American Road & Transportation Builders Association

National Bridge Inventory: North Dakota

- The state has identified needed repairs on 1,325 bridges.
- This compares to 1,386 bridges that needed work in 2020.
- Over the life of the IIJA, North Dakota will receive a total of $225.0 million in bridge formula funds, which will help make needed repairs.
- North Dakota currently has access to $135.0 million of that total, and has committed $133.6 million towards 146 projects as of June 2024.
- Of the 4,255 bridges in the state, 467, or 11.0 percent, are classified as structurally deficient. This means one of the key elements is in poor or worse condition.
- This is up from 444 bridges classified as structurally deficient in 2020.
- The deck area of structurally deficient bridges accounts for 5.2 percent of total deck area on all structures.

10

Compared to 10 in 2023

in the nation in % of structurally deficient bridges

1. Iowa	19.0%
9. Michigan	11.0%
10. North Dakota	11.0%
11. New York	9.0%

28

Compared to 28 in 2023

in the nation in # of structurally deficient bridges

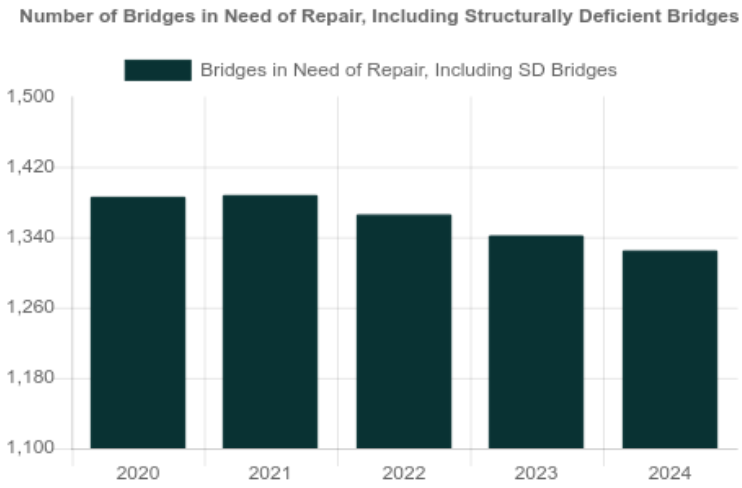
1. Iowa	4,544
27. Massachusetts	470
28. North Dakota	467
29. Washington	462

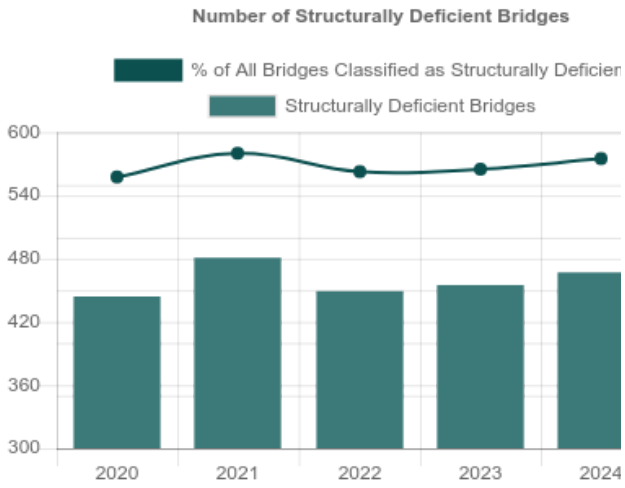
24

Compared to 25 in 2023

in the nation in % of structurally deficient bridge deck area

1. Rhode Island	14.0%
23. North Carolina	6.0%
24. North Dakota	5.0%
25. Kentucky	5.0%





Top Most Traveled Structurally Deficient Bridges in North Dakota

County	Year Built	Daily Crossings	Type of Bridge	Location
Grand Forks	1963	21,500	Urban other principal arterial	US Highway 2 over Red River of The North
Grand Forks	1968	8,200	Urban Interstate	Interstate 29 over Nd297/Demers Ave Int-Gf
Cass	1971	8,162	Urban minor arterial	County Highway over Sheyenne River
Grand Forks	1950	4,650	Rural Interstate	Interstate 29 over County Drain No 11
Stutsman	1958	4,100	Urban Interstate	Interstate 94 over BNRR & SE Jamestown Int
Pembina	1958	2,850	Rural Interstate	Interstate 29 over Drain ditch #39
Morton	1962	2,250	Rural Interstate	Interstate 94 over Co Hwy RR/Eagle Nest Int
Traill	1977	2,010	Rural arterial	ND Highway 2 over Goose River
Traill	1971	1,970	Rural arterial	ND Highway 2 over Intermittent Stream
Williams	1988	1,620	Rural major collector	ND Highway 40 over BNRR Sep overhead
Billings	1964	1,300	Rural Interstate	Interstate 94 over Sheep Creek
Pembina	1951	1,250	Rural arterial	US Highway 81 over Creek
Oliver	1971	940	Rural arterial	ND Highway 2 over Creek
Hettinger	1960	830	Rural minor arterial	ND Highway 22 over Cannonball River
Mercer	1950	780	Rural arterial	ND Highway 2 over Branch of Raymond Creek
Cass	1985	700	Rural minor arterial	ND Highway 18 over Maple River
Sargent	1951	650	Rural minor arterial	ND Highway 11 over Wild Rice River
McLean	1959	640	Rural minor arterial	ND Highway 41 over Painted Woods Creek
Towner	1931	640	Rural minor arterial	ND Highway 17 over Creek
Dunn	1957	570	Rural arterial	ND Highway 2 over Creek
Towner	1962	560	Rural minor arterial	ND Highway 17 over Mauvais Coulee
Cavalier	1931	490	Rural arterial	ND Highway 1 over Creek
McHenry	1939	457	Rural major collector	County Highway over Cut Bank Creek
Benson	1936	450	Rural arterial	US Highway 281 over BNRR Sep.
McHenry	1970	439	Rural major collector	County Road 2511 over Hay Creek Coulee

Bridge Inventory: North Dakota

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	147	94,255	678,882	4	2,126	11,050
Rural arterial	370	196,482	746,184	10	2,180	9,110
Rural minor arterial	254	111,687	257,996	7	2,643	4,410
Rural major collector	884	247,493	269,852	30	10,666	6,976
Rural minor collector	12	3,281	1,295	2	796	400
Rural local road	2,322	339,759	104,839	408	40,771	10,596
Urban Interstate	59	81,672	757,935	2	2,338	12,300
Urban freeway/expressway	0	0	0	0	0	0
Urban other principal arterial	81	148,756	805,711	1	7,880	21,500
Urban minor arterial	63	85,204	362,963	1	336	8,162
Urban collector	22	13,767	58,138	0	0	0
Urban local road	41	13,077	54,555	2	218	130
Total	4,255	1,335,432	4,098,350	467	69,953	84,634

Proposed Bridge Work

Type of Work	Number of Bridges	Cost to Repair (in millions)	Daily Crossings	Area of Bridges (sq. meters)
Bridge replacement	484	$236	44,654	83,847
Widening & rehabilitation	374	$147	130,065	76,488
Rehabilitation	394	$172	187,447	86,972
Deck rehabilitation/replacement	22	$37	74,254	20,820
Other structural work	51	$57	105,266	26,630
Total	1,325	$650	541,686	294,757

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.