

# National Bridge Inventory: South Dakota



## 2021 Bridge Profile

### Highlights from FHWA's 2020 National Bridge Inventory Data

- Of the 5,880 bridges in the state, 1,038, or 17.7 percent, are classified as structurally deficient. This means one of the key elements is in poor or worse condition.
- This is down from 1,055 bridges classified as structurally deficient in 2016.
- The deck area of structurally deficient bridges accounts for 9.9 percent of total deck area on all structures.
- 2 of the structurally deficient bridges are on the Interstate Highway System. A total of 98.7 percent of the structurally deficient bridges are not on the National Highway System, which includes the Interstate and other key roads linking major airports, ports, rail and truck terminals.
- 1,153 bridges are posted for load, which may restrict the size and weight of vehicles crossing the structure.
- The state has identified needed repairs on 2,477 bridges at an estimated cost of \$992.9 million.

### Bridge Inventory

Type of Bridge <sup>4</sup>	All Bridges			Structurally Deficient Bridges		
	Total Number	Area (sq. meters)	Daily Crossings	Total Number	Area (sq. meters)	Daily Crossings
<b>Rural Bridges</b>						
Interstate	333	199,879	1,807,504	1	611	6,995
Other principal arterial	455	258,400	970,291	10	3,955	13,508
Minor arterial	524	238,256	671,106	15	16,605	14,051
Major collector	1,157	336,498	454,527	170	46,259	62,452
Minor collector	216	61,693	34,204	37	5,743	4,200
Local	2,777	397,174	215,662	783	82,743	47,128
<b>Urban Bridges</b>						
Interstate	121	110,330	1,615,710	1	980	11,610
Freeway/expressway	10	15,375	83,515	0	0	0
Other principal arterial	75	87,347	815,078	2	11,077	34,421
Minor arterial	88	78,985	627,825	1	426	4,837
Collector	56	33,826	203,481	9	6,792	48,667
Local	68	18,105	66,583	9	2,202	4,773
<b>Total</b>	<b>5,880</b>	<b>1,835,867</b>	<b>7,565,486</b>	<b>1,038</b>	<b>177,392</b>	<b>252,642</b>

### Proposed Bridge Work

Type of Work	Number	Cost (millions)	Daily Crossings	Area (sq. meters)
Bridge replacement	1,327	\$603,164.9	686,317	285,428
Widening & rehabilitation	5	\$5,082.3	46,666	2,857
Rehabilitation	445	\$173,992.4	176,167	125,419
Deck rehabilitation/replacement	51	\$49,750.2	121,647	32,694
Other work	649	\$160,920.1	246,808	118,481
<b>Total</b>	<b>2,477</b>	<b>\$992,910.0</b>	<b>1,277,605</b>	<b>564,878</b>

### Top Most Traveled Structurally Deficient Bridges in South Dakota

County	Year Built	Daily Crossings	Type of Bridge	Location
Brown	1954	18,971	Urban other principal arterial	US012 over Moccasin Ck
Minnehaha	1979	18,174	Urban collector	49th Street over Big Sioux River
Hughes	1962	15,450	Urban other principal arterial	US014 over Missouri Rv
Pennington	1959	11,610	Urban Interstate	I090 E over Boxelder Ck
Minnehaha	1912	10,163	Urban collector	8th Street over Big Sioux River
Minnehaha	1975	7,850	Urban collector	6th Street over Big Sioux River
Minnehaha	1964	6,995	Rural Interstate	I090 W over Sd019
Codington	1941	4,837	Urban minor arterial	3rd Avenue NW over Big Sioux River
Pennington	1974	4,700	Urban collector	Chapel Lane over Rapid Ck
Minnehaha	1978	3,377	Rural major collector	478th Ave, Hwy 121 over Big Sioux River

**About the data:** Data is from the Federal Highway Administration (FHWA) National Bridge Inventory (NBI), downloaded on March 11, 2021. 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 2019 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.

© 2021 The American Road & Transportation Builders Association (ARTBA). All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission of ARTBA.