years. The average winter operations spending also generally increases with county population.

Fewer counties reported no spending in 2021 than in 2020 suggesting counties are adjusting to reporting this maintenance expense separately. While researchers are not yet able to rely fully on this data for an accurate picture of winter operations, the average spending by size and region are useful measures. As the data improves, the research team also can consider variations in average annual winter conditions across years in this analysis.

Table 16. Average county winter operations spending by population and by region—2020 and 2021

	2021	2020	Difference
91-county average	$445,490	$408,781	$36,709
Category A average	$198,003	$171,706	$26,297
Category B average	$555,059	$543,454	$11,605
Category C average	$679,128	$597,003	$82,125
Northern region average	$749,647	$615,561	$134,086
Central region average	$353,772	$365,295	-$11,523
Southern region average	$247,253	$270,995	-$23,742

Sources: 2020 and 2021 annual operational reports, 2020; U.S. Census Bureau.

Notes:

1. Only data from counties that reported winter operations spending was used to calculate the averages reported here.

2. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

3. Regions were established using INDOT districts as a rough guide. Northern counties generally include those in the INDOT La Porte and Fort Wayne districts. Central counties include those in the Crawfordsville and Greenfield districts, and southern counties include those in the Seymour and Vincennes district. In cases when two districts serve one county, researchers assigned the county to one of the districts (see Figure 1).

4. Crawford County reported spending but not by spending category. It is not included in the 2021 averages.

BRIDGES

This section is a discussion of local bridge data, including the inventory of bridges and culverts, condition, and bridge-specific spending and revenue as a proxy for treatment. The 2020 and 2021 annual operational reports and the 2021 and 2022 National Bridge Inventory (NBI) databases (downloaded in October 2021 and December 2022) are the principal data sources used for the analysis. Some comparisons across the last two study years are provided as well.

Bridge inventory

Table 17 shows the county inventories of bridges and culverts in the study years 2021 and 2022. In 2022, the study counties have a combined 11,170 bridges and 1,448 culverts with an average of 123 bridges and 16

culverts per county. The inventory shows a net increase of 18 bridges and 30 culverts since 2021.

Thirty-eight counties had differences in their bridge inventories between 2021 and 2022. While it is possible some of these changes reflect either the addition or retirement of an asset, it also may reflect an incomplete inventory in one of the two years. A complete and stable inventory is important to assess the state of county assets over time. As discussed in more detail below, there currently is no resource showing the nature of bridge construction and maintenance work completed by counties. For this reason, the research team recommends collecting this data.

Table 17. Inventory of bridges and culverts—2021 and 2022

County	Population category	Bridges			Culverts		
		2022	2021	Change	2022	2021	Change
Adams	B	153	154	-1	9	9	0
Allen	C	346	344	2	53	51	2
Bartholomew	C	176	177	-1	24	24	0
Benton	A	104	103	1	13	13	0
Blackford	A	41	41	0	18	18	0
Boone	C	158	159	-1	32	30	2
Brown	A	78	78	0	6	5	1
Carroll	A	105	105	0	9	9	0
Cass	B	57	57	0	73	73	0
Clark	C	128	129	-1	19	18	1
Clay	A	126	128	-2	6	5	1
Clinton	B	126	126	0	35	35	0
Crawford	A	74	75	-1	2	2	0
Daviess	B	114	114	0	11	11	0
Dearborn	C	82	82	0	18	18	0
Decatur	A	142	141	1	21	21	0
DeKalb	B	101	100	1	1	1	0
Delaware	C	175	175	0	20	20	0
Dubois	B	157	157	0	9	9	0
Elkhart	C	152	152	0	16	16	0
Fayette	A	68	68	0	19	19	0
Floyd	C	78	79	-1	9	9	0
Fountain	A	137	138	-1	3	3	0

Table 17. Inventory of bridges and culverts—2021 and 2022 (continued)

County	Population category	Bridges			Culverts		
		2022	2021	Change	2022	2021	Change
Franklin	A	91	89	2	31	31	0
Fulton	A	43	43	0	18	18	0
Gibson	B	227	227	0	27	27	0
Grant	C	180	180	0	12	9	3
Greene	B	157	157	0	1	1	0
Hamilton	C	252	251	1	87	82	5
Hancock	C	153	153	0	5	5	0
Harrison	B	84	84	0	4	3	1
Hendricks	C	195	195	0	62	60	2
Henry	B	99	99	0	45	45	0
Howard	C	132	132	0	7	7	0
Huntington	B	115	114	1	2	1	1
Jackson	B	154	152	2	30	31	-1
Jasper	B	124	124	0	2	2	0
Jay	A	157	157	0	4	4	0
Jefferson	B	89	88	1	14	14	0
Jennings	A	107	105	2	26	26	0
Johnson	C	133	132	1	30	30	0
Knox	B	190	185	5	5	5	0
Kosciusko	C	85	85	0	25	25	0
LaGrange	B	55	55	0	3	3	0
Lake	C	163	164	-1	23	21	2
La Porte	C	94	94	0	24	24	0
Lawrence	B	108	110	-2	17	16	1
Madison	C	209	209	0	9	9	0
Marshall	B	115	116	-1	1	1	0
Martin	A	42	42	0	2	2	0
Miami	B	114	115	-1	11	11	0
Monroe	C	111	110	1	46	46	0
Montgomery	B	143	143	0	28	28	0
Morgan	C	128	124	4	27	21	6
Newton	A	119	119	0	9	9	0
Noble	B	57	57	0	5	5	0
Ohio	A	29	29	0	4	4	0
Orange	A	97	97	0	11	11	0
Owen	A	97	98	-1	9	9	0
Parke	A	156	157	-1	12	11	1
Perry	A	93	93	0	6	6	0
Pike	A	108	108	0	0	0	0
Porter	C	107	107	0	25	25	0
Posey	A	129	129	0	15	15	0
Pulaski	A	68	68	0	6	6	0

Table 17. Inventory of bridges and culverts—2021 and 2022 (continued)

County	Population category	Bridges			Culverts		
		2022	2021	Change	2022	2021	Change
Putnam	B	205	205	0	17	17	0
Randolph	A	208	208	0	8	8	0
Ripley	A	117	117	0	17	17	0
Rush	A	191	192	-1	3	3	0
St. Joseph	C	55	55	0	18	18	0
Scott	A	185	185	0	8	8	0
Shelby	B	153	153	0	8	8	0
Spencer	A	87	87	0	15	15	0
Starke	A	50	50	0	7	7	0
Steuben	B	44	44	0	5	5	0
Sullivan	A	158	155	3	4	4	0
Switzerland	A	36	37	-1	4	4	0
Tippecanoe	C	181	181	0	33	33	0
Tipton	A	77	77	0	9	9	0
Union	A	38	38	0	6	6	0
Vanderburgh	C	143	142	1	13	12	1
Vermillion	A	74	74	0	1	1	0
Vigo	C	176	170	6	20	20	0
Wabash	B	153	153	0	5	5	0
Warren	A	84	83	1	13	13	0
Warrick	C	99	101	-2	12	11	1
Washington	A	123	122	1	2	2	0
Wayne	C	189	190	-1	37	36	1
Wells	A	120	118	2	14	15	-1
White	A	152	152	0	11	11	0
Whitley	B	85	85	0	2	2	0
91-county total	**N/A**	**11,170**	**11,152**	**18**	**1,448**	**1,418**	**30**
Category A total	**N/A**	**3,847**	**3,842**	**5**	**375**	**373**	**2**
Category B total	**N/A**	**3,211**	**3,206**	**5**	**370**	**368**	**2**
Category C total	**N/A**	**4,112**	**4,104**	**8**	**703**	**677**	**26**
91-county average	**N/A**	**123**	**123**	**N/A**	**16**	**16**	**N/A**
Category A average	**N/A**	**101**	**101**	**N/A**	**10**	**10**	**N/A**
Category B average	**N/A**	**124**	**123**	**N/A**	**14**	**14**	**N/A**
Category C average	**N/A**	**152**	**152**	**N/A**	**26**	**25**	**1**

Sources: 2021 and 2022 National Bridge Inventory; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Bridge and culvert conditions

Table 18 shows the current conditions ratings for bridge decks, superstructures, and substructures by county. In 2022, counties reported rating 16 bridge decks, 20 superstructures, and 11 substructures as failed. The number of failed bridge decks was the same as in 2021. The number of failed superstructures decreased by three and failed substructures decreased by two. In 2022, there were two bridge decks, five superstructures, and two substructures in danger of imminent failure, all fewer than in 2021. Bridges that were deemed failing or in imminent danger of failing made up less than 1% of the bridge inventory.

Table 19 summarizes bridge conditions for 2021 and 2022. Between 3% and 5% of bridges were rated poor across types of bridge elements and across all three population categories. There were 536 bridges with superstructures rated as poor, 24 more than in 2021. However, in 2022, there were fewer bridges that have decks and substructures with a poor rating. In 2022, there were 17 more bridge decks rated poor than in 2021, and there were two fewer substructures rated as poor.

Table 20 and Figure 12 provide more detail for bridges rated as failed or being in danger of imminent failure in 2022. Across 21 counties, 34 bridges had components that have failed or are approaching failure. Twenty-five bridges had at least one element that is failing, and nine bridges have at least one element in danger of imminent failure. Specifically, 18 bridges had decks that had failed or were close to failure, 26 bridges have superstructures that had failed or were near failure, and 14 bridges had substructures in these categories. In the aggregate and across population categories, this reflects 0.3% or fewer bridge elements in or approaching failure.

Table 21 summarizes culvert conditions for each of the study counties. In 2022, 64 culverts were rated poor, two more than in 2021. Category B counties had the most culverts rated as poor at 5% or 27 culverts. This was the same as in 2021. Category A and C counties had 5% and 3% of culverts rated as poor, respectively. Allen County—a Category C county—had one culvert in danger of imminent failure.

Table 18. Bridge conditions by county and component type

County	Pop. category	Total	Bridge deck					Superstructure					Substructure				
			Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent failure
Adams	B	153	0	71	82	0	0	1	69	83	0	0	1	28	124	0	0
Allen	C	346	26	207	113	0	0	35	189	122	0	0	8	180	158	0	0
Bartholomew	C	176	3	53	120	0	0	9	56	113	0	0	7	58	113	0	0
Benton	A	104	2	23	79	0	0	3	28	73	0	0	1	17	86	0	0
Blackford	A	41	1	20	20	0	0	1	22	18	0	0	2	19	20	0	0
Boone	C	158	5	81	72	0	0	7	81	70	0	0	9	67	82	0	0
Brown	A	78	5	36	37	1	0	11	47	20	1	0	9	47	22	1	0
Carroll	A	105	0	40	65	0	0	4	44	59	0	0	0	42	65	0	0
Cass	B	57	0	12	45	0	0	0	11	46	0	0	0	9	48	0	0
Clark	C	128	1	72	55	0	0	3	67	58	0	0	3	57	68	0	0
Clay	A	126	4	75	47	0	1	8	54	64	1	0	9	55	63	0	0
Clinton	B	126	2	64	60	0	0	5	64	57	0	0	2	70	54	0	0
Crawford	A	74	5	37	32	0	0	11	36	29	0	0	13	35	28	0	0
Daviess	B	114	0	51	63	0	0	0	56	58	0	0	0	51	63	0	0
Dearborn	C	82	4	40	38	0	0	9	33	40	0	0	9	46	27	0	0
Decatur	A	142	2	67	73	0	0	9	83	71	0	0	15	73	75	0	0
DeKalb	B	101	0	63	38	0	0	0	52	49	0	0	1	39	61	0	0
Delaware	C	174	4	88	83	1	0	7	75	93	1	0	8	82	85	0	0
Dubois	B	157	2	45	110	0	0	4	60	93	0	0	3	47	107	0	0
Elkhart	C	152	10	82	60	0	0	16	80	60	0	0	1	94	61	0	0
Fayette	A	68	4	35	29	0	0	4	31	33	0	0	5	20	43	0	0
Floyd	C	78	4	30	44	0	0	1	41	38	0	0	3	32	45	0	0
Fountain	A	137	5	89	43	0	0	14	82	41	0	0	1	69	67	0	0
Franklin	A	91	3	41	47	0	0	3	48	40	0	0	8	40	43	0	0
Fulton	A	43	2	26	15	0	0	2	22	19	0	0	0	17	26	0	0
Gibson	B	227	4	130	93	0	0	5	131	91	4	0	12	144	71	1	0
Grant	C	180	1	95	84	0	0	1	97	82	0	0	2	76	102	0	0

Table 18. Bridge conditions by county and component type (continued)

County	Pop. category	Bridge deck						Superstructure					Substructure				
		Total	Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent failure
Greene	B	157	10	72	75	0	0	16	72	69	0	0	5	67	85	0	0
Hamilton	C	252	5	65	182	0	0	6	62	186	0	0	3	53	198	0	0
Hancock	C	153	1	41	111	0	0	1	39	113	0	0	0	45	108	0	0
Harrison	B	84	1	23	60	0	0	1	14	69	0	0	0	19	65	0	0
Hendricks	C	195	2	101	92	0	0	3	97	95	0	0	3	94	98	0	0
Henry	B	99	1	59	39	0	0	2	56	41	0	0	2	39	58	0	0
Howard	C	132	1	67	64	0	0	5	78	49	0	0	4	71	57	0	0
Huntington	B	115	1	62	52	0	0	1	62	52	0	0	3	56	56	0	0
Jackson	B	154	2	74	78	0	0	3	71	80	0	0	2	57	95	0	0
Jasper	B	124	0	80	44	0	0	0	70	54	0	0	0	63	61	0	0
Jay	A	157	3	56	98	0	0	4	69	84	0	0	2	53	102	0	0
Jefferson	B	89	0	33	56	0	0	0	32	57	0	0	1	28	60	0	0
Jennings	A	107	6	54	47	1	0	6	48	53	1	0	9	37	61	1	0
Johnson	C	133	16	67	50	0	0	17	65	51	0	0	2	75	56	0	0
Knox	B	190	2	90	98	0	0	4	94	92	0	0	2	87	101	0	0
Kosciusko	C	85	4	47	34	0	0	4	34	47	0	0	1	44	40	0	0
LaGrange	B	55	0	21	34	0	0	0	20	35	0	0	0	22	33	0	0
Lake	C	162	13	53	97	1	0	14	42	107	1	0	10	48	105	0	0
La Porte	C	94	7	47	40	0	0	6	43	45	0	0	1	60	33	0	0
Lawrence	B	108	12	55	41	1	0	13	52	43	1	0	4	49	55	0	0
Madison	C	208	1	74	134	1	0	2	80	129	1	0	4	63	144	0	0
Marshall	B	115	5	46	64	0	0	6	45	64	0	0	5	41	69	0	0
Martin	A	42	0	16	26	0	0	6	13	23	0	0	4	22	16	0	0
Miami	B	114	8	51	55	0	0	10	48	56	0	0	10	60	44	0	0
Monroe	C	111	4	36	71	0	0	4	41	67	0	0	2	34	76	0	0
Montgomery	B	143	2	63	78	0	0	0	53	91	0	0	0	27	117	0	0
Morgan	C	128	6	54	68	0	0	7	59	62	0	0	7	52	69	0	0
Newton	A	119	1	53	65	0	0	1	63	55	0	0	1	45	73	0	0

Table 18. Bridge conditions by county and component type (continued)

County	Pop. category	Total	Bridge deck					Superstructure					Substructure				
			Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent failure
Noble	B	57	1	29	27	0	0	2	31	24	0	0	7	26	24	0	0
Ohio	A	29	0	8	21	0	0	0	9	20	0	0	0	11	18	0	0
Orange	A	97	4	42	51	0	0	12	40	45	0	0	7	45	45	0	0
Owen	A	97	6	38	53	0	0	5	47	50	2	0	10	47	45	0	0
Parke	A	156	9	111	36	0	0	18	104	36	0	1	20	83	55	0	0
Perry	A	93	2	50	41	0	0	1	53	39	0	0	1	51	41	0	0
Pike	A	108	2	34	72	0	0	12	34	62	0	0	2	49	57	0	0
Porter	C	107	7	61	39	0	0	7	61	39	0	0	9	58	40	0	0
Posey	A	129	3	58	68	1	0	8	51	70	1	0	8	42	79	1	0
Pulaski	A	68	1	46	21	0	0	2	44	22	0	0	2	36	30	0	0
Putnam	B	205	30	101	74	2	0	34	98	73	2	0	36	85	84	2	1
Randolph	A	208	14	83	111	3	0	18	86	104	2	1	12	75	121	1	0
Ripley	A	117	2	52	63	1	0	2	61	54	1	0	1	57	59	1	0
Rush	A	191	5	126	60	1	0	6	126	59	1	0	5	122	64	1	0
St. Joseph	C	87	10	26	51	0	0	13	25	49	0	0	1	38	48	0	0
Scott	A	55	3	24	28	0	0	2	24	29	0	0	4	24	27	0	0
Shelby	B	185	9	97	79	0	0	12	96	77	1	2	13	78	94	0	0
Spencer	A	153	0	55	98	0	0	2	49	109	0	0	2	59	99	0	0
Starke	A	50	1	20	29	0	0	1	20	29	0	0	3	14	33	0	0
Steuben	B	44	0	15	29	0	0	0	20	24	0	0	2	11	31	0	0
Sullivan	A	158	4	87	67	1	0	6	102	63	1	0	7	103	61	1	0
Switzerland	A	36	1	8	27	0	0	1	17	18	0	0	2	12	22	0	0
Tippecanoe	C	181	15	60	106	0	0	11	57	113	0	0	2	24	155	0	0
Tipton	A	77	0	32	45	0	0	0	28	49	0	0	1	19	57	0	0
Union	A	38	3	20	15	0	0	1	18	19	0	0	1	16	21	0	0
Vanderburgh	C	143	4	48	91	0	0	6	54	86	0	0	5	58	83	0	0
Vermillion	A	74	5	36	33	0	1	4	38	33	0	0	6	37	32	0	0
Vigo	C	176	5	89	82	0	0	5	83	88	0	0	5	88	83	0	0

Table 18. Bridge conditions by county and component type (continued)

County	Pop. category	Bridge deck						Superstructure					Substructure				
		Total	Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent failure
Wabash	B	153	3	98	52	0	0	7	99	47	0	1	7	83	63	0	1
Warren	A	84	1	45	38	0	0	3	30	51	0	0	6	31	47	0	0
Warrick	C	98	2	39	58	1	0	3	45	51	1	0	2	36	61	1	0
Washington	A	123	0	45	78	0	0	3	57	72	0	0	2	34	96	0	0
Wayne	C	189	5	85	99	0	0	6	81	106	0	0	2	48	143	0	0
Wells	A	120	1	55	64	0	0	1	59	60	0	0	3	53	64	0	0
White	A	152	7	78	67	0	0	7	80	65	0	0	2	52	98	0	0
Whitley	B	85	0	41	44	0	0	0	27	58	0	0	0	32	53	0	0
91-county total	N/A	11,170	378	5,175	5,617	16	2	536	5,135	5,582	20	5	417	4,662	6,175	11	2
Category A total	N/A	3,847	117	1,821	1,909	9	2	202	1,867	1,840	11	2	186	1,663	2,061	8	0
Category B total	N/A	3,211	95	1,546	1,570	2	0	126	1,503	1,583	5	4	118	1,318	1,776	3	2
Category C total	N/A	4,112	166	1,808	2,138	4	0	208	1,765	2,159	4	0	113	1,681	2,338	1	0
91-county %	N/A	N/A	3%	46%	50%	<0.5%	0%	5%	46%	50%	<0.5%	0%	4%	42%	55%	<0.5%	0%
Category A %	N/A	N/A	3%	48%	49%	<0.5%	<.5%	5%	49%	47%	<0.5%	0%	5%	43%	53%	<0.5%	0%
Category B %	N/A	N/A	3%	47%	50%	<0.5%	0%	4%	46%	51%	<0.5%	0%	3%	41%	56%	<0.5%	<0.5%
Category C %	N/A	N/A	4%	44%	52%	<0.5%	0%	4%	43%	53%	<0.5%	0%	3%	41%	56%	0%	0%

Sources: 2022 National Bridge Inventory (December); U.S Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 19. Comparison of bridge ratings—2021 and 2022

	Bridge deck						Superstructure					Substructure				
	Bridges	Poor	Fair	Good	Failed	Imminent failure	Poor	Fair	Good	Failed	Imminent Failure	Poor	Fair	Good	Failed	Imminent Failure
2022	11,170	378	5,175	5,617	16	2	536	5,135	5,582	20	5	417	4,662	6,175	11	2
2021	11,152	361	5,231	5,548	16	4	512	5,122	5,584	23	8	419	4,673	6,160	13	4
Difference	18	17	-56	69	0	-2	24	13	-2	-3	3	-2	-11	15	-2	-2

Sources: 2021 and 2022 National Bridge Inventory (October 2021 and December 2022); U.S Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 20. Bridges in or near failure—2022

County	Population category	Failed	Imminent failure	Notes
Brown	A	1	0	One bridge with a failed deck, superstructure, and substructure.
Clay	A	0	1	One bridge with a deck and superstructure near failure.
Delaware	C	1	0	One bridge with a failed deck and super structure and a substructure near failure.
Franklin	A	1	0	One bridge with a failed substructure.
Gibson	B	4	0	Four bridges with failed superstructures with one of them that also has a failed substructure.
Jennings	A	1	0	One bridge with a failed deck, superstructure, and substructure.
Lake	C	1	0	One bridge with a failed deck and superstructure.
Lawrence	B	1	0	One bridge with a failed deck and superstructure.
Madison	C	1	0	One bridge with a failed deck and superstructure.
Owen	A	3	0	Three bridges with failed superstructures.
Parke	A	0	1	One bridge with a superstructure near failure.
Posey	A	1	0	One bridge with a failed substructure.
Putnam	B	2	1	Two bridges with a failed decks, superstructures, and substructures. One bridge with a substructure near failure.
Randolph	A	3	1	One bridge with a failed deck, superstructure, and substructure. One bridge with a failed deck and superstructure. One bridge with a failed bridge deck. One bridge with a superstructure near failure
Ripley	A	1	0	One bridge with a failed deck, superstructure, and substructure.
Rush	A	1	0	One bridge with a failed deck, superstructure, and substructure.
Shelby	B	1	2	One bridge with a failed superstructure. Two bridges with superstructures in near failure.
Sullivan	A	1	0	One bridge with a failed deck, superstructure, and substructure.
Vermillion	A	0	1	One bridge with a deck near failure.
Wabash	B	0	2	One bridge with a superstructure near failure. One bridge with a substructure near failure.
Warrick	C	1	0	One bridge with a failed deck, superstructure, and substructure.
Total—2022	**N/A**	**25**	**9**	
Total—2021	**N/A**	**24**	**12**	
Difference	**N/A**	**1**	**-3**	

Sources: 2022 National Bridge Inventory (December); U.S Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Figure 12. Bridges in or near failure—2022

Legend:
- ○ Imminent Failure (9)
- ▲ Failed (25)
- ▦ Marion County–Excluded from analysis

Table 21. Culvert conditions—2022

County	Population category	Total	Poor	Fair	Good	Imminent failure
Adams	B	9	0	6	3	0
Allen	C	53	2	33	18	1
Bartholomew	C	24	0	7	17	0
Benton	A	13	0	8	5	0
Blackford	A	18	0	16	2	0
Boone	C	32	2	13	17	0
Brown	A	6	0	4	2	0
Carroll	A	9	0	4	5	0
Cass	B	73	1	55	17	0
Clark	C	19	0	10	9	0
Clay	A	6	0	1	5	0
Clinton	B	35	7	19	9	0
Crawford	A	2	0	1	1	0
Daviess	B	11	1	6	4	0
Dearborn	C	18	1	9	8	0
Decatur	A	21	0	10	11	0
DeKalb	B	1	0	1	0	0
Delaware	C	20	0	9	11	0
Dubois	B	9	1	5	3	0
Elkhart	C	16	0	9	7	0
Fayette	A	19	2	13	4	0
Floyd	C	9	0	1	8	0
Fountain	A	3	0	2	1	0
Franklin	A	31	5	14	12	0
Fulton	A	18	1	16	1	0
Gibson	B	27	0	6	21	0
Grant	C	12	0	8	4	0
Greene	B	1	0	0	1	0
Hamilton	C	87	0	18	69	0
Hancock	C	5	0	2	3	0
Harrison	B	4	0	1	3	0
Hendricks	C	62	2	28	32	0
Henry	B	45	4	31	10	0
Howard	C	7	0	5	2	0
Huntington	B	2	0	1	1	0
Jackson	B	30	2	18	10	0
Jasper	B	2	1	1	0	0
Jay	A	4	0	0	4	0
Jefferson	B	14	0	3	11	0
Jennings	A	26	4	17	5	0
Johnson	C	30	2	14	14	0
Knox	B	5	0	1	4	0

Table 21. Culvert conditions—2022 (continued)

County	Population category	Total	Poor	Fair	Good	Imminent failure
Kosciusko	C	25	4	15	6	0
LaGrange	B	3	0	1	2	0
Lake	C	23	0	1	22	0
La Porte	C	24	0	19	5	0
Lawrence	B	17	1	12	4	0
Madison	C	9	0	7	2	0
Marshall	B	1	0	1	0	0
Martin	A	2	0	1	1	0
Miami	B	11	2	7	2	0
Monroe	C	46	1	14	31	0
Montgomery	B	28	1	9	18	0
Morgan	C	27	1	8	18	0
Newton	A	9	0	7	2	0
Noble	B	5	0	1	4	0
Ohio	A	4	0	3	1	0
Orange	A	11	0	6	5	0
Owen	A	9	0	5	4	0
Parke	A	12	1	2	9	0
Perry	A	6	0	1	5	0
Pike	A	0	0	0	0	0
Porter	C	25	0	8	17	0
Posey	A	15	0	7	8	0
Pulaski	A	6	0	0	6	0
Putnam	B	17	4	4	9	0
Randolph	A	8	0	5	3	0
Ripley	A	17	1	12	4	0
Rush	A	3	0	1	2	0
St. Joseph	C	15	0	2	13	0
Scott	A	18	0	4	14	0
Shelby	B	8	2	4	2	0
Spencer	A	8	0	4	4	0
Starke	A	7	1	4	2	0
Steuben	B	5	0	3	2	0
Sullivan	A	4	0	3	1	0
Switzerland	A	4	1	2	1	0
Tippecanoe	C	33	2	6	25	0
Tipton	A	9	0	6	3	0
Union	A	6	0	6	0	0
Vanderburgh	C	13	0	3	10	0
Vermillion	A	1	0	1	0	0
Vigo	C	20	0	7	13	0
Wabash	B	5	0	3	2	0
Warren	A	13	1	6	6	0

Table 21. Culvert conditions—2022 (continued)

County	Population category	Total	Poor	Fair	Good	Imminent failure
Warrick	C	12	2	4	6	0
Washington	A	2	0	1	1	0
Wayne	C	37	0	15	22	0
Wells	A	14	1	6	7	0
White	A	11	0	5	6	0
Whitley	B	2	0	2	0	0
91 county totals	**N/A**	**1,448**	**64**	**680**	**704**	**1**
Category A totals	**N/A**	**375**	**18**	**204**	**153**	**0**
Category B totals	**N/A**	**370**	**27**	**201**	**142**	**0**
Category C totals	**N/A**	**703**	**19**	**275**	**409**	**1**
91-county %	**N/A**	**N/A**	**4%**	**47%**	**49%**	**<0.5%**
Category A %	**N/A**	**N/A**	**5%**	**54%**	**41%**	**0%**
Category B %	**N/A**	**N/A**	**7%**	**54%**	**38%**	**0%**
Category C %	**N/A**	**N/A**	**3%**	**39%**	**58%**	**<0.5%**

Sources: 2022 National Bridge Inventory (December); U.S Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 22. Comparison of culvert ratings—2021 and 2022

	Total	Poor	Fair	Good	Imminent failure
2022	1,448	64	680	704	1
2021	1,418	62	679	676	1
Difference	30	2	1	28	0

Sources: 2021 and 2022 National Bridge Inventory (October 2021 and December 2022).

Bridge treatments

There is no secondary data available specifically documenting construction, reconstruction, and preservation activities for bridges. The research team initially proposed using bridge-specific spending as a proxy measure to overcome the lack of data. However, with two full complements of county data now available and described below, the research team now believes this measure is inadequate to judge the amount of treatment completed on bridges and recommends adding these data to county reporting requirements. Readers should interpret the analysis below with caution due to the difficulties in identifying all bridge-specific spending.

Spending and revenue

Table 23 and Figure 13 summarize county spending from bridge-specific funds in 2021. Counties may spend some MVH and LRS funding on bridges, but annual operational reports do not parse these expenditures by road and bridge construction, reconstruction, and preservation, nor by maintenance and repair. Community Crossings Matching Grant data does not specify whether awards were used for

road or bridge projects. While INDOT has indicated that most Community Crossing grants support paving projects, we are able to see some local fund names that imply that they are for bridge projects. Also, some fund types or names are not easily identified as bridge disbursements.

In the aggregate, 91 counties spent $78 million from bridge-specific funds in 2021. This is an annual average of $858,000 per county. Counties in Category A and B spent $297,000 and $569,000 on average annually. Category C counties spent $1.9 million on average annually. Monroe and Hamilton counties spent more than $6 million on bridges. Three counties reported no spending from the cumulative bridge funds. Some counties reported spending cumulative bridge funds on administration and maintenance expenses.

Table 24 compares the average spending from bridge-specific funds for 2020 and 2021. Across the two years and population categories, identifiable bridge-specific spending varied considerably. As suggested above, a more reliable measure is needed to evaluate the annual level of activity focused on bridges.

Figure 13. County average for bridge-specific fund expenditures—2020 and 2021
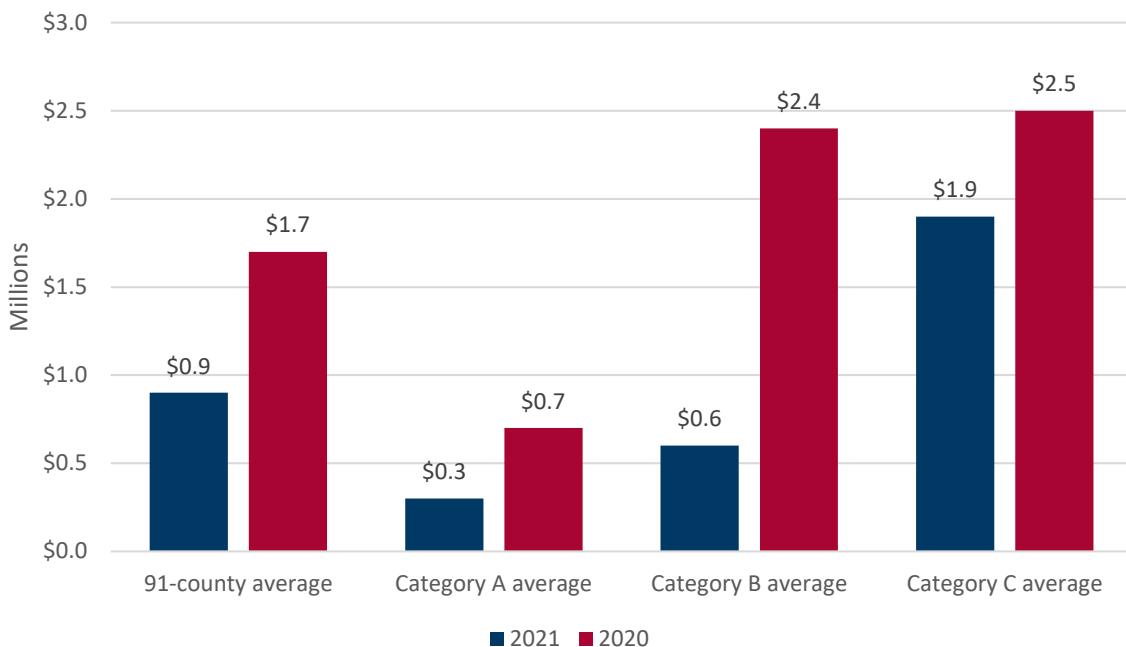
Sources: 2020 and 2021 annual operational reports; U.S. Census Bureau.

Note: Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

Table 23. County spending by bridge-specific fund—2021

County	Population category	Cumulative Bridge Fund	Major Bridge Fund	Covered Bridge Fund	Other	Total
Adams	B	$114,732	$0	$0	$0	$114,732
Allen	C	$0	$4,664,997	$0	$0	$4,664,997
Bartholomew	C	$937,617	$0	$0	$0	$937,617
Benton	A	$164,707	$0	$0	$0	$164,707
Blackford	A	$153,717	$0	$0	$0	$153,717
Boone	C	$413,214	$0	$0	$0	$413,214
Brown	A	$594,586	$0	$0	$0	$594,586
Carroll	A	$0	$0	$0	$0	$0
Cass	B	$306,378	$0	$0	$0	$306,378
Clark	C	$1,235,514	$0	$0	$0	$1,235,514
Clay	A	$155,221	$0	$0	$0	$155,221
Clinton	B	$0	$0	$0	$0	$0
Crawford	A	$259,599	$0	$0	$0	$259,599
Daviess	B	$952,603	$0	$0	$0	$952,603
Dearborn	C	$574,156	$0	$5,595	$0	$579,751
Decatur	A	$818,319	$0	$0	$0	$818,319
DeKalb	B	$173,385	$0	$4,375	$0	$177,760
Delaware	C	$1,202,774	$0	$0	$2,231,562	$3,434,336
Dubois	B	$922,308	$0	$0	$0	$922,308
Elkhart	C	$406,296	$321,213	$0	$0	$727,508
Fayette	A	$273,187	$0	$0	$0	$273,187
Floyd	C	$0	$0	$0	$0	$0
Fountain	A	$387,257	$0	$0	$0	$387,257
Franklin	A	$327,428	$0	$0	$0	$327,428
Fulton	A	$0	$0	$0	$181,241	$181,241
Gibson	B	$402,867	$0	$0	$0	$402,867
Grant	C	$1,784,496	$0	$0	$0	$1,784,496
Greene	B	$467,546	$0	$0	$0	$467,546
Hamilton	C	$0	$3,162,455	$0	$3,703,590	$6,866,045
Hancock	C	$765,525	$0	$0	$0	$765,525
Harrison	B	$257,970	$0	$0	$0	$257,970
Hendricks	C	$5,367,823	$0	$15,283	$0	$5,383,106
Henry	B	$552,162	$0	$0	$0	$552,162
Howard	C	$628,448	$0	$0	$0	$628,448
Huntington	B	$734,398	$0	$0	$0	$734,398
Jackson	B	$342,784	$0	$0	$0	$342,784
Jasper	B	$114,012	$0	$0	$0	$114,012
Jay	A	$381,058	$0	$0	$0	$381,058
Jefferson	B	$1,092,018	$0	$0	$0	$1,092,018
Jennings	A	$13,651	$0	$0	$0	$13,651
Johnson	C	$252,089	$0	$0	$1,542,828	$1,794,916
Knox	B	$465,462	$0	$0	$0	$465,462

Table 23. County spending by bridge-specific fund—2021 (continued)

County	Population category	Cumulative Bridge Fund	Major Bridge Fund	Covered Bridge Fund	Other	Total
Kosciusko	C	$622,119	$0	$0	$0	$622,119
LaGrange	B	$173,872	$0	$0	$0	$173,872
Lake	C	$922,308	$0	$0	$1,253,118	$2,175,426
La Porte	C	$699,643	$375,121	$0	$0	$1,074,764
Lawrence	B	$770,367	$0	$0	$200,752	$971,119
Madison	C	$2,566,191	$0	$0	$0	$2,566,191
Marshall	B	$120,835	$0	$0	$0	$120,835
Martin	A	$0	$0	$0	$0	$0
Miami	B	$521,022	$0	$0	$0	$521,022
Monroe	C	$892,147	$5,124,228	$0	$67,030	$6,083,405
Montgomery	B	$922,933	$0	$0	$0	$922,933
Morgan	C	$0	$0	$0	$0	$0
Newton	A	$463,074	$0	$0	$0	$463,074
Noble	B	$1,192,794	$0	$0	$0	$1,192,794
Ohio	A	$68,336	$0	$0	$22,510	$90,846
Orange	A	$307,459	$0	$0	$0	$307,459
Owen	A	$378,236	$0	$0	$0	$378,236
Parke	A	$0	$0	$34,988	$0	$34,988
Perry	A	$167,653	$0	$0	$0	$167,653
Pike	A	$214,884	$0	$0	$185,366	$400,250
Porter	C	$2,737,727	$0	$0	$0	$2,737,727
Posey	A	$916,506	$0	$0	$0	$916,506
Pulaski	A	$32,835	$0	$0	$0	$32,835
Putnam	B	$694,736	$0	$3,548	$0	$698,285
Randolph	A	$117,090	$0	$0	$0	$117,090
Ripley	A	$564,392	$0	$0	$0	$564,392
Rush	A	$453,887	$0	$42,190	$0	$496,077
St. Joseph	C	$721,666	$890,604	$0	$0	$1,612,269
Scott	A	$0	$0	$0	$0	$0
Shelby	B	$1,486,856	$0	$0	$0	$1,486,856
Spencer	A	$216,290	$0	$0	$0	$216,290
Starke	A	$135,249	$0	$0	$0	$135,249
Steuben	B	$362,629	$0	$0	$582,178	$944,807
Sullivan	A	$422,752	$0	$0	$0	$422,752
Switzerland	A	$50,352	$0	$0	$828,961	$879,313
Tippecanoe	C	$613,767	$0	$0	$0	$613,767
Tipton	A	$0	$0	$0	$0	$0
Union	A	$0	$0	$0	$0	$0
Vanderburgh	C	$1,222,124	$0	$0	$0	$1,222,124
Vermillion	A	$411,870	$0	$0	$0	$411,870
Vigo	C	$2,242,585	$0	$0	$0	$2,242,585
Wabash	B	$244,133	$0	$3,668	$77,270	$325,070

Table 23. County spending by bridge-specific fund—2021 (continued)

County	Population category	Cumulative Bridge Fund	Major Bridge Fund	Covered Bridge Fund	Other	Total
Warren	A	$64,151	$0	$0	$0	$64,151
Warrick	C	$233,732	$0	$0	$0	$233,732
Washington	A	$520,364	$0	$0	$0	$520,364
Wayne	C	$1,625,084	$0	$0	$0	$1,625,084
Wells	A	$193,393	$0	$0	$750,360	$943,753
White	A	$0	$0	$0	$0	$0
Whitley	B	$542,070	$0	$0	$0	$542,070
91-county total	**N/A**	**$51,825,421**	**$14,538,617**	**$109,647**	**$11,626,766**	**$78,100,451**
91-county average	**N/A**	**$569,510**	**-**	**-**	**-**	**$858,247**
Category A average	**N/A**	**$242,829**	**-**	**-**	**-**	**$296,661**
Category B average	**N/A**	**$535,803**	**-**	**-**	**-**	**$569,333**
Category C average	**N/A**	**$1,061,742**	**-**	**-**	**-**	**$1,926,840**

Sources: 2021 annual operational reports; U.S. Census Bureau.

Notes:

1. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

2. Spending numbers only include specific spending that can be parsed from bridge-specific funds. Counties may use MVH and LRS distributions for some bridge construction and maintenance.

3. Category averages for major bridge funds, covered bridge funds, and other were not calculated due to small number of counties reporting these funding types. These cells are denoted by a dash.

Table 24. Comparison of county spending from bridge-specific funds—2020 and 2021

	2021	2020
91-county average	$858,247	$1,708,750
Category A average	$296,661	$713,325
Category B average	$569,333	$2,418,994
Category C average	$1,926,840	$2,452,201

Sources: 2020 and 2021 annual operational reports; U.S. Census Bureau.

Note: Between 2020 and 2021, the spending from bridge-specific funds indicates a sharp decrease. This discrepancy should be interpreted with caution due to the difficulty in identifying all bridge expenditures within annual operational reports.

FINDINGS

This is the second year the full complement of county data was available allowing the analysis of short-term trends. The following findings are based principally on data available in asset management plans and annual operational reports submitted through the Indiana LTAP data management portal and the National Bridge Inventory provided by INDOT.

Roads

- In 2022, the 91 study counties reported 63,262 centerline miles of rural roads. Of those, 57% were asphalt, 24% were chip seal, 18% were gravel, and 1% were concrete pavements.
- Pavement inventory percentages were marginally different in 2021 and 2022. Data suggests a modest shift in the mix of pavements from chip seal surfaces to asphalt.
- The number of counties with one or more pavement types with poor average ratings decreased from 37 in 2021 to 33 in 2022, possibly indicating an overall improvement for these pavement types.
    - o The average condition rating for asphalt pavements dropped 2% from 2021 to 2022. Also, one additional county reported an average poor rating in 2022.
    - o For chip seal pavements, the overall average conditions rating across counties was slightly higher in 2022 than in 2021, and the number of counties with average poor ratings decreased by three.
    - o The average rating for the 36 counties that used a 5-point rating scale was good (3.3) in 2022. Three fewer counties reported an average rating of poor in 2022 than 2021.
    - o For concrete pavements, the average overall rating across counties was slightly lower than in 2022 even though one fewer counties reported an average rating of poor. The inventory of concrete pavements is very small, consisting of 369 centerline miles or less than .05% of the inventory.
- Across study counties, the roadway miles treated are similar between 2021 and 2022 for the four

pavement categories (asphalt, chip seal, gravel, and concrete). More specifically, in 2022, counties reported treating 16% of asphalt pavement miles compared to 17% in 2021; 11% of chip seal miles compared to 14% in 2021; 3% of concrete miles compared to 2% 2021; and 2% of gravel miles compared to 1% in 2021.

Bridges

- In 2022, the study counties reported 11,170 bridges and 1,448 culverts, 18 more bridges and 30 more culverts than reported in 2021.
- Across the study counties, 16 bridge decks, 20 superstructures, and 11 substructures were rated as failed. This is the same number of bridge decks as in 2021 but three fewer superstructures and two fewer substructures. In addition, counties reported two bridge decks, five superstructures, and two substructures were in danger of imminent failure. Overall, seven fewer components were reported as being in danger of imminent failure than in 2021, including two fewer decks, three fewer superstructures, and two fewer substructures.
- Across the study counties, 64 culverts were rated poor, two more than in 2021.
- Currently there is no direct measure for the treatment of bridges. Annual operational reports allow the calculation of spending from bridge-specific local funds, but this is not an effective measure.

Road and bridge revenue and spending

- Counties received more funding in 2021 than 2020. Average county revenue in 2021 was $9.8 million compared to $9 million in 2020. Average revenue for Category A counties increased from $5.7 million to $6.8 million during this period, and average revenue for Category B increased from $9.4 million to $10.3 million. The average revenue for Category C counties increased to $13.3 million from $14.8 million.
- In 2021, 84 study counties were awarded Community Crossings Matching Grants for a combined $79.9 million. That is a decrease of $5.5

million from 2020 when 87 counties received grants for a total of $83.3 million.

- Counties continued to use a variety of funding sources to support road and bridge work in 2022. All or nearly all study counties reported using Motor Vehicle Highway and Local Road and Street distributions, property taxes, and Financial Institutions Tax and Vehicle/Aircraft Tax distributions. Most counties also received Community Crossing Matching Grants. More than half of counties have adopted County Motor Vehicle Excise Surtax and Wheel Tax. A handful of counties reported receiving covered bridge MVH distributions, property taxes through tax increment financing (TIF), local option income taxes, federal grants for bridge work and bridge inspections, and riverboat and landfill revenues.
- Two more counties reported using debt to fund road and bridge infrastructure and equipment in 2021 than in 2020. Three more counties also reported using lend-lease arrangements to finance equipment in 2022.
- Overall, counties reported that slightly more than half of all spending went to construction, reconstruction, and preservation activities. They reported that about 20% went to winter operations and other maintenance and repair.
- In 2021, spending on winter operations was more than two times higher for counties in the northern region of the state than for those in the central and southern regions.

RECOMMENDATIONS

It is critical that policymakers have good data that allows them to track assets and conditions over time. This type of data helps support the need for continued resources for local roads and bridges as well as maximizing the utility of these limited resources at the local level. The research team makes the following recommendations to improve data collection, quality, and consistency among local agencies. Many of these recommendations are carried over all or in part from previous reports. The research team highly recommends consideration and

implementation by LTAP, the Association of Indiana Counties (AIC), the Association of Indiana County Commissioners (IACC), in collaboration with local agencies and officials.

1. Ensure robust, consistent local asset inventories and ratings systems for county roads and bridges.
   - Discrepancies in pavement inventory mileages exist in many counties between asset management plans and operational reports. Information also varies from year to year. Counties should work to resolve these discrepancies and ensure all current assets appear in the road inventory.
   - Within asset management plans, some counties report inventory in particular pavement types but do not rate all those assets. Counties should be required to rate all assets, even when inventories for particular pavement types are small.
   - Inconsistencies remain in identifying pavements as chip seal. As suggested in previous reports, counties report using chip seal treatments to upgrade gravel roads and as a preservation application for asphalt pavements. In the past, the research team also found some counties define asphalt pavements with a chip seal treatment as asphalt when rating them in asset management plans but as chip seal in the annual operational reports. Only treatments on a gravel base should be reported as chip seal. Consistent definitions across counties and across reports are critical to creating a meaningful analysis of conditions. Resolving this issue requires good communication between highway departments and the firms they use to complete pavement ratings.
   - Counties also use a mix of 5-point and 10-point scales to rate gravel roads. The research team recommends all counties use the 5-point scale published by the University of Wisconsin—Madison.[8]

8 Walker, Etine, and Kummer, 2015b.

2. Collect additional data
   • Currently, there is no secondary data resource documenting bridge work. The current structure of operational reports allows some segmentation of bridge activities for bridge-specific funds. However, MVH and LRS disbursements currently include both road and bridge activities. One option would be to add treatment to asset management plans. Another option would be to restore some of the detail about road and bridge activities that previously that was available prior to 2018 in Section 3 of the annual operation report. This latter solution also would allow additional indicators and analyses of spending for roads and bridges.
   • To better allow comparisons across counties, it would be useful to create a standard list of other revenues counties have reported in the annual operational reports that can be used to categorize spending and revenues in addition to local fund names.

3. Resolve inconsistences in reporting pavement treatments.
   • Some counties reported treating no pavement while others reported treating 100% of asphalt and gravel pavements. This may reflect varied interpretations among counties about the definition of treatment as well as the classification of what it means to treat a mile of pavement compared to only treating a small portion of that mile. Clear and consistent guidance may help to resolve these discrepancies.
   • Currently treatments options—as defined for local asset management plans—are quite varied in scope. These range from full asphalt or concrete reconstruction to minor treatments such as patching and pothole filling. Better consistency is needed in reporting across counties. It may be useful in future analyses to distinguish between levels of treatment that reflect construction or reconstruction and others that could better be characterized as maintenance.

4. Improve winter operations reporting.
   • Winter operations has been a spending category in the annual operational reports for only a few years. Reporting is improving with fewer counties reporting zero expenditures in 2022 than in 2021. The remaining counties should be encouraged to find a method to distinguish these costs from the other maintenance and operations costs. Effective data will allow policymakers to better understand the variability of this annual expense.

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APPENDIX A: METHODOLOGY

Road inventory and conditions

Road inventory data by pavement type is reported in both the county annual operational reports and in asset management plans. In the current analysis, the asset management data is used for both the analysis of the full inventory and of road conditions. In the previous report, the team utilized annual operational report data to analyze the full inventory. This change was made to provide more consistency across elements of the analysis.

Road condition data comes from the asset management plans submitted to the Local Technical Assistance Program (LTAP)   Data Management Portal[9] for participation in the INDOT Community Crossings Matching Grant program The program requires counties update pavement ratings every two years. Asphalt pavements generally are rated using the Pavement Surface Evaluation and Rating (PASER) system promoted and taught by LTAP and described in detail in its 2017 guide Indiana local roads—An asset management guide for cities, towns and counties. Similarly, concrete, chip seal, and gravel pavements are rated using guidance published by the Wisconsin Transportation Information Center and by the Center for Technology and Training.[10,11] A few counties choose to use the Pavement Condition Index (PCI) to evaluate pavements.

Inventory data in the annual operational reports is available in an electronic format for 2018–21. Conditions data from asset management plans currently is available for 2019–22. The research team has had access to data for all counties for two years. The current analysis utilizes data from the 2020 and 2021 annual operational reports, the 2021 and 2022 asset management plans, and the 2021 and 2022 National Bridge Inventory. For each study county, there is a summary of pavements by type and rating, as well as a weighted average. A weighted average is an average rating based on the relative pavement miles for each rating. The analysis also includes the number of pavement miles treated in each county. Data comparisons are made for each county for the two most recent years, as well as the aggregate of all counties and counties by population category.

Tables A1–A3 summarize the PASER rating systems for asphalt, chip seal, and gravel roads, respectively. For the years included in this analysis, asphalt and chip seal roads generally were rated using 10-point scales. A few counties still rate chip seal pavements on a 5-point scale. These ratings were adjusted to a 10-point scale by researchers. Readers can reference the Sealcoat PASER guide[12] for more detail on the 5-point rating system. Counties rated gravel roads using a combination of 5-point and 10-point scales. Ratings for the 5-point scale are provided in Table A3. It is unclear what guidance counties are using as the basis of the 10-point scale. For counties that use PCI, the rating categories are as follows: good (71–100), fair (55–70), and poor (0–54)

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[9] LTAP Data Management Portal https://ltapdms.itap.purdue.edu/ltap
[10] Walker, D., Etine, L., and Kummer, S., 2015a, and 2015b; Center for Technology and Training, n.d.
[11] The Transportation Information Center also publishes a PASER guide for asphalt pavements: Walker, D., Etine, L., and Kummer, S., 2013a.
[12] Walker, D., Etine, L., and Kummer, S., 2001/2013b.

Table A1. Asphalt PASER rating guide

PASER rating	Condition	Suggested level of repair
9 and 10	Excellent	No maintenance required
8	Very good	Little to no maintenance
7	Good	Preventive maintenance
5 and 6	Fair to good	Nonstructural preservation treatment
3 and 4	Poor to fair	Structural repair
1 and 2	Failed	Reconstruction

Sources: Applied Pavement Technology, Inc.; Walker, D., Etine, L., and Kummer, S., 2013a.

Table A2. Chip seal PASER rating guide

PASER rating	Condition	Visible distress	Condition description, drainage, and recommended improvement
10	Good	No distress	New construction. No maintenance needed.
9		No distress	Like new. No maintenance needed.
8		First signs of distress	Limited edge distress. Routine maintenance. Minor edge seal.
7	Fair	Minor distress	Less than 5% edge distress, lane distress, or raveling. Minor asphalt or spray injection patching. Possible single-application seal coat.
6		Moderate distress	Less than 10% edge distress, lane distress, or raveling. Moderate asphalt or spray injection patching. Single-application seal coat.
5		Distressed	Less than 20% edge distress, lane distress, or raveling. Moderate asphalt or spray injection patching. Single-application seal coat with up to half needing double-application seal coat.
4	Poor	Distressed	Less than 30% edge distress or lane distress or rutting of one-half inch to 1 inch. Asphalt or spray injection patching and double-application seal coat.
3		Distressed	Less than 50% edge distress or lane distress or rutting of 1 to 2 inches. Wedge and/or asphalt or spray injection patching and double- or triple-application seal coat. Possible crush-and-shape first.
2		Distressed	Less than 50% edge distress or lane distress or rutting greater than 2 inches. Reconstruct by crush-and-shape prior to new seal coat surface, possible return to gravel.
1		Extensive distress	Visible distress on more than 50% of surface area. Reconstruct by crush-and-shape prior to new seal coat surface or return to gravel.

Source: Center for Technology and Training.

Table A3. Gravel PASER rating guide

PASER rating	Condition	Condition description and treatment measures
5	Excellent	New construction or total reconstruction. Excellent drainage. Little or no maintenance needed.
4	Good	Recently regraded. Good crown and drainage throughout. Adequate gravel for traffic. Routine grading and dust control may be needed.
3	Fair	Shows traffic effects. Regrading (reworking) necessary to maintain. Needs some ditch improvement and culvert maintenance. Some areas may need additional gravel.
2	Poor	Travel at slow speeds (less than 25 mph) is required. Needs additional new aggregate. Major ditch construction and culvert maintenance also required.
1	Failed	Travel is difficult and road may be closed at times. Needs complete rebuilding and/or new culverts.

Source: Walker, D., Etine, L., and Kummer, S., 2013b.

Figure A1. Road treatment options

- Asphalt full depth repairs
- Cape seal
- Chip seal
- Chip seal—Double
- Chip seal—Double and fog
- Chip seal—Triple
- Chip seal and fog
- Chip seal and microsurfacing
- Chip seal, patch, and berming
- Cold mix asphalt
- Concrete—Full depth repairs
- Concrete—Joint/crack Sealing
- Concrete—Partial depth repairs
- Concrete—Slab replacement
- Crack seal
- Crack seal and chip seal
- Crack seal and microsurface
- Crack seal and patching
- Crack seal and rejuvenator
- Dust control
- Fog seal
- Full depth reclamation with asphalt
- Full depth reclamation with chip seal
- Liquid Road
- Microsurface
- Microsurface and patching
- Microsurface double
- Microsurface double and patch
- Mill and chip seal
- Mill and double chip seal
- Mill and overlay—1"
- Mill and overlay—1.5"
- Mill and overlay—2"
- Mill and overlay—2.5"
- Mill and overlay—3"
- Mill and overlay—4"
- Mill and triple chip seal
- New road construction
- Overlay < 1.5"
- Overlay—1.5"
- Overlay—2"
- Overlay—2.5"
- Overlay—3"
- Overlay—4"
- Patching/pothole filling
- Pug mix asphalt
- Reconstruction—Asphalt
- Reconstruction—Concrete
- Rejuvenator
- Roller compacted concrete
- Slurry Seal
- Thin concrete overlay

Source: LTAP Data Management System.

Road treatment

An important part of the local asset management plans is reporting the road segments treated each year. Guidance for these plans identifies a wide variety of treatment options counties can choose from when reporting treatment activity (Figure A1). These options range from full reconstruction to maintenance activities.

Bridge inventory and conditions

Biannual inspections are performed on all county bridges, and inspection results are recorded in the National Bridge Inventory (NBI) database. This is a rolling database. It is updated as inspection data is submitted. In the current study, the research team is utilizing the databases downloaded in October 2021 and December 2022. The current data includes inspection data principally from 2021 and 2022. The 2021 data primarily included data from 2020 and 2021.   The current study includes more extensive comparisons than previously.

Conditions are recorded for four component categories:
- Bridge deck: riding surface of the bridge
- Superstructure: structure that supports the bridge deck (e.g., beams, girders, and trusses)
- Substructure: components that support superstructure (e.g., piers, bents, and foundation)
- Culvert

For each study county, there is a current inventory by component and rating, an average rating by component, a list of bridges with structurally deficient components (those at risk of imminent failure), and a list of failed bridges. There is no direct information about treatment activity available. Spending data is provided to estimate relative local effort, although admittedly it is not a very robust proxy.

A condition rating guide for the deck, superstructure, and substructure categories is summarized in Table A4. A 10-point rating scale (0–9) is used for each category. A rating of 5 or 6 typically warrants maintenance and repair. A rating of 1–4 warrants rehabilitation or reconstruction, while a rating of 0 is considered failed and should be taken out of service.

A culvert is defined as a structure greater than 20 feet in length, without a deck. The roadway over the structure is set on fill. A condition rating guide for culverts is summarized in Table A5.

Table A4. Bridge condition rating guide

Rating	Condition	Description	Suggested level of repair
N	Not applicable	Not applicable.	No maintenance required
9	Excellent	No problems noted.	Schedule preventive maintenance
8	Very good	No problems noted.	
7	Good	Some minor problems.	
6	Satisfactory	Structural elements show some minor deterioration.	Preventive maintenance or repair
5	Fair	All primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.	
4	Poor	Advanced section loss, deterioration, spalling, or scour.	Structurally deficient— rehabilitation or reconstruction
3	Serious	Loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.	
2	Critical	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored, it may be necessary to close the bridge until corrective action is taken.	
1	Imminent failure	Imminent failure condition—major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic, but corrective action may put the bridge back into light service.	
0	Failed	Out of service and beyond corrective action.	

Source: FWHA, 2009.

Table A5. Culvert condition rating guide

Code	Description
N	Not applicable.
9	No deficiencies.
8	No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.
7	Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel. Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, or pipes. Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting.
6	Deterioration or initial disintegration, minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls, or pipes. Metal culverts have a smooth curvature, nonsymmetrical shape, significant corrosion, or moderate pitting.
5	Moderate to major deterioration or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection in one section, significant corrosion, or deep pitting.
4	Large spalls, heavy scaling, wide cracks, considerable efflorescence, or opened construction joint permitting loss of backfill. Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection throughout, extensive corrosion, or deep pitting.

Table A5. Culvert condition rating guide (continued)

Code	Description
3	Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls, or pipes. Metal culverts have extreme distortion and deflection in one section, extensive corrosion, or deep pitting with scattered perforations.
2	Integral wingwalls collapsed, severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic. Metal culverts have extreme distortion and deflection throughout with extensive perforations due to corrosion.
1	Bridge closed. Corrective action may put the bridge back into light service.
0	Bridge closed. Replacement necessary.

Source: FHWA, 1995.

Spending and revenue

Counties are required to submit an annual operational report every year to Indiana State Board of Accounts (SBOA) and LTAP. In 2019, counties began using a new operational report form approved by SBOA. This new form established a standard format and is expected to improve data reporting and provide more consistency of data across agencies. These reports show county revenues and expenditures for highway department operations (roads and bridges), including revenues and the mix of spending in broad activity categories and by funding source.

Road and bridge expenditures are categorized as: administration and unallocated; construction, reconstruction, and preservation; maintenance and repair; winter operations; and other financing uses (Figure A2). It is not possible to parse all bridge expenditures. Some can be identified based on the funding source, but others are aggregated with road expenditures. In 2018, the Indiana General Assembly required at least 50% of road funding to be spent on new construction, reconstruction, and preservation activities. In 2019, most counties deposited at least 50% of their state Motor Vehicle Highway (MVH) distributions into a Motor Vehicle Highway Restricted account to ensure the legal requirement is met.

The analysis includes annual operational report data for 2020 and 2021 for each study county, including total spending, spending by activity, and types of revenues. When possible, revenues and spending are parsed for bridge construction and reconstruction.

The research team also supplemented the revenue data in the annual operational reports with data from the Indiana Department of Transportation Community Crossings Matching Grant awards; local Annual Financial Reports submitted to the SBOA and available on the Gateway for Governmental Units website; the Indiana Office of the State Treasurer Motor Vehicle Highway Account and Local Roads and Streets distributions; and County Motor Vehicle Excise Surtax and Wheel Tax collected by Indiana Bureau of Motor Vehicles and published in the Indiana handbook of taxes, revenues, and appropriations from the Indiana Legislative Services Agency. Tables showing this data appear in Appendix B.

Figure A2. Annual operations report spending activity definitions

General administration and unallocated:
Costs of an administrative nature and not allocated to any specific road or bridge project. These expenses, commonly referred to as overhead, include supervisory and support staff personal services, supplies and equipment, general office expenses (e.g., rent, printing, utilities, insurance, etc.), facility expenses (e.g., repairs, maintenance, insurance), and vehicle expenses. Other type of general expenses would include utilities for traffic signals and street lights, capital outlays (e.g., acquisition of land, buildings, and improvements other than buildings including the acquisition of equipment), and annual pavement and bridge inspections. In the subcategory of "Other services and charges," disbursements would include incidental expenses not associated with roads or bridges but performed by agency forces, such as mowing grass in a county or city park, or snow and ice removal at county or municipal facilities.

Construction, reconstruction, and preservation:
Costs and expenses for work performed by internal forces or outside contractors that result in a new or improved roadway—paved or unpaved, including capacity enhancements. Activities result in the structural improvement of a roadway improving its ability to support vehicle traffic. Costs include personnel, material, and equipment expenses. Preservation is defined as actions or strategies applied to existing infrastructure that prevent, delay, or reduce further deterioration. These actions and strategies also maintain or improve the functional condition of the system—without increasing structural capacity—and extend the service life of the infrastructure. Preservation activities are intended to correct infrastructure problems before the structural integrity is impacted. Preservation is a broad category of treatments that include activities such as thin overlays or microsurfacing. Nonstructural preservation treatments are usually less than 2 inches in depth and are designed to address age-related problems—such as block cracking— or distress caused by exposure to the elements, such as transverse cracking. Crack sealing, patching of pavement, and deck patching for bridges would be included in this category. Costs include materials, personnel, contracted services, and equipment rental/operation expenses.

    Pavement: Costs associated with activities that retain or extend the current roadway condition. This includes treatments to curbs, gutters, and paved shoulders and alleys. Pavement preservation is a broad category of treatments that include nonstructural treatments that are usually less than 2 inches in depth and are designed to address age-related problems (such as block cracking) or distress caused by exposure to the elements (such as transverse cracking). Some examples of such treatments are thin overlays, wedge and leveling, mill and overlays, chip seals, fog seals, scrub seals, slurry seals, microsurfacing, and crack sealing. Activities such as grinding, grading unpaved sections, line striping, raised payment markers, and similar activities are also considered pavement preservation.

    Bridges: Costs associated with activities that preserve a bridge and its approaches. Activities include deck patching, sealing, painting, repairing and maintaining bearing assemblies and joints, clearing brush and debris accumulations at piers, deck overlays, scour repair, substructure repair, repairing approach slabs and guardrails, and repairing bridge railings. Work on culverts, pipes, and other small drainage structures underneath roads and streets are included in this category.

    Right of way: Costs associated with activities that occur in the area between pavement (including paved shoulders) and right-of-way boundaries. This would include, but is not limited to, the preservation, replacement and repair of standard Manual on Uniform Traffic Control Devices (MUTCD) signs, traffic signals, barriers, guardrails, sidewalks and ramps, unpaved shoulders (e.g., berming), vegetation control for infrastructure preservation purposes only, and inspection of roadside assets for the purpose of asset management planning. It would also include work performed on drainage assets such as ditches, pipes, catch basins, underdrains and their outlets, etc.

Figure A2. Annual operations report spending activity definitions (continued)

Maintenance and repair:

Maintenance and repair expenses are disbursements associated with the routine maintenance and repair of paved and unpaved roads, streets, bridges, and highways. Maintenance and repair disbursements retain the asset above a certain condition level established by a unit and encompasses work that is performed in reaction to an event, season, or activities that are done for short-term operational need that do not have preservation value. Costs include materials, personnel, and equipment rental/operation expenses.

Winter operations:

Costs associated prior to, during, and following winter events. These include costs for planning, material purchases and management, equipment preparation and usage, and human resources. They also include the use of external resources and services contracted in winter operations.

Other maintenance and repair:

Pavement: Pavement maintenance includes activities such as graffiti removal, cleaning, pothole filling and patching, event cleanup, repairs due to vehicular accidents, or storm damage to roadways.

Bridges: Bridge maintenance includes activities such as graffiti removal, deck cleaning, repairs due to vehicular accidents, or storm damage to bridges.

Right-of-way operations: Costs associated with routine activities that occur in the area between pavement (including paved shoulders) and right-of-way boundaries. This would include—but is not limited to—maintenance and repair of signs damaged from accidents, grass cutting, tree trimming, litter control (including dead animal removal), and inspection of resident complaints.

Other financing uses

Expenses and disbursements related to debt service, loan payments, investments, and other types of financial instruments to fund road and bridge projects.

Source: State Board of Accounts, Form 54400 (8-19).

Table B1. County Motor Vehicle Highway and Local Roads and Streets distributions—CY 2020–22

County	Pop. category	CY 2022			CY 2021			CY 2020			% difference CY 2020–CY 2021
		LRS	MVH	Total	LRS	MVH	Total	LRS	MVH	Total	Total
Adams	B	$517,428	$3,371,178	$3,888,606	$502,646	$3,238,864	$3,741,510	$496,573	$3,139,819	$3,636,392	3%
Allen	C	$3,009,030	$11,407,437	$14,416,467	$2,806,079	$10,897,334	$13,703,413	$2,753,431	$10,556,032	$13,309,463	3%
Bartholomew	C	$941,515	$4,309,847	$5,251,362	$936,407	$4,122,840	$5,059,247	$918,527	$3,965,996	$4,884,523	4%
Benton	A	$155,923	$2,933,368	$3,089,291	$150,157	$2,812,798	$2,962,954	$147,459	$2,724,308	$2,871,767	3%
Blackford	A	$201,589	$1,690,478	$1,892,067	$196,893	$1,623,407	$1,820,300	$193,448	$1,572,455	$1,765,903	3%
Boone	C	$649,852	$4,295,858	$4,945,710	$655,866	$4,130,631	$4,786,497	$639,330	$4,003,919	$4,643,249	3%
Brown	A	$362,254	$2,028,849	$2,391,103	$351,677	$1,944,101	$2,295,778	$345,358	$1,881,799	$2,227,157	3%
Carroll	A	$404,324	$3,566,664	$3,970,988	$389,600	$3,416,864	$3,806,463	$385,746	$3,307,420	$3,693,166	3%
Cass	B	$639,806	$4,234,459	$4,874,265	$620,719	$4,060,435	$4,681,154	$613,273	$3,930,623	$4,543,895	3%
Clark	C	$989,961	$4,060,072	$5,050,033	$952,112	$3,866,699	$4,818,811	$930,606	$3,721,936	$4,652,542	4%
Clay	A	$466,336	$3,287,584	$3,753,920	$449,014	$3,151,214	$3,600,228	$442,730	$3,052,531	$3,495,260	3%
Clinton	B	$549,785	$3,789,574	$4,339,359	$534,381	$3,636,504	$4,170,885	$530,756	$3,525,428	$4,056,184	3%
Crawford	A	$207,725	$2,207,606	$2,415,330	$198,313	$2,114,299	$2,312,612	$194,997	$2,047,135	$2,242,132	3%
Daviess	B	$490,661	$3,848,303	$4,338,964	$470,193	$3,682,651	$4,152,844	$459,451	$3,557,065	$4,016,516	3%
Dearborn	C	$923,976	$3,130,047	$4,054,023	$889,121	$3,002,714	$3,891,834	$879,979	$2,912,410	$3,792,389	3%
Decatur	A	$460,841	$3,194,444	$3,655,285	$449,855	$3,061,869	$3,511,724	$443,711	$2,959,817	$3,403,529	3%
DeKalb	B	$736,935	$3,832,269	$4,569,204	$711,708	$3,668,686	$4,380,395	$700,357	$3,553,206	$4,253,563	3%
Delaware	C	$887,076	$4,904,374	$5,791,450	$874,221	$4,723,825	$5,598,047	$865,536	$4,569,772	$5,435,308	3%
Dubois	B	$704,772	$3,657,434	$4,362,206	$682,655	$3,502,795	$4,185,449	$676,192	$3,395,780	$4,071,972	3%
Elkhart	C	$2,665,455	$8,054,425	$10,719,881	$2,566,837	$7,695,653	$10,262,489	$2,515,132	$7,441,776	$9,956,908	3%
Fayette	A	$366,922	$2,080,301	$2,447,224	$353,411	$1,993,958	$2,347,369	$349,153	$1,931,006	$2,280,159	3%
Floyd	C	$995,352	$2,903,979	$3,899,331	$973,345	$2,802,752	$3,776,097	$967,838	$2,723,014	$3,690,851	2%
Fountain	A	$294,104	$3,049,984	$3,344,087	$283,709	$2,922,854	$3,206,563	$282,259	$2,834,529	$3,116,788	3%
Franklin	A	$499,300	$3,106,863	$3,606,163	$478,547	$2,971,008	$3,449,554	$473,615	$2,875,209	$3,348,824	3%
Fulton	A	$384,626	$3,618,407	$4,003,034	$369,962	$3,467,190	$3,837,152	$364,835	$3,357,701	$3,722,536	3%
Gibson	B	$566,883	$4,534,333	$5,101,216	$554,105	$4,357,233	$4,911,337	$548,568	$4,220,832	$4,769,401	3%
Grant	C	$663,712	$4,395,692	$5,059,404	$639,443	$4,217,329	$4,856,771	$634,106	$4,090,593	$4,724,699	3%

Table B1. County Motor Vehicle Highway and Local Roads and Streets distributions—CY 2020–22 (continued)

County	Pop. category	CY 2022			CY 2021			CY 2020			% difference CY 2020–CY 2021
		LRS	MVH	Total	LRS	MVH	Total	LRS	MVH	Total	Total
Greene	B	$574,129	$4,215,213	$4,789,342	$549,920	$4,036,358	$4,586,278	$542,274	$3,907,756	$4,450,031	3%
Hamilton	C	$1,346,207	$8,029,383	$9,375,590	$1,341,898	$7,708,353	$9,050,252	$1,328,464	$7,466,923	$8,795,386	3%
Hancock	C	$1,117,010	$4,170,437	$5,287,446	$1,115,145	$3,994,965	$5,110,109	$1,101,948	$3,877,930	$4,979,878	3%
Harrison	B	$856,721	$4,336,833	$5,193,555	$827,083	$4,112,450	$4,939,533	$824,760	$3,910,817	$4,735,577	4%
Hendricks	C	$2,022,276	$6,103,533	$8,125,808	$2,046,840	$5,846,361	$7,893,201	$1,999,980	$5,651,838	$7,651,818	3%
Henry	B	$797,551	$4,086,542	$4,884,093	$763,691	$3,916,999	$4,680,690	$759,197	$3,799,154	$4,558,352	3%
Howard	C	$765,530	$3,934,385	$4,699,915	$745,182	$3,769,134	$4,514,316	$735,784	$3,651,079	$4,386,863	3%
Huntington	B	$615,058	$3,483,875	$4,098,932	$597,630	$3,348,390	$3,946,020	$589,604	$3,244,048	$3,833,652	3%
Jackson	B	$758,508	$3,904,317	$4,662,826	$731,953	$3,738,220	$4,470,173	$711,242	$3,611,907	$4,323,149	3%
Jasper	B	$676,481	$4,500,907	$5,177,388	$654,210	$4,324,903	$4,979,113	$645,018	$4,192,211	$4,837,229	3%
Jay	A	$349,845	$3,433,792	$3,783,637	$337,776	$3,291,613	$3,629,389	$332,420	$3,185,412	$3,517,832	3%
Jefferson	B	$532,909	$2,828,175	$3,361,085	$516,121	$2,711,916	$3,228,037	$511,998	$2,627,593	$3,139,591	3%
Jennings	A	$542,293	$3,345,358	$3,887,651	$524,853	$3,210,266	$3,735,119	$514,054	$3,107,353	$3,621,408	3%
Johnson	C	$1,503,436	$5,135,633	$6,639,069	$1,508,820	$4,911,158	$6,419,978	$1,479,204	$4,741,932	$6,221,136	3%
Knox	B	$544,874	$4,249,638	$4,794,512	$518,391	$4,070,588	$4,588,979	$508,286	$3,935,040	$4,443,327	3%
Kosciusko	C	$1,270,311	$6,207,898	$7,478,209	$1,236,145	$5,949,924	$7,186,069	$1,230,785	$5,762,653	$6,993,438	3%
LaGrange	B	$570,879	$3,824,719	$4,395,599	$540,172	$3,654,557	$4,194,729	$534,043	$3,539,311	$4,073,354	3%
Lake	C	$1,432,456	$9,259,371	$10,691,827	$1,391,438	$8,886,180	$10,277,618	$1,381,871	$8,647,223	$10,029,094	2%
La Porte	C	$1,386,517	$6,144,450	$7,530,966	$1,338,064	$5,899,822	$7,237,886	$1,323,353	$5,713,611	$7,036,964	3%
Lawrence	B	$772,018	$3,651,974	$4,423,992	$742,553	$3,495,372	$4,237,925	$733,085	$3,383,563	$4,116,648	3%
Madison	C	$1,242,570	$5,752,059	$6,994,629	$1,197,441	$5,516,441	$6,713,882	$1,181,794	$5,344,001	$6,525,795	3%
Marshall	B	$819,203	$4,614,133	$5,433,336	$787,535	$4,419,744	$5,207,279	$778,819	$4,278,569	$5,057,387	3%
Martin	A	$192,923	$1,837,868	$2,030,791	$185,671	$1,761,636	$1,947,306	$182,598	$1,707,649	$1,890,248	3%
Miami	B	$601,569	$3,870,735	$4,472,303	$580,736	$3,713,182	$4,293,918	$579,725	$3,601,707	$4,181,432	3%
Monroe	C	$1,304,875	$4,754,332	$6,059,207	$1,254,495	$4,565,603	$5,820,099	$1,246,953	$4,440,001	$5,686,953	2%
Montgomery	B	$651,524	$4,115,130	$4,766,654	$627,022	$3,944,402	$4,571,424	$618,845	$3,820,598	$4,439,443	3%
Morgan	C	$1,151,283	$4,265,844	$5,417,126	$1,119,988	$4,087,755	$5,207,743	$1,109,741	$3,964,410	$5,074,152	3%
Newton	A	$291,278	$3,051,409	$3,342,687	$279,849	$2,924,022	$3,203,871	$278,880	$2,833,451	$3,112,331	3%

Table B1. County Motor Vehicle Highway and Local Roads and Streets distributions—CY 2020–22 (continued)

County	Pop. category	CY 2022			CY 2021			CY 2020			% difference CY 2020–CY 2021
		LRS	MVH	Total	LRS	MVH	Total	LRS	MVH	Total	Total
Noble	B	$835,899	$4,264,247	$5,100,146	$805,283	$4,079,432	$4,884,715	$790,237	$3,938,343	$4,728,580	3%
Ohio	A	$116,712	$851,482	$968,194	$113,604	$816,562	$930,166	$111,725	$796,356	$908,081	2%
Orange	A	$337,709	$2,938,705	$3,276,414	$324,067	$2,816,897	$3,140,964	$316,695	$2,717,677	$3,034,372	4%
Owen	A	$433,452	$3,054,208	$3,487,660	$417,532	$2,926,487	$3,344,019	$412,871	$2,834,724	$3,247,596	3%
Parke	A	$277,731	$3,344,278	$3,622,010	$264,184	$3,204,748	$3,468,932	$259,959	$3,101,024	$3,360,982	3%
Perry	A	$328,995	$2,456,975	$2,785,970	$315,072	$2,352,658	$2,667,730	$307,551	$2,275,926	$2,583,477	3%
Pike	A	$242,734	$2,574,665	$2,817,399	$232,929	$2,468,178	$2,701,107	$231,734	$2,388,543	$2,620,277	3%
Porter	C	$1,914,817	$6,098,119	$8,012,936	$1,858,445	$5,854,484	$7,712,929	$1,842,297	$5,677,212	$7,519,509	3%
Posey	A	$475,644	$3,472,995	$3,948,639	$460,651	$3,330,877	$3,791,528	$452,992	$3,225,829	$3,678,821	3%
Pulaski	A	$246,036	$3,862,355	$4,108,391	$236,097	$3,700,765	$3,936,862	$235,171	$3,584,374	$3,819,545	3%
Putnam	B	$634,121	$3,799,298	$4,433,419	$608,794	$3,637,738	$4,246,531	$596,996	$3,518,382	$4,115,377	3%
Randolph	A	$431,135	$3,985,517	$4,416,651	$415,719	$3,820,557	$4,236,276	$413,145	$3,700,791	$4,113,936	3%
Ripley	A	$547,120	$3,535,806	$4,082,925	$528,031	$3,385,895	$3,913,926	$522,595	$3,279,871	$3,802,466	3%
Rush	A	$307,940	$3,428,851	$3,736,791	$299,315	$3,288,534	$3,587,849	$293,813	$3,186,250	$3,480,063	3%
St. Joseph	C	$2,906,235	$8,591,438	$11,497,673	$2,829,077	$8,257,229	$11,086,307	$2,799,782	$8,006,451	$10,806,232	3%
Scott	A	$408,367	$1,851,122	$2,259,489	$388,758	$1,770,034	$2,158,791	$380,291	$1,712,418	$2,092,709	3%
Shelby	B	$826,953	$4,301,063	$5,128,016	$795,625	$4,119,781	$4,915,406	$774,288	$3,976,082	$4,750,371	3%
Spencer	A	$387,009	$3,507,690	$3,894,700	$373,414	$3,367,417	$3,740,832	$369,806	$3,276,192	$3,645,998	3%
Starke	A	$473,488	$3,295,493	$3,768,982	$451,971	$3,157,887	$3,609,859	$446,374	$3,061,771	$3,508,145	3%
Steuben	B	$647,395	$3,310,533	$3,957,928	$628,885	$3,174,228	$3,803,113	$616,907	$3,070,172	$3,687,079	3%
Sullivan	A	$335,033	$3,864,082	$4,199,115	$319,474	$3,704,216	$4,023,690	$314,217	$3,593,821	$3,908,038	3%
Switzerland	A	$183,577	$1,764,593	$1,948,170	$174,330	$1,689,796	$1,864,126	$171,071	$1,630,425	$1,801,496	3%
Tippecanoe	C	$1,660,884	$5,993,910	$7,654,794	$1,590,822	$5,753,660	$7,344,482	$1,561,835	$5,552,444	$7,114,279	3%
Tipton	A	$299,031	$2,688,117	$2,987,148	$289,555	$2,570,268	$2,859,823	$285,359	$2,490,113	$2,775,472	3%
Union	A	$132,562	$1,369,118	$1,501,680	$128,192	$1,313,054	$1,441,245	$126,984	$1,271,517	$1,398,501	3%
Vanderburgh	C	$1,567,383	$5,260,789	$6,828,172	$1,519,393	$5,074,768	$6,594,160	$1,511,771	$4,956,510	$6,468,281	2%
Vermillion	A	$250,321	$2,046,326	$2,296,647	$241,438	$1,960,523	$2,201,961	$236,947	$1,895,803	$2,132,750	3%
Vigo	C	$1,076,507	$5,032,728	$6,109,235	$1,024,272	$4,824,918	$5,849,190	$1,013,821	$4,679,451	$5,693,272	3%

Table B1. County Motor Vehicle Highway and Local Roads and Streets distributions—CY 2020–22 (continued)

County	Pop. category	CY 2022			CY 2021			CY 2020			% difference CY 2020–CY 2021
		LRS	MVH	Total	LRS	MVH	Total	LRS	MVH	Total	Total
Wabash	B	$526,768	$3,632,307	$4,159,075	$511,907	$3,486,542	$3,998,449	$512,204	$3,383,448	$3,895,651	3%
Warren	A	$170,324	$2,498,575	$2,668,898	$165,338	$2,396,929	$2,562,267	$166,078	$2,327,268	$2,493,346	3%
Warrick	C	$1,189,941	$4,308,342	$5,498,283	$1,144,742	$4,125,332	$5,270,073	$1,122,370	$3,992,217	$5,114,587	3%
Washington	A	$531,895	$3,732,089	$4,263,984	$509,109	$3,571,843	$4,080,952	$500,026	$3,458,158	$3,958,184	3%
Wayne	C	$683,379	$3,970,662	$4,654,042	$660,548	$3,820,720	$4,481,268	$652,047	$3,701,153	$4,353,200	3%
Wells	A	$518,053	$3,533,204	$4,051,257	$502,255	$3,388,622	$3,890,877	$494,062	$3,271,950	$3,766,013	3%
White	A	$485,743	$4,262,390	$4,748,133	$470,806	$4,072,786	$4,543,592	$463,504	$3,936,353	$4,399,857	3%
Whitley	B	$664,713	$3,355,363	$4,020,076	$646,117	$3,216,546	$3,862,663	$634,355	$3,110,463	$3,744,818	3%
91-county total	N/A	$67,481,986	$362,439,204	$429,921,190	$65,347,350	$347,397,726	$412,745,076	$64,459,569	$336,379,332	$400,838,901	3%

Sources: Indiana Office of the State Auditor; U.S. Census Bureau.

Notes:

1. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

2. Marion County is excluded.

Table B2. County Motor Vehicle Excise Surtax and Wheel Tax distributions—CY 2020 and 2021

County	Population category	CY 2021	CY 2020	% difference CY 2020–CY 2021
Adams	B	$978,153	$966,608	1%
Allen	C	$8,371,262	$8,101,338	3%
Blackford	A	$389,145	$381,067	2%
Brown	A	$772,147	$747,777	3%
Carroll	A	$872,764	$847,320	3%
Cass	B	$1,079,208	$1,045,633	3%
Clay	A	$894,698	$868,276	3%
Clinton	B	$1,127,036	$1,098,999	3%
Daviess	B	$836,543	$803,759	4%
Decatur	A	$1,582,487	$1,551,459	2%
Delaware	C	$2,629,416	$2,604,570	1%
Dubois	B	$1,139,693	$1,114,633	2%
Elkhart	C	$5,402,196	$5,217,176	4%
Fayette	A	$656,892	$635,276	3%
Fountain	A	$549,530	$531,481	3%
Fulton	A	$687,556	$657,130	5%
Gibson	B	$739,585	$739,969	0%
Greene	B	$1,009,173	$972,061	4%
Hancock	C	$2,380,407	$2,317,765	3%
Hendricks	C	$4,844,311	$4,706,773	3%
Henry	B	$2,337,064	$2,266,364	3%
Howard	C	$1,802,281	$1,751,553	3%
Huntington	B	$1,186,783	$1,181,118	0%
Jay	A	$507,915	$486,545	4%
Johnson	C	$4,263,025	$4,139,696	3%
Kosciusko	C	$3,509,564	$3,399,540	3%
LaGrange	B	$414,364	$392,681	6%
Lawrence	B	$1,370,520	$1,313,929	4%
Madison	C	$3,425,069	$3,315,450	3%
Miami	B	$844,895	$824,780	2%
Monroe	C	$2,959,567	$2,883,360	3%
Montgomery	B	$1,131,676	$1,108,579	2%
Morgan	C	$2,401,541	$2,343,720	2%
Noble	B	$1,478,492	$1,431,141	3%
Owen	A	$689,899	$670,361	3%
Parke	A	$396,834	$380,152	4%
Perry	A	$374,718	$366,715	2%
Posey	A	$722,578	$710,225	2%
Putnam	B	$1,174,593	$1,134,106	4%
Randolph	A	$864,865	$838,596	3%
Rush	A	$618,078	$602,136	3%
St. Joseph	C	$6,465,669	$6,313,481	2%

Table B2. County Motor Vehicle Excise Surtax and Wheel Tax distributions—CY 2020 and 2021 (continued)

County	Population category	CY 2021	CY 2020	% difference CY 2020–CY 2021
Shelby	B	$1,547,181	$1,515,070	2%
Steuben	B	$2,265,275	$2,195,328	3%
Sullivan	A	$467,087	$447,501	4%
Tippecanoe	C	$3,092,089	$3,019,036	2%
Tipton	A	$569,250	$552,803	3%
Union	A	$260,374	$254,795	2%
Vanderburgh	C	$3,772,998	$3,704,562	2%
Vermillion	A	$293,322	$281,838	4%
Vigo	C	$1,475,200	$1,440,535	2%
Warrick	C	$1,519,556	$1,481,464	3%
Wells	A	$452,253	$436,768	4%
Whitley	B	$516,992	$502,490	3%
Total	**N/A**	**$92,113,769**	**$89,595,488**	**3%**

Sources: Indiana Bureau of Motor Vehicles as published by the Indiana Legislative Services Agency; U.S. Census Bureau.

Notes:

1. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

2. Marion County is excluded.

Table B3. Community Crossings Matching Grant awards—CY 2020–22

County	Population category	CY 2022	CY 2021	CY 2020	% difference CY 2020–CY 2021
Adams	B	$999,879	$999,719	$450,000	122%
Allen	C	$1,000,000	$1,000,000	$1,020,059	-2%
Bartholomew	C	$1,000,000	$1,128,139	$1,063,577	6%
Benton	A	$671,119	$0	$748,252	-100%
Blackford	A	$853,825	$0	$0	N/A
Boone	C	$1,000,000	$1,220,916	$997,917	22%
Brown	A	$1,000,000	$1,000,000	$1,000,000	0%
Carroll	A	$1,000,000	$983,986	$999,999	-2%
Cass	B	$1,000,000	$1,000,000	$1,000,000	0%
Clark	C	$967,748	$151,557	$656,678	-77%
Clay	A	$1,000,000	$1,000,000	$1,000,000	0%
Clinton	B	$1,000,000	$1,000,000	$947,985	5%
Crawford	A	$982,585	$534,735	$0	N/A
Daviess	B	$1,000,000	$1,085,074	$1,000,000	9%
Dearborn	C	$1,000,000	$1,000,000	$1,000,000	0%
Decatur	A	$999,999	$999,867	$999,970	0%
DeKalb	B	$1,000,000	$813,429	$1,000,000	-19%
Delaware	C	$948,295	$1,077,670	$1,000,000	8%
Dubois	B	$950,522	$1,059,244	$1,000,000	6%
Elkhart	C	$1,000,000	$1,000,000	$1,188,934	-16%
Fayette	A	$947,120	$1,000,000	$1,000,000	0%
Floyd	C	$951,228	$700,450	$931,479	-25%

Table B3. Community Crossings Matching Grant awards—CY 2020–22 (continued)

County	Population category	CY 2022	CY 2021	CY 2020	% difference CY 2020–CY 2021
Fountain	A	$1,000,000	$999,750	$814,730	23%
Franklin	A	$923,701	$999,053	$1,000,000	0%
Fulton	A	$1,000,000	$1,111,838	$1,198,890	-7%
Gibson	B	$1,000,000	$1,000,000	$1,000,000	0%
Grant	C	$350,000	$390,000	$1,005,740	-61%
Greene	B	$1,000,000	$1,000,000	$999,552	0%
Hamilton	C	$1,000,000	$1,359,645	$1,042,893	30%
Hancock	C	$1,000,000	$1,064,077	$996,220	7%
Harrison	B	$1,000,000	$1,000,000	$1,000,000	0%
Hendricks	C	$1,000,000	$1,000,000	$1,000,000	0%
Henry	B	$1,000,000	$1,000,000	$1,000,000	0%
Howard	C	$323,813	$995,075	$1,000,000	0%
Huntington	B	$1,652,189	$931,865	$781,778	19%
Jackson	B	$983,241	$1,000,000	$1,000,000	0%
Jasper	B	$1,000,000	$1,139,586	$1,000,000	14%
Jay	A	$1,000,000	$0	$1,000,000	-100%
Jefferson	B	$1,000,000	$1,000,000	$1,000,000	0%
Jennings	A	$1,000,000	$1,000,000	$1,000,000	0%
Johnson	C	$1,000,000	$500,867	$1,000,000	-50%
Knox	B	$1,000,000	$1,000,000	$998,740	0%
Kosciusko	C	$1,000,000	$806,933	$496,802	62%
LaGrange	B	$1,000,000	$0	$977,075	-100%
Lake	C	$1,000,000	$1,000,000	$975,073	3%
La Porte	C	$1,000,000	$1,000,000	$996,975	0%
Lawrence	B	$1,000,000	$675,424	$1,000,000	-32%
Madison	C	$1,328,016	$999,781	$994,354	1%
Marshall	B	$1,000,000	$1,000,000	$1,020,250	-2%
Martin	A	$1,000,000	$997,627	$989,436	1%
Miami	B	$954,607	$939,785	$999,731	-6%
Monroe	C	$987,794	$1,004,026	$1,032,549	-3%
Montgomery	B	$999,542	$1,000,000	$872,159	15%
Morgan	C	$697,394	$1,000,000	$911,086	10%
Newton	A	$0	$0	$736,823	-100%
Noble	B	$1,036,533	$1,000,000	$1,123,400	-11%
Ohio	A	$1,000,000	$714,603	$760,250	-6%
Orange	A	$998,932	$999,058	$962,614	4%
Owen	A	$1,085,969	$961,951	$881,386	9%
Parke	A	$1,002,930	$972,117	$938,991	4%
Perry	A	$1,000,000	$1,000,000	$1,000,000	0%
Pike	A	$981,981	$1,004,357	$1,003,469	0%
Porter	C	$1,000,000	$1,000,000	$1,125,263	-11%
Posey	A	$1,000,000	$1,000,000	$754,122	33%

Table B3. Community Crossings Matching Grant awards—CY 2020–22 (continued)

County	Population category	CY 2022	CY 2021	CY 2020	% difference CY 2020–CY 2021
Pulaski	A	$970,758	$0	$786,413	-100%
Putnam	B	$1,000,000	$1,000,000	$1,000,000	0%
Randolph	A	$856,575	$197,658	$854,058	-77%
Ripley	A	$493,533	$925,109	$955,549	-3%
Rush	A	$462,140	$650,478	$0	N/A
St. Joseph	C	$1,000,000	$1,000,000	$1,000,000	0%
Scott	C	$0	$96,280	$866,372	-89%
Shelby	A	$928,757	$976,929	$997,538	-2%
Spencer	B	$1,015,997	$1,000,000	$1,140,278	-12%
Starke	A	$1,000,000	$682,763	$1,033,750	-34%
Steuben	B	$448,244	$0	$1,000,000	-100%
Sullivan	A	$1,000,000	$1,000,000	$1,000,000	0%
Switzerland	A	$1,004,878	$981,374	$899,960	9%
Tippecanoe	C	$1,000,000	$1,024,247	$999,999	2%
Tipton	A	$1,000,000	$1,320,507	$0	N/A
Union	A	$1,000,000	$1,000,000	$989,880	1%
Vanderburgh	C	$1,098,466	$997,642	$903,163	10%
Vermillion	A	$965,277	$972,873	$1,000,000	-3%
Vigo	C	$1,000,000	$730,058	$1,000,000	-27%
Wabash	B	$961,185	$1,253,241	$137,263	813%
Warren	A	$982,659	$928,627	$976,924	-5%
Warrick	C	$1,004,358	$952,093	$1,073,620	-11%
Washington	A	$1,000,000	$1,000,000	$1,000,000	0%
Wayne	C	$417,328	$458,000	$1,000,000	-54%
Wells	A	$1,017,968	$854,308	$1,329,564	-36%
White	A	$1,040,787	$1,000,000	$1,000,000	0%
Whitley	B	$806,558	$621,299	$983,616	-37%
Total	**N/A**	**$85,054,426**	**$77,945,688**	**$83,323,145**	**-6%**

Sources: Indiana Department of Transportation; U.S. Census Bureau.

Notes:

1. Population categories are A=0–29,999; B=30,000–49,999; and C=50,000+.

2. Marion County is excluded.

3. The Adams County grant for 2020 was a joint grant with the city of Berne.