

The Bridge Division oversees and provides assistance in bridge program and project development; structural and geotechnical design; plan development; plans, specifications, and estimate (PS&E) review; bridge safety inspection; and bridge construction and maintenance support to the districts. The Bridge Division administers the following programs for TxDOT:

- Federal Bridge Safety Inspection Program.
- Federal Highway Bridge Program, including TxDOT's Participation-Waived Project/Equivalent-Match Project (PWP/EMP) Program.

Mission

The Bridge Division's mission is to provide support and leadership on all matters relating to bridges and other transportation structures.

Vision

- Bridge Division services and solutions are recognized and respected as safe, innovative, cost-effective, durable, environmentally sensitive, aesthetic, and timely.
- The Bridge Division is dedicated to developing and retaining a diverse team of skilled professionals.

Web Addresses

Intranet: <http://crossroads/org/brg>

Internet:

http://www.txdot.gov/business/contractors_consultants/bridge/default.htm

Bridge Manuals:

<http://onlinemanuals.txdot.gov/manuals/AlphaList.html>

Bridge Standards:

<http://www.txdot.gov/business/standardplanfiles.htm>

Load-Restricted Bridge Map:

http://www.txdot.gov/business/motor_carrier/roadways/restricted_bridge.htm

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Bridge Facts

FY 2010

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BRIDGE TERMS AND DEFINITIONS

Definition of Bridge: An on-system or off-system structure, including supports, erected over a depression or an obstruction such as water, a highway, or a railway; having a roadway or track for carrying traffic or other moving loads; and having an opening measured along the center of the roadway of more than 20 feet between faces of abutments, spring lines of arches, or extreme ends of the openings for multiple box culverts or multiple pipes that are 60 inches or more in diameter and that have a clear distance between openings of less than half of the smallest pipe diameter.

Highway Bridge Program: The Highway Bridge Program (HBP) is a federal-aid program that provides funding to enable states to improve the condition of their highway bridges through replacement, rehabilitation, and systematic preventive maintenance.

Structurally Deficient and Functionally Obsolete: The terms "structurally deficient" and "functionally obsolete" are used by the Federal Highway Administration to designate bridges eligible for federal funding. Bridges classified as structurally deficient or functionally obsolete are not unsafe. A structurally deficient bridge is one with routine maintenance concerns that do not pose a safety risk or one that is frequently flooded. To remain open to traffic, structurally deficient bridges are often posted with reduced weight limits that restrict the gross weight of vehicles using the bridges. Classification as functionally obsolete means the bridge met current design standards when built, but over time has become obsolete due to an increase in traffic volume. Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths or vertical clearance to serve current traffic demands or are occasionally flooded.

Sub-standard-for-Load-Only: The term "sub-standard-for-load-only" is used by TxDOT to designate bridges in relatively good condition that do not have specific maintenance concerns, but do have a load-carrying capacity less than the state legal limit for public roadways. Sub-standard-for-load-only bridges are posted with reduced weight limits. These bridges are not classified as structurally deficient or functionally obsolete under FHWA definitions.

On-System Bridge: A vehicular bridge owned and maintained by the state on the TxDOT-designated highway system.

Off-System Bridge: A vehicular bridge owned and maintained by a county, city, or other local or regional governmental unit, and not on the TxDOT-designated highway system.

Historic Bridge: A bridge listed on or eligible to be listed on the National Register of Historic Places.

FY 2010 BRIDGE STATISTICS

	Number	Sq. ft. (Deck)
Statewide	51,557	465,814,726
On-system	33,679	390,145,630
Off-system	17,878	75,669,096
Structurally deficient	1,553	8,495,910
On-system	305	6,286,340
Off-system	1,248	2,209,570
Functionally obsolete	7,433	75,505,190
On-system	3,471	53,003,410
Off-system	3,962	22,501,780
Sub-standard-for-load-only	1,151	1,734,772
On-system	94	359,955
Off-system	1,057	1,374,817

Number of international bridges

There are twenty-four vehicular international bridges along the Texas and Mexico border.

Number of bridges over waterways

Statewide	42,863
On-system	25,594
Off-system	17,269

Number of steel-truss type bridges

Statewide	221
On-system	39
Off-system	182

Number of suspension-type bridges

Statewide	4
On-system	0
Off-system	2 open to traffic 2 closed to traffic

Average bridge construction cost per square foot of deck area

The average structure unit cost during fiscal year 2010 for constructing bridge structures was:

- On-system span-type bridge: \$52.97 per sq. ft.
- On-system culvert: \$39.60 per sq. ft.
- Off-system span-type bridge: \$58.52 per sq. ft.
- Off-system culvert: \$58.80 per sq. ft.

Asset value of bridges

The historical cost of capitalized on-system state bridges is \$18.8 billion with accumulated depreciation totaling \$10.5 billion. TxDOT's policy is to capitalize only those bridges and improvements with a cost of at least \$500,000.

Average age of Texas bridges

On-system years – 43 years
Off-system years – 31 years

FY 2010 CONTRACT STATISTICS

Existing bridges let to contract for replacement or rehabilitation, FY2010

On-system	275
Value of contracts	\$320.4M
Off-system	155
Value of contracts	\$60.1M

New-location bridges let to contract, FY2010

On-system	169
Value of contracts	\$385.3M
Off-system	26
Value of contracts	\$34.9M

GENERAL INFORMATION

Highest Bridge

The Rainbow Bridge (SH 87) near Port Arthur has 176.9 feet of clearance between the bridge and the water.

Longest Bridges

The longest bridge on the National Bridge Inventory is the Pharr/Reynosa Bridge over the Rio Grande River. It is 15,770 feet long. This off-system bridge is partially owned by Mexico.

The longest on-system bridge is the Sabine River/Toledo Bend Bridge on SH 21. It is 13,196 feet long. This on-system bridge is partially owned by the State of Louisiana.

The longest on-system bridge fully owned by the State of Texas is IH 45 Southbound crossing IH 30, US 75, and the DART Rail Line in Dallas. It is 13,192 feet long.

The longest on-system bridge fully owned by the State of Texas and spanning a body of water is the Queen Isabella Memorial Bridge at South Padre Island. It is 12,510 feet long.

Bridge with Longest Span

The main span of the Fred Hartman Bridge (SH 146) over the Houston Ship Channel is 1,250 feet long. The bridge is owned by the State of Texas.

Oldest Bridges

The oldest on-system bridge is FM 51 over Town Creek in Parker County, built in 1911. There are numerous off-system bridges dating back to 1900.