

Highlights from FHWA's 2020 National Bridge Inventory Data

- Of the 1,153 bridges in the state, 84, or 7.3 percent, are classified as structurally deficient. This means one of the key elements is in poor or worse condition.
- This is up from 62 bridges classified as structurally deficient in 2016.
- The deck area of structurally deficient bridges accounts for 2.6 percent of total deck area on all structures.
- 3 of the structurally deficient bridges are on the Interstate Highway System. A total of 63.1 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.
- 165 bridges are posted for load, which may restrict the size and weight of vehicles crossing the structure.
- The state has identified needed repairs on 1,109 bridges at an estimated cost of \$13.8 billion.

Bridge Inventory

Type of Bridge ⁴	All Bridges			Structurally Deficient Bridges		
	Total Number	Area (sq. meters)	Daily Crossings	Total Number	Area (sq. meters)	Daily Crossings
Rural Bridges						
Interstate	23	195,116	1,015,800	1	1,463	31,600
Other principal arterial	78	35,343	1,085,434	7	1,387	78,635
Minor arterial	181	101,715	1,548,711	19	10,718	76,944
Major collector	128	26,295	400,288	8	1,163	22,038
Minor collector	31	5,309	89,999	4	298	2,122
Local	120	28,865	71,958	17	2,775	10,720
Urban Bridges						
Interstate	186	748,035	15,221,860	2	1,498	31,400
Freeway/expressway	83	54,191	2,728,002	1	520	58,500
Other principal arterial	99	69,193	2,885,213	16	11,174	522,935
Minor arterial	43	53,734	756,440	2	2,498	48,525
Collector	74	22,681	487,334	1	140	9,543
Local	107	22,412	247,212	6	1,268	14,051
Total	1,153	1,362,890	26,538,250	84	34,901	907,013

Proposed Bridge Work

Type of Work	Number	Cost (millions)	Daily Crossings	Area (sq. meters)
Bridge replacement	1	\$1,255.5	500	50
Widening & rehabilitation	1	\$2,829.9	775	166
Rehabilitation	7	\$366,282.9	8,585	21,430
Deck rehabilitation/replacement	34	\$90,955.7	491,135	7,940
Other work	1,066	\$13,313,431.6	25,372,238	1,214,131
Total	1,109	\$13,774,755.6	25,873,233	1,243,716

Top Most Traveled Structurally Deficient Bridges in Hawaii

County	Year Built	Daily Crossings	Type of Bridge	Location
Honolulu	1934	58,500	Urban freeway/expressway	Kal Hwy over Niu Strm
Honolulu	1952	57,600	Urban other principal arterial	Nimitz Hwy over Slip Cover #4 Hon Hbr
Honolulu	1932	57,600	Urban other principal arterial	Nimitz Hwy over Nuuanu Strm (W.B)
Honolulu	1949	57,600	Urban other principal arterial	Nimitz Hwy over Kapalama Canal (E.B)
Honolulu	1936	42,700	Urban other principal arterial	Kam Hwy over Waimalu Strm(East Bn)
Maui	1980	42,400	Urban other principal arterial	Piilani Hwy over Waiakoa Gulch
Maui	1980	42,400	Urban other principal arterial	Piilani Hwy over Waipuilani Gulch Br
Maui	1980	42,400	Urban other principal arterial	Piilani Hwy over Kulanihakoi Gulch
Honolulu	1965	36,500	Urban other principal arterial	Farr Hwy over Dbl Sectl PI Culvt-Strm
Honolulu	1967	33,735	Urban other principal arterial	Farr Hwy over Maipalaoa Strm

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.

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