

National Bridge Inventory: Pennsylvania



2021 Bridge Profile

Highlights from FHWA's 2020 National Bridge Inventory Data

- Of the 22,965 bridges in the Commonwealth, 3,353, or 14.6 percent, are classified as structurally deficient. This means one of the key elements is in poor or worse condition.
- This is down from 4,430 bridges classified as structurally deficient in 2016.
- The deck area of structurally deficient bridges accounts for 7.9 percent of total deck area on all structures.
- 101 of the structurally deficient bridges are on the Interstate Highway System. A total of 90.3 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.
- 2,164 bridges are posted for load, which may restrict the size and weight of vehicles crossing the structure.
- The state has identified needed repairs on 11,946 bridges at an estimated cost of \$20.7 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	1,043	1,012,091	18,648,659	34	30,370	829,240
Other principal arterial	980	1,032,033	7,844,546	34	11,690	363,291
Minor arterial	1,463	544,934	5,426,795	143	27,690	435,254
Major collector	1,899	584,823	3,122,678	191	50,354	308,702
Minor collector	2,047	419,482	1,475,669	288	49,094	217,180
Local	7,180	1,130,152	2,856,886	1,667	206,237	562,372
Urban Bridges						
Interstate	1,448	3,003,060	56,274,079	67	142,603	2,916,078
Freeway/expressway	924	1,337,559	25,016,104	34	59,175	1,146,542
Other principal arterial	1,445	1,849,180	23,348,595	161	176,458	2,666,207
Minor arterial	1,516	1,088,860	13,880,390	180	108,600	1,635,816
Collector	1,449	601,271	5,868,770	202	55,693	794,300
Local	1,571	597,422	3,867,282	352	111,234	728,546
Total	22,965	13,200,867	167,630,448	3,353	1,029,198	12,603,528

Proposed Bridge Work

Type of Work	Number	Cost (millions)	Daily Crossings	Area (sq. meters)
Bridge replacement	1,861	\$1,588,475.5	5,149,746	400,509
Widening & rehabilitation	113	\$443,118.2	815,011	155,840
Rehabilitation	7,506	\$14,553,864.8	67,642,230	5,195,676
Deck rehabilitation/replacement	945	\$1,727,962.9	6,371,367	623,187
Other work	1,521	\$2,368,155.0	8,027,817	854,922
Total	11,946	\$20,681,576.4	88,006,171	7,230,135

Top Most Traveled Structurally Deficient Bridges in Pennsylvania

County	Year Built	Daily Crossings	Type of Bridge	Location
Philadelphia	1967	203,528	Urban Interstate	Interstate 95 over Comly Street
Philadelphia	1967	203,528	Urban Interstate	Interstate 95 over Fraley Street
Philadelphia	1965	182,092	Urban Interstate	Delaware Expway. over Sergeant & Huntingdon St
Philadelphia	1971	182,092	Urban Interstate	Delaware Expway. over Palmer-Cumberland Strs.
Philadelphia	1968	163,599	Urban Interstate	Interstate 95 over earth fill & sewer access
Philadelphia	1965	128,681	Urban Interstate	Delaware Expway. over Venango Street
Philadelphia	1965	128,681	Urban Interstate	Delaware Expway. over Wheatsheaf Lane
Montgomery	1952	98,451	Urban Interstate	Schuylkill Expway. over Righters Ferry Road
Philadelphia	1960	86,820	Urban freeway/expressway	Roosevelt Blvd Ext over Roberts Ave;Septa;CSX
Chester	1961	76,364	Urban freeway/expressway	Route 30 By-Pass over Creek Road;Brandywine Cr

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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