National Bridge Inventory: Puerto Rico

American Road & Transportation Builders Association

2021 Bridge Profile

Highlights from FHWA's 2020 National Bridge Inventory Data

- Of the 2,334 bridges in the Commonwealth, 282, or 12.1 percent, are classified as structurally deficient. This means one of the key elements is in poor or worse condition.
- This is up from 268 bridges classified as structurally deficient in 2016.
- The deck area of structurally deficient bridges accounts for 9.5 percent of total deck area on all structures.
- 36 of the structurally deficient bridges are on the Interstate Highway System. A total of 74.8 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.
- 860 bridges are posted for load, which may restrict the size and weight of vehicles crossing the structure.
- The state has identified needed repairs on 1,726 bridges at an estimated cost of $2.7 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	203	275,198	5,008,686	18	25,295	381,094
Other principal arterial	77	206,630	1,217,374	8	22,530	157,010
Minor arterial	152	88,802	1,475,426	20	6,794	212,318
Major collector	193	72,437	904,598	24	4,382	114,437
Minor collector	143	34,709	427,949	24	4,659	78,451
Local	431	124,199	568,248	72	12,236	59,821
Urban Bridges						
Interstate	247	531,736	14,879,706	18	49,782	1,320,515
Freeway/expressway	113	276,065	5,075,863	6	15,625	199,501
Other principal arterial	210	301,059	6,489,144	21	33,292	667,747
Minor arterial	172	111,034	2,326,347	26	20,583	332,611
Collector	169	91,819	1,557,113	23	6,756	233,258
Local	224	99,473	721,637	22	7,555	69,258
Total	**2,334**	**2,213,161**	**40,652,088**	**282**	**209,489**	**3,826,021**

Proposed Bridge Work

Type of Work	Number	Cost (millions)	Daily Crossings	Area (sq. meters)
Bridge replacement	246	$145,364.6	1,529,536	46,879
Widening & rehabilitation	252	$134,133.5	2,380,706	63,946
Rehabilitation	1,192	$2,262,439.0	26,020,018	1,187,424
Deck rehabilitation/replacement	25	$133,757.7	561,214	73,308
Other work	11	$4,158.8	95,090	2,169
Total	**1,726**	**$2,679,853.6**	**30,586,564**	**1,373,726**

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Top Most Traveled Structurally Deficient Bridges in Puerto Rico

County	Year Built	Daily Crossings	Type of Bridge	Location
San Juan	1972	246,900	Urban Interstate	Pr 18 over Chardon Street
San Juan	1967	246,900	Urban Interstate	Pr 18 over Pr 23 (Roosevelt Av.)
Guaynabo	1971	195,994	Urban Interstate	Pr 22 over Pr 28
San Juan	1980	91,950	Urban Interstate	Pr 22 Southbound over Martin Pe¥A Channel
San Juan	1979	83,247	Urban Interstate	Pr 52 Southbound over Pr 177
San Juan	1967	79,000	Urban other principal arterial	Pr 1 Northbound over San Roberto Street
San Juan	1967	79,000	Urban other principal arterial	Pr 1 Southbound over San Roberto Street
San Juan	1976	79,000	Urban other principal arterial	Pr 1 over Pr 52
San Juan	1977	79,000	Urban other principal arterial	Pr 1 over Pr 18 (Las Americas Exp)
Las Piedras	1965	66,300	Rural arterial	Pr 30 Westbound over Humacao River

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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.