



State of Georgia Bridges

Bill DuVall, P.E., M.S.C.E.
State Bridge Engineer

November 14, 2018



Overview

- State of Georgia's Bridge Condition
- Funding – Maintaining Bridge Infrastructure
- Bridge Programs and Benefits



The State of Georgia's Bridges

Bridge Conditions in Georgia for All Structures

	Count	% by Deck Area
All Structures	14,689	100
All Structures in Good Condition	6,212	46
All Structures in Fair Condition	8,103	52
All Structures in Poor Condition	374	1.6

The State of Georgia's Bridges

Bridge Conditions in Georgia for All National Highway System

	Count	% by Deck Area
All NHS Structures	4,300	100
NHS Structures in Good Condition	1,997	47
NHS Structures in Fair Condition	2,285	52
NHS Structures in Poor Condition	18	1

Inventory Growth

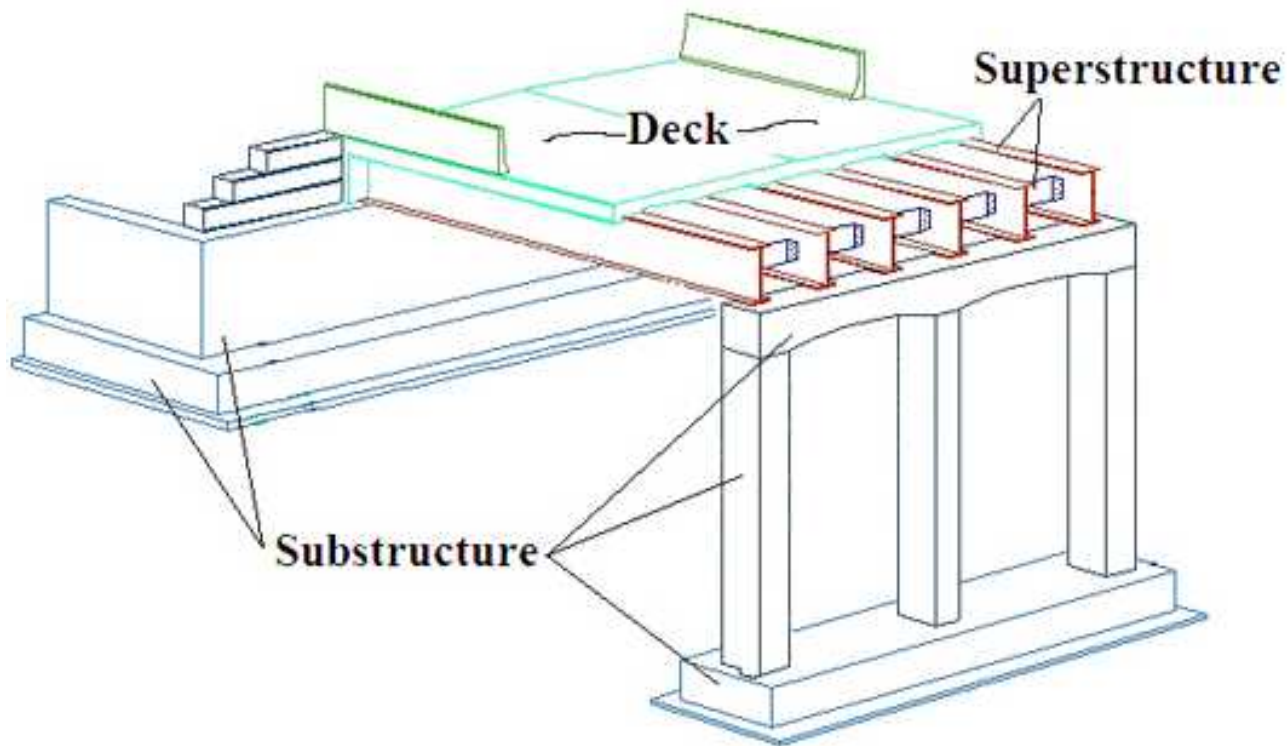
	# Bridges	Growth
2015	14,603	--
2016	14,640	37
2017	14,668	28
2018	14,689	¹ 21
	Net Increase	86

¹ Does not includes 38 bridges on NWC



National Bridge Inspection Standards (NBIS)

Condition Evaluation



Condition Rating for Bridges

Good Condition

- 9 – Excellent
- 8 – Very Good
- 7 – Good (some minor problems)



Condition Rating for Bridges

Fair Condition

- 6 – Satisfactory (structural elements show minor deterioration)
- 5 – Fair (all primary structural elements are sound but may have minor section loss)



Condition Rating for Bridges

Poor Condition

- 4 – Poor (advanced section loss)
- 3 – Serious (loss of section, affecting primary structural members, local failures possible)
- 2 – Critical (advanced section loss, without close monitoring structure may need to be closed)
- 1 – “Imminent” Failure
- 0 - Failed



AASHTO Guide Manual for Bridge Element Inspection

Element Level Data

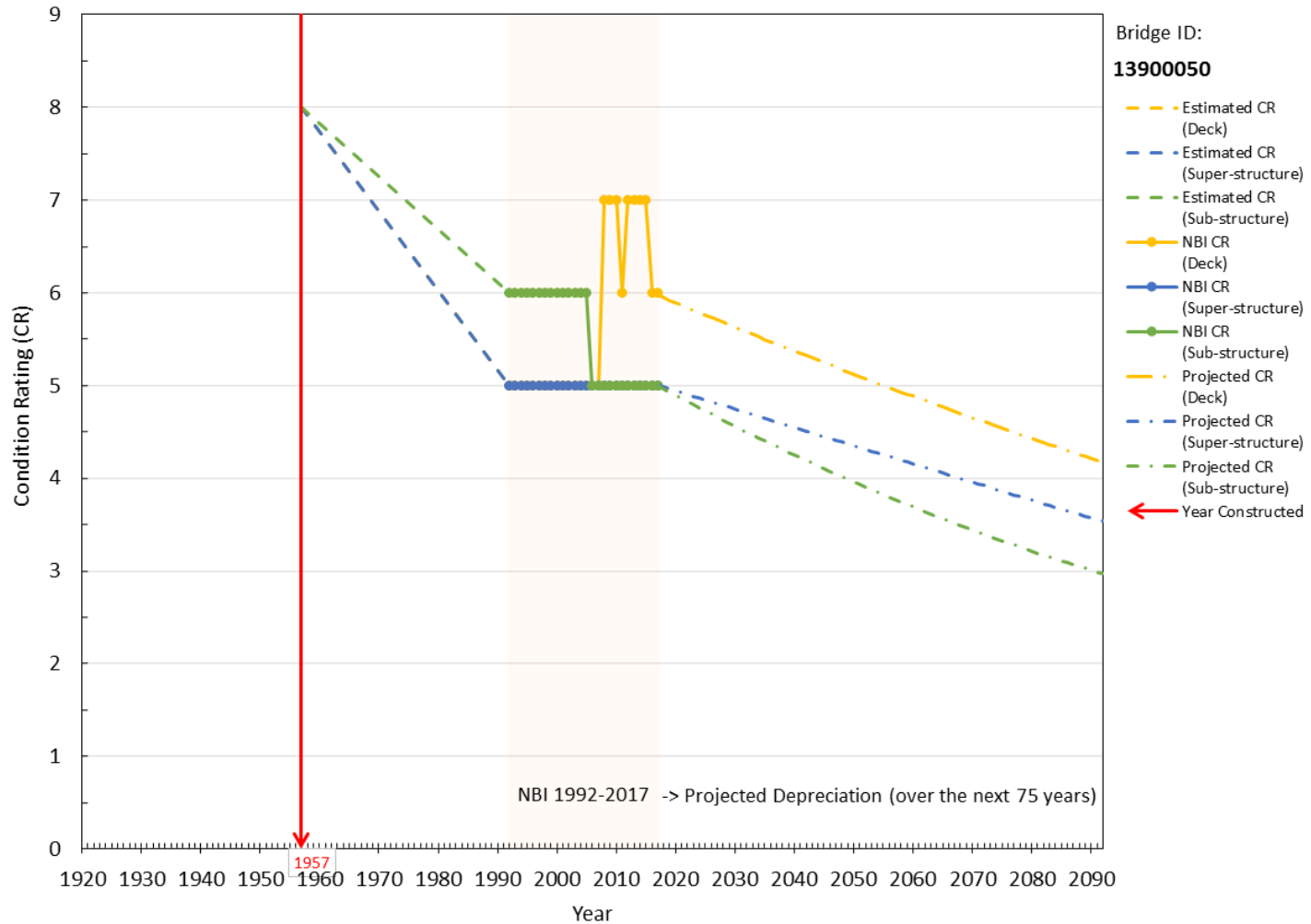
- Introduced in early 1990s
- Required for all NHS Bridges in 2013
- Captures information about bridge elements by use of Four Condition States and the amounts of each element in each state
- Allows better manipulation of data to make management decisions than use of one code for an entire Bridge Component (Deck, Super, Sub, etc.)

Element Level Decision Matrix

Bridge Deck Evaluation

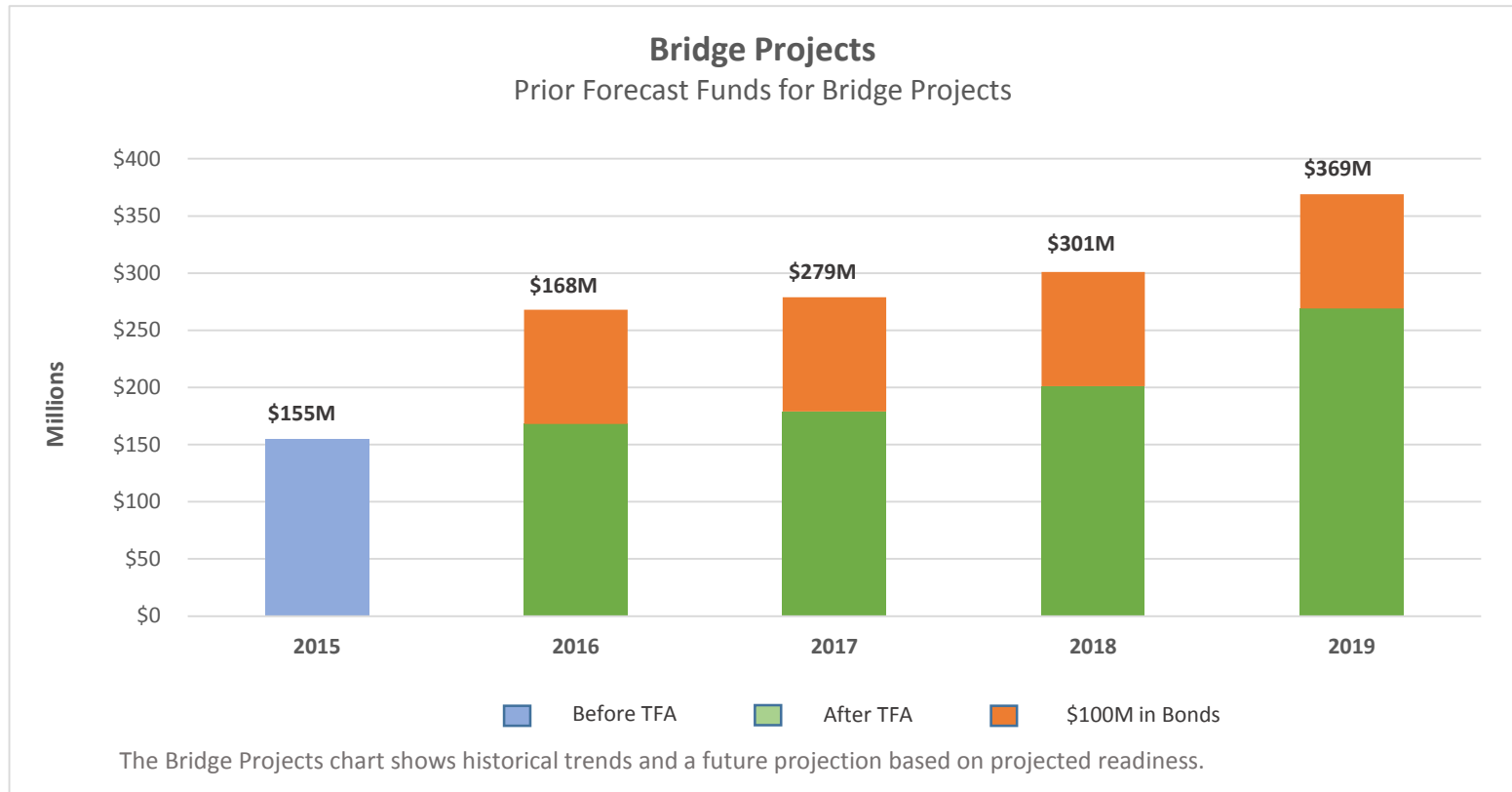
Defect	Condition States			
	1	2	3	4
	Good	Fair	Poor	Severe
Delamination/Spall	None	Delaminated. Spall 1 in. or less. Patches that are sound	Spall greater than 1 in. deep and greater than 6 in. in diameter	The Condition warrants structural review to determine strength or serviceability of the element
Exposed Rebar	None	Present without measureable section loss	Present with measurable section loss	
Cracking	Insignificant cracks or moderate width cracks that have been sealed	Unsealed moderate width cracks or map cracking	Wide cracks with heavy pattern cracking	

Degradation Curve



Bridge Funding

FY 2015 thru FY 2019



Bridge Funding

- \$30 million – Interstate Maintenance
- \$15 million – Non-Interstate Maintenance
- \$130 million – Bridge Replacement and Rehabilitation
- \$21 million – LIBP
- \$30 million – State Funded Local Bridge
- \$100 million – Bridge Bonds



Other projects include Bridge Work

Benefits of Bridge Bond Projects

- 72 Projects Affected (85 Bridges)
- NEPA and GEPA Documents not Required
- Key Projects with Higher Cost



Notable Bridge Bond Projects

Project	Construction
0007037 SR 135 @ ALTAMAHA RIVER - TIA	\$ 20,111,765
0007042 SR 128 @ WHITEWATER CREEK 4 MI N OF OGLETHORPE - TIA	\$ 5,267,423
0007174 SR 3 @ PEACHTREE CREEK	\$ 12,149,319
0011688 SR 158 @ SATILLA RIVER; OVERFLOW & FULLWOOD CREEK	\$ 9,390,615
731865- SR 92 @ PROCTOR CREEK/LAKE ACWORTH IN SW ACWORTH	\$ 16,615,438
442951- SR 234 @ CHICKASAWHATCHEE CREEK 8 MI NE OF LEARY	\$ 10,807,586
0007050 SR 26 @ OCMULGEE RIVER IN HAWKINSVILLE	\$ 17,700,591
122064- SR 11 @ CHATTAHOOCHEE RIVER	\$ 22,400,463
122066- SR 11 @ EAST FORK LITTLE RIVER	\$ 13,445,258
0007049 SR 36 @ YELLOW RIVER 14 MI S OF COVINGTON	\$ 14,914,637
0010413 SR 43 @ SOAP CREEK 4 MI E OF LINCOLNTON	\$ 8,823,589
0001216 SR 4/US 1 @ ALTAMAHA RIVER; OVERFLOW & WILLIAMS CREEK - TIA	\$ 12,297,222
0009864 SR 120 @ BEACH CREEK E OF TALLAPOOSA	\$ 5,934,814

Transportation Asset Management Plan

TAMP

Performance Measure	Description	Target
Percent of NHS Bridges in Poor condition as a percentage of total NHS bridge deck area	Bridge Conditions are based on the results of inspections on all Bridge structures. Bridges rated as “Poor” are safe to drive on; however, they are nearing a point where it is necessary to either replace the bridge or extend its service life through substantial rehabilitation investments.	< 10% (NHS) in Poor Condition
Percent of NHS Bridges in Good condition as a percentage of total NHS bridge deck area	Bridges rated as “Good” will be evaluated as to cost of to maintain Good condition. Bridges rated as “Fair” will be evaluated as to cost of replacement vs. rehabilitation to bring the structure back to a condition rating of Good.	≥ 60% (NHS) in Good Condition

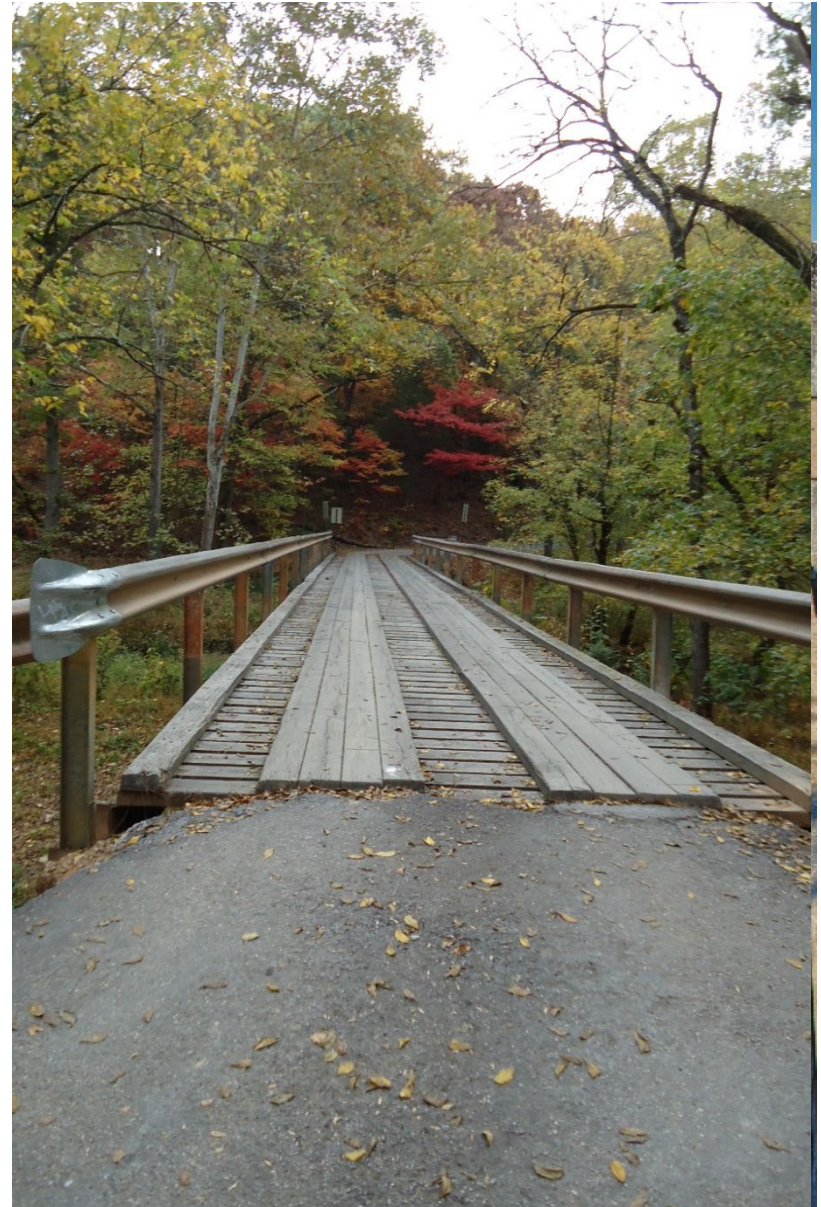
Building the Bridge Program

State Owned Bridges

- Rehabilitation and Preservation of State Owned Structures
- Replacement of Deficient State Owned Structures

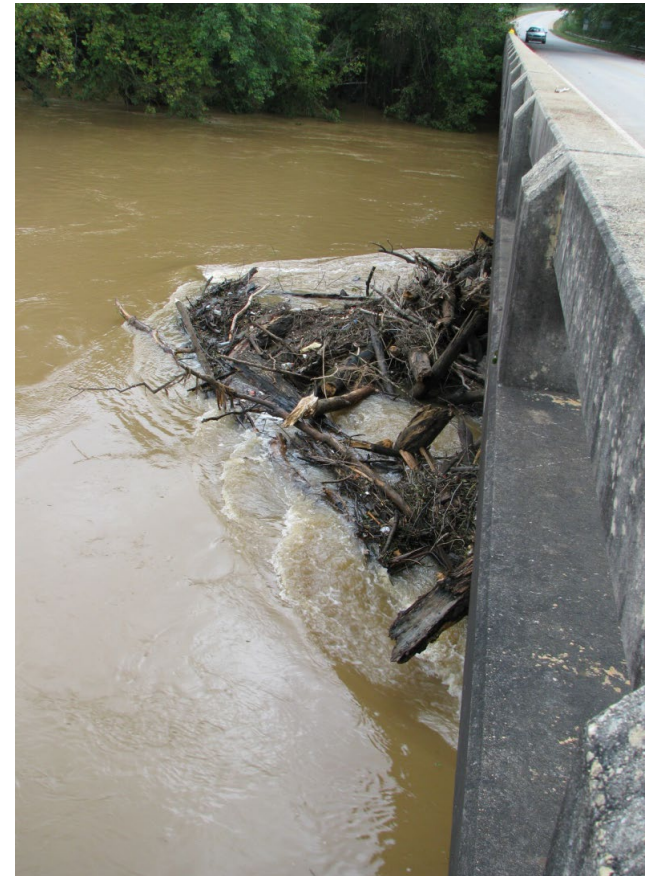
Locally Owned Bridges

- Support for Local Agencies Replacing Posted / Deficient Bridges



Bridge Maintenance

Rehabilitation and Preservation



Building the Bridge Replacement Program

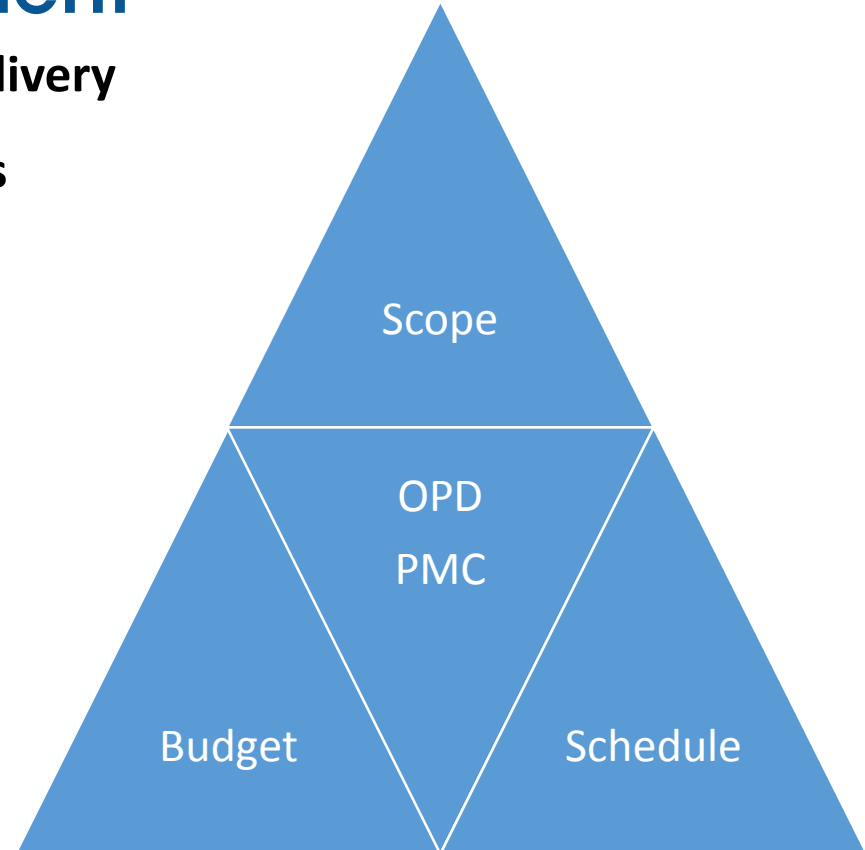
Other Contributing Factors

- Posting
- Capacity
- Critical Features
- Temporary Shoring
- Priority Routes / Freight Corridors



Bridge Program Management

- **Extension of GDOT's Office of Program Delivery**
- **OPD sub-program for bridge replacements**
- **Statewide includes**
 - **Federal Program**
 - **State Funded**
 - **Local Bridges**
- **377 Bridges in Program**
- **\$1.7b cap-ex value**
- **Programmatic Risk Assessments**



Local Bridges

Focus on Posted / Deficient Bridges

- 8,538 off-system bridges
- 1,309 Posted Bridges
- 29 Closed Bridges

Bridge Programs

Local Bridge Programs



Low Impact Bridge & Local Bridge Replacement

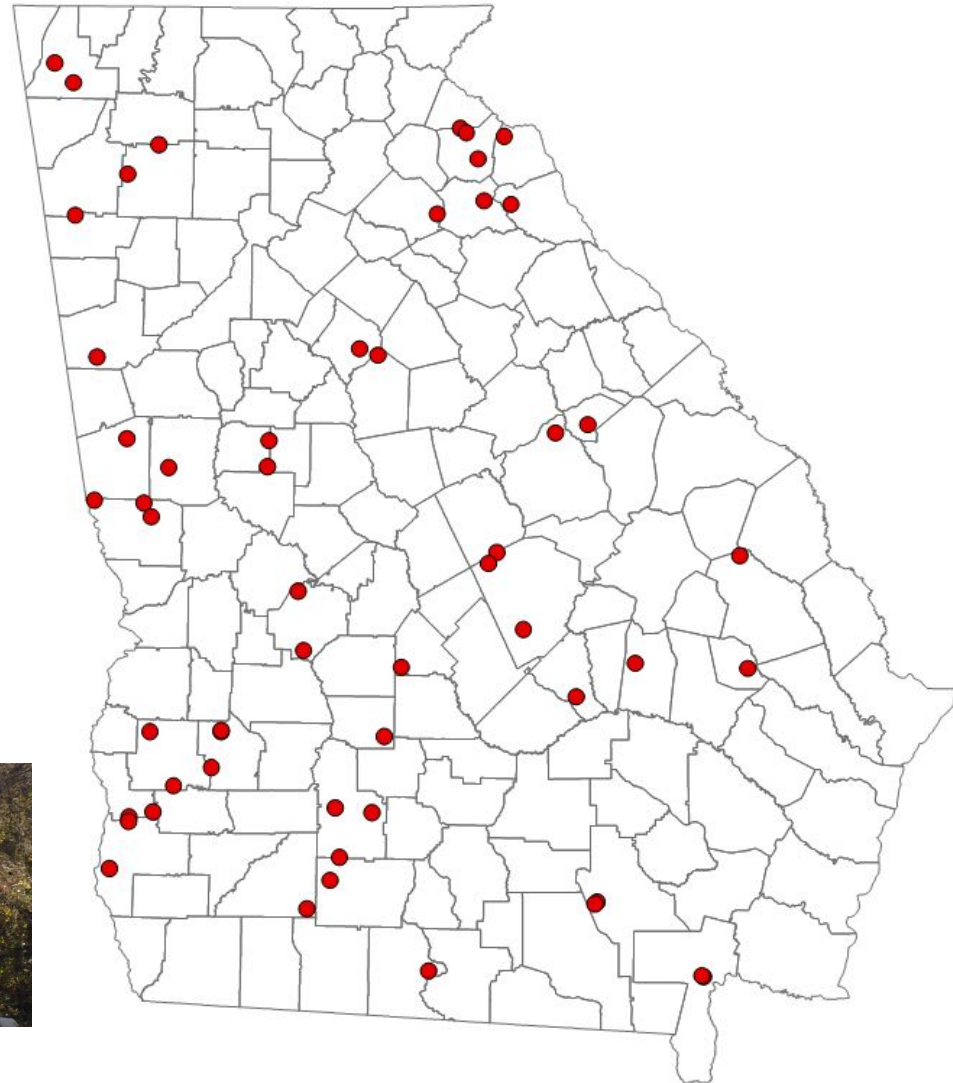
Learn about Georgia DOT's Low Impact Bridge Program (LIBP) and Local Bridge Replacement Program (LBRP).

[Learn More](#)

LIBP

Low Impact Bridge Program

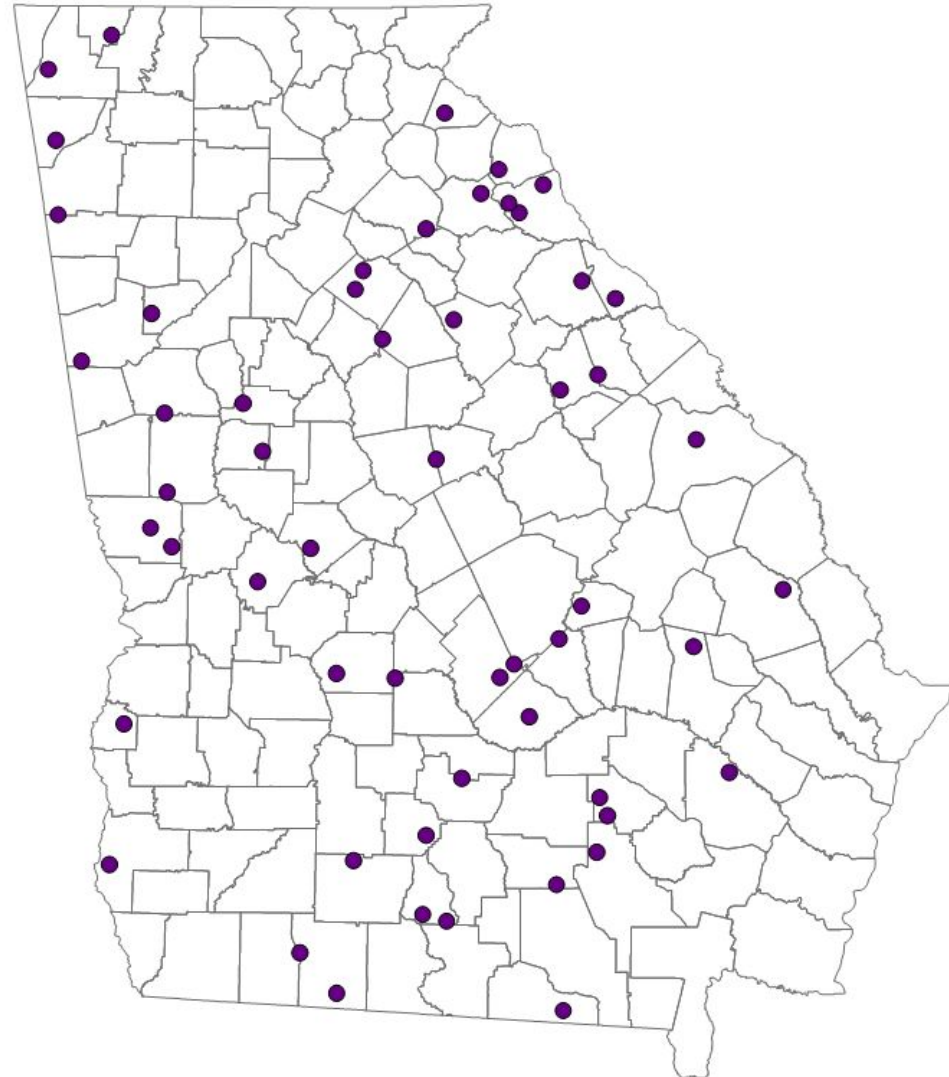
- 55 Bridges
- Streamlined Environmental
- Typically closed 6 to 9 months
- No Cost to Local
- \$21 million Program



SFLB

State Funded Local Bridge Program

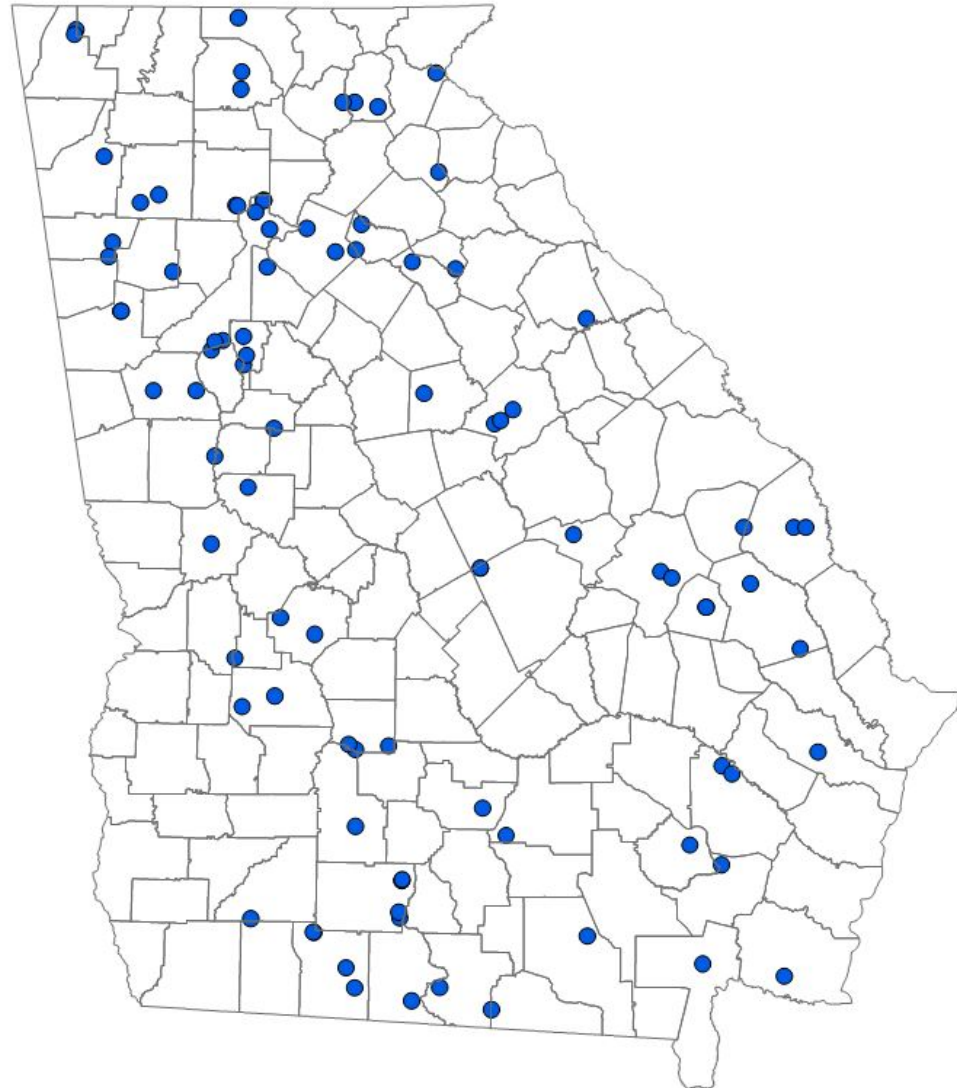
- 55 Bridges
- GEPA Document Not Required
- Similar to LIBP
- \$30 million Program



LOCBR

Local Bridge Program

- 92 Bridges
- Selected Bridges using Data Driven Approach
- Solicited Support from Local Governments



Innovation / Technology

- LIBP – Low Impact Bridge Program
- ABC – Accelerated Bridge Construction
- A+B+C – Minimizing Traffic / Community Disruptions
- UHPC – Ultra High Performance Concrete





Questions?

