

National Bridge Inventory: North Carolina

- The state has identified needed repairs on 5,247 bridges.
- This compares to 5,680 bridges that needed work in 2020.
- Over the life of the IIJA, North Carolina will receive a total of \$493.5 million in bridge formula funds, which will help make needed repairs.
- North Carolina currently has access to \$296.1 million of that total, and has committed \$134.2 million towards 43 projects as of June 2024.
- Of the 19,210 bridges in the state, 1,298, or 6.8 percent, are classified as structurally deficient. This means one of the key elements is in poor or worse condition.
- This is down from 1,460 bridges classified as structurally deficient in 2020.
- The deck area of structurally deficient bridges accounts for 5.6 percent of total deck area on all structures.

21

Compared to 19 in 2023

in the nation in % of structurally deficient bridges

1. Iowa	19.0%
20. Montana	7.0%
21. North Carolina	7.0%
22. Hawaii	7.0%

11

Compared to 10 in 2023

in the nation in # of structurally deficient bridges

1. Iowa	4,544
10. Kansas	1,310
11. North Carolina	1,298
12. Michigan	1,281

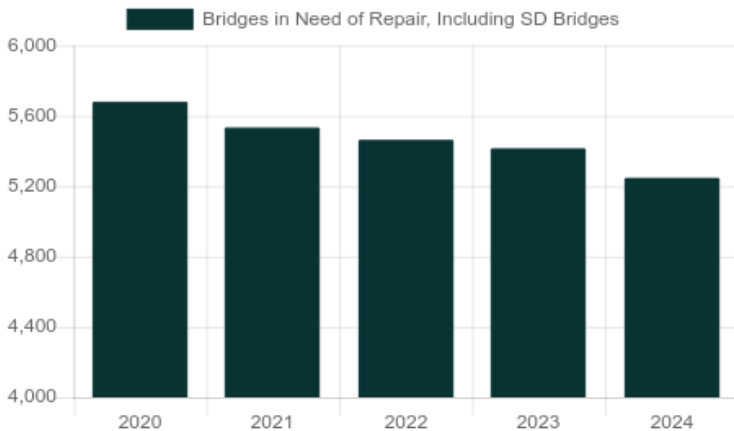
23

Compared to 22 in 2023

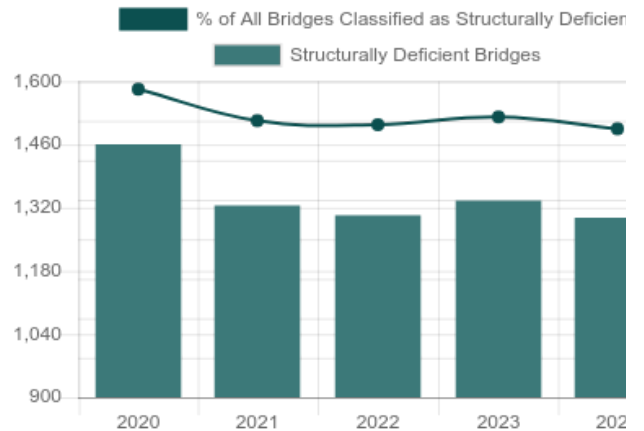
in the nation in % of structurally deficient bridge deck area

1. Rhode Island	14.0%
22. Montana	6.0%
23. North Carolina	6.0%
24. North Dakota	5.0%

Number of Bridges in Need of Repair, Including Structurally Deficient Bridges



Number of Structurally Deficient Bridges



Top Most Traveled Structurally Deficient Bridges in North Carolina

County	Year Built	Daily Crossings	Type of Bridge	Location
Mecklenburg	1971	115,000	Urban Interstate	I277 & NC16 over US29/Nc49 (Graham St.)
Mecklenburg	1967	94,500	Urban Interstate	I277 & NC16 over Brevard Street
Mecklenburg	1967	94,500	Urban Interstate	I277 & NC16 over North College Street
Gaston	1962	80,000	Rural Interstate	I85 over Abernathy Creek
Forsyth	1964	79,000	Urban freeway/expressway	US52 over 28th Street
Forsyth	1964	79,000	Urban freeway/expressway	US52 over 25th Street
Forsyth	1958	74,500	Urban freeway/expressway	I40 Bus over Brushy Fork Creek
Forsyth	1959	66,000	Urban freeway/expressway	Nc67 over US421
Forsyth	1960	62,000	Urban freeway/expressway	US421 over Little Creek
Guilford	1968	52,000	Urban freeway/expressway	Sr2254 over Southern Railroad
New Hanover	1985	51,000	Urban Interstate	I40,US117,Nc132 over Smith Creek
Durham	1956	51,000	Urban freeway/expressway	US15/US501NBL over SR1308
Buncombe	1968	48,000	Urban other principal arterial	US19,23 over I-240,Off Ramps
Forsyth	1953	48,000	Urban freeway/expressway	I40 Bus over Salem Creek
Mecklenburg	1970	47,500	Urban Interstate	I277 NBI, US74 EBL over I77, US21
Mecklenburg	1970	47,500	Urban Interstate	I277 SBL, US74 WBL over I77, US21
Wake	1941	45,500	Urban other principal arterial	US1NBL over Seaboard RR
Guilford	1968	44,000	Urban other principal arterial	US220 over Yanceyville Street
Wake	1959	43,750	Urban Interstate	I440,US1 over SR1012
Haywood	1969	39,000	Urban freeway/expressway	US19,23,74 over SR1527
Forsyth	1981	33,500	Urban Interstate	I74, US311 over Fiddlers Creek
Guilford	1981	33,250	Urban Interstate	I85N over Richland Creek
Guilford	1953	33,000	Urban freeway/expressway	I85Bus,US29,US70 over SR19
Brunswick	1968	33,000	Urban freeway/expressway	US17 over US76
Orange	1958	32,750	Urban Interstate	I85S over SR1713

Bridge Inventory: North Carolina

Type of Bridge	Number of Bridges	Area of All Bridges (sq. meters)	Daily Crossings on All Bridges	Number of Structurally Deficient Bridges	Area of Structurally Deficient Bridges (sq. meters)	Daily Crossings on Structurally Deficient Bridges
Rural Interstate	357	363,529	7,532,025	11	14,938	285,500
Rural arterial	934	1,085,846	9,201,626	22	53,895	223,575
Rural minor arterial	686	418,678	4,055,510	33	18,725	184,550
Rural major collector	1,777	1,000,004	5,030,679	117	126,823	300,390
Rural minor collector	1,425	478,829	2,045,121	107	29,622	111,344
Rural local road	7,137	1,492,230	3,965,079	626	84,160	253,820
Urban Interstate	1,092	1,773,016	41,768,816	22	20,093	882,800
Urban freeway/expressway	691	1,011,961	16,080,134	29	25,393	935,900
Urban other principal arterial	934	979,260	17,623,252	48	49,354	823,300
Urban minor arterial	1,133	1,120,874	13,928,520	73	119,077	795,400
Urban collector	1,112	668,778	7,059,780	69	36,966	453,300
Urban local road	1,932	684,399	5,660,111	141	36,660	305,909
Total	19,210	11,077,403	133,950,653	1,298	615,709	5,555,788

Proposed Bridge Work

Type of Work	Number of Bridges	Cost to Repair (in millions)	Daily Crossings	Area of Bridges (sq. meters)
Bridge replacement	748	\$880	2,941,640	405,114
Widening & rehabilitation	0	\$0	0	0
Rehabilitation	4,292	\$4,329	31,576,418	2,740,897
Deck rehabilitation/replacement	0	\$0	0	0
Other structural work	207	\$71	279,226	53,203
Total	5,247	\$5,281	34,797,284	3,199,215

About the data:

Data and cost estimates are from the Federal Highway Administration (FHWA) National Bridge Inventory (NBI), downloaded on August 20, 2024. Note that specific conditions on bridges may have changed as a result of recent work or updated inspections.

Effective January 1, 2018, FHWA changed the definition of structurally deficient as part of the final rule on highway and bridge performance measures, published May 20, 2017 pursuant to the 2012 federal aid highway bill Moving Ahead for Progress in the 21st Century Act (MAP-21). Two measures that were previously used to classify bridges as structurally deficient are no longer used. This includes bridges where the overall structural evaluation was rated in poor or worse condition, or where the adequacy of waterway openings was insufficient.

The new definition limits the classification to bridges where one of the key structural elements—the deck, superstructure, substructure or culverts, are rated in poor or worse condition. During inspection, the conditions of a variety of bridge elements are rated on a scale of 0 (failed condition) to 9 (excellent condition). A rating of 4 is considered “poor” condition.

Cost estimates have been derived by ARTBA, based on 2023 average bridge replacement costs for structures on and off the National Highway System, [published by FHWA](#). Bridge rehabilitation costs are estimated to be 68 percent of replacement costs. A bridge is considered to need repair if the structure has identified repairs as part of the NBI, a repair cost estimate is supplied by the bridge owner or the bridge is classified as structurally deficient. Please note that for a few states, the number of bridges needing to be repaired can vary significantly from year to year, and reflects the data entered by the state.

Bridges are classified by FHWA into types based on the functional classification of the roadway on the bridge. Interstates comprise routes officially designated by the Secretary of Transportation. Other principal arterials serve major centers of urban areas or provide mobility through rural areas. Freeways and expressways have directional lanes generally separated by a physical barrier, and access/egress points generally limited to on- and off-ramps. Minor arterials serve smaller areas and are used for trips of moderate length. Collectors funnel traffic from local roads to the arterial network; major collectors have higher speed limits and traffic volumes and are longer in length and spaced at greater intervals, while minor collectors are shorter and provide service to smaller communities. Local roads do not carry through traffic and are intended for short distance travel.
