

6 – Deficient Bridges

Purpose

The deficient bridge data identifies bridges that are structurally deficient or functionally obsolete. The fact that a bridge is designated as deficient does not mean that it is unsafe. The designation attracts continued monitoring and makes the bridge eligible for federal and/or state repair or replacement funding if its sufficiency rating meets a certain threshold. The final CTP will identify these bridges in the problem statements of the roadways that are selected for improvements and include them in an appendix, but it is unlikely that the final CTP will have a separate section with future bridge improvements identified.

Content

- Details on bridge definitions and process are on page 6-2.
- Maps of deficient bridges are on pages 6-3 and 6-4.
- A table of deficient bridges are on pages 6-5 through 6-7.

Appendix F

Bridge Deficiency Assessment

The Transportation Improvement Program (TIP) development process for bridge projects involves consideration of several evaluation methods in order to prioritize needed improvements. A sufficiency index is used to determine whether a bridge is sufficient to remain in service, or to what extent it is deficient. The index is a percentage in which 100 percent represents an entirely sufficient bridge and zero represents an entirely insufficient or deficient bridge. Factors evaluated in calculating the index are listed below.

- ❖ structural adequacy and safety
- ❖ serviceability and functional obsolescence
- ❖ essentiality for public use
- ❖ type of structure
- ❖ traffic safety features

The NCDOT Structures Management Unit inspects all bridges in North Carolina at least once every two years. A sufficiency rating for each bridge is calculated and establishes the eligibility and priority for replacement. Bridges having the highest priority are replaced as federal and state funds become available.

A bridge is considered deficient if it is either structurally deficient (SD) or functionally obsolete (FO). Structurally deficient means there are elements of the bridge that need to be monitored and/or repaired. The fact that a bridge is "structurally deficient" does not imply that it is likely to collapse or that it is unsafe. It means the bridge must be monitored, inspected and repaired/replaced at an appropriate time to maintain its structural integrity. A functionally obsolete bridge is one that was built to standards that are not used today. These bridges are not automatically rated as structurally deficient, nor are they inherently unsafe. Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths, or vertical clearances to serve current traffic demand or to meet the current geometric standards, or those that may be occasionally flooded.

A bridge must be classified as deficient in order to qualify for federal replacement funds. Additionally, the sufficiency rating must be less than 50% to qualify for replacement or less than 80% to qualify for rehabilitation under federal funding. Deficient bridges located on roads evaluated as a part of the CTP are listed in Table 3. For more details on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

Bridge Terms:
Structurally Deficient – This means that while the bridge remains safe, it must be monitored, inspected and repaired/replaced at an appropriate time to maintain its structural integrity.
Functionally Obsolete - This means the bridge is safe, but was built to standards that are not used today. The bridge needs to be replaced to meet current and future traffic demands.

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Deficient Bridges

Durham-Chapel Hill-Carrboro MPO

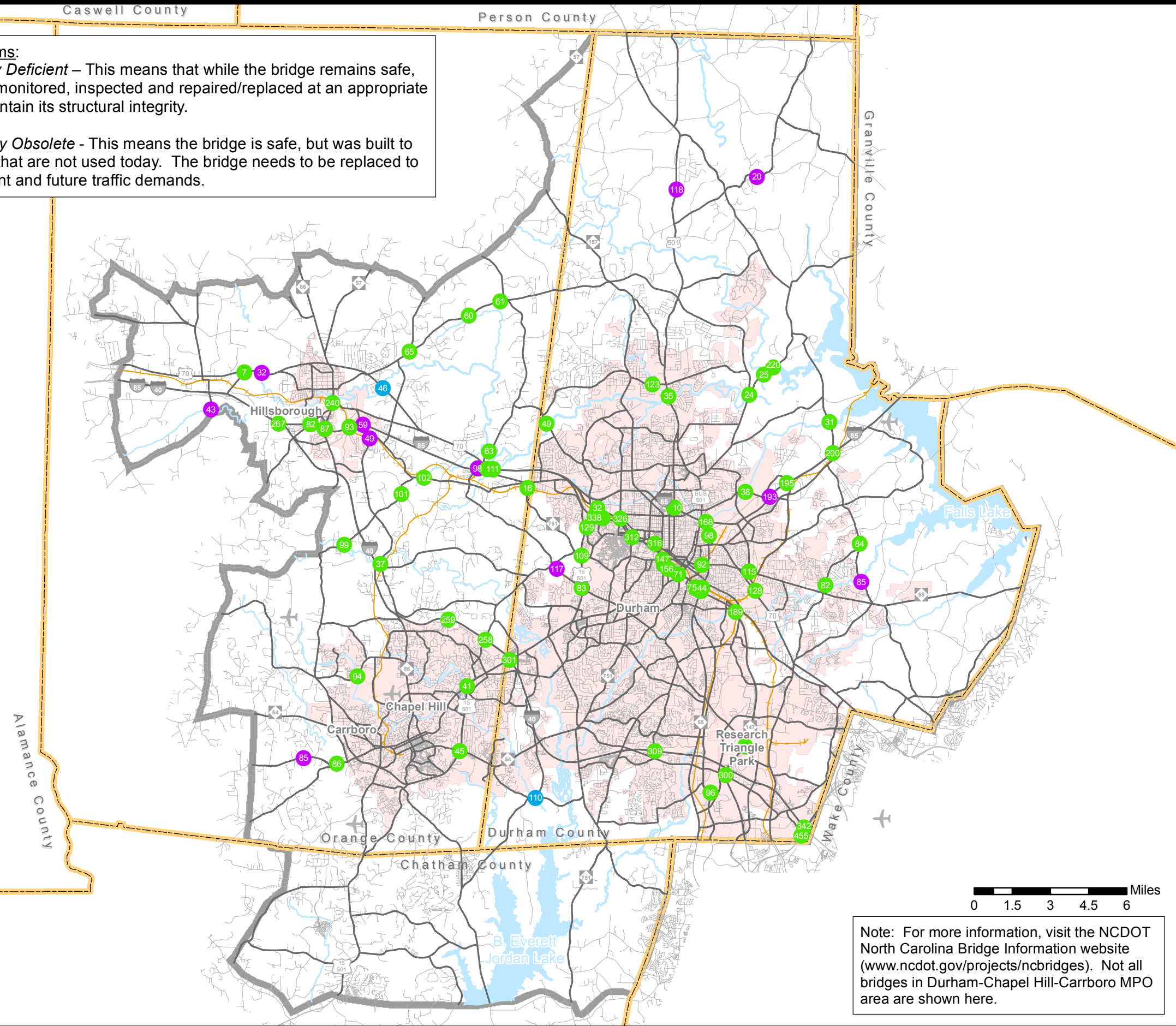
Chatham, Durham and Orange Counties
 North Carolina

**Comprehensive
 Transportation Plan**

Map date: December 4, 2014

Legend

- Bridge Condition**
- Functionally Obsolete (# Bridge Number)
 - Structurally Deficient (# Bridge Number)
 - Structurally Deficient & Functionally Obsolete (# Bridge Number)
 - Airports
 - Study Roads
 - Roads
 - Railroads
 - Rivers and Streams
 - Water Bodies
 - Municipal Boundaries
 - County Boundary
 - MPO Planning Boundary



Note: For more information, visit the NCDOT North Carolina Bridge Information website (www.ncdot.gov/projects/ncbridges). Not all bridges in Durham-Chapel Hill-Carrboro MPO area are shown here.

Base map date: September 18, 2009

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Deficient Bridges (Insets)

Durham-Chapel Hill- Carrboro MPO

Chatham, Durham and Orange Counties
North Carolina

Comprehensive Transportation Plan

Map date: December 4, 2014

Legend

Bridge Condition

- Functionally Obsolete (# Bridge Number)
- Structurally Deficient (# Bridge Number)
- Structurally Deficient & Functionally Obsolete (# Bridge Number)

- ✈ Airports
- Study Roads
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundaries
- ▭ County Boundary
- ▭ MPO Planning Boundary

Base map date: September 18, 2009

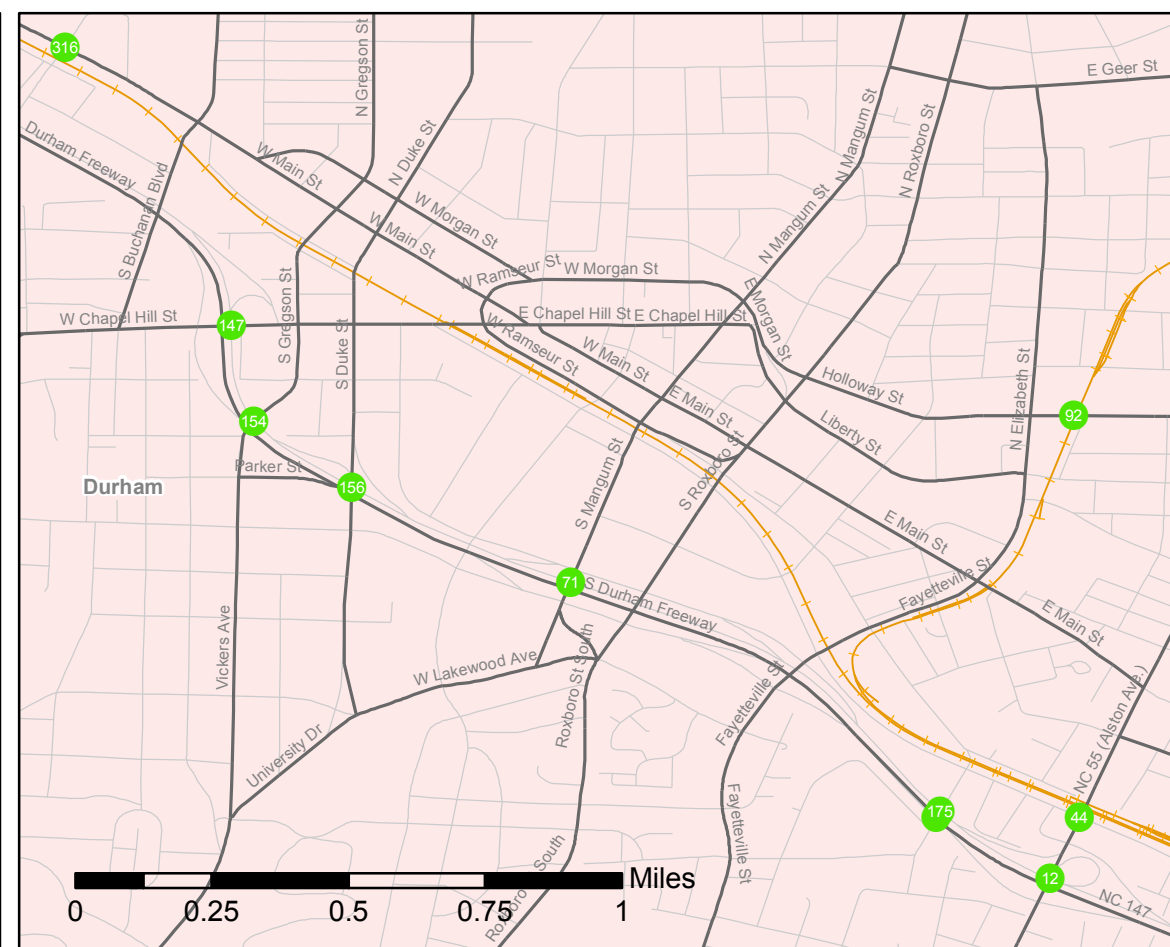
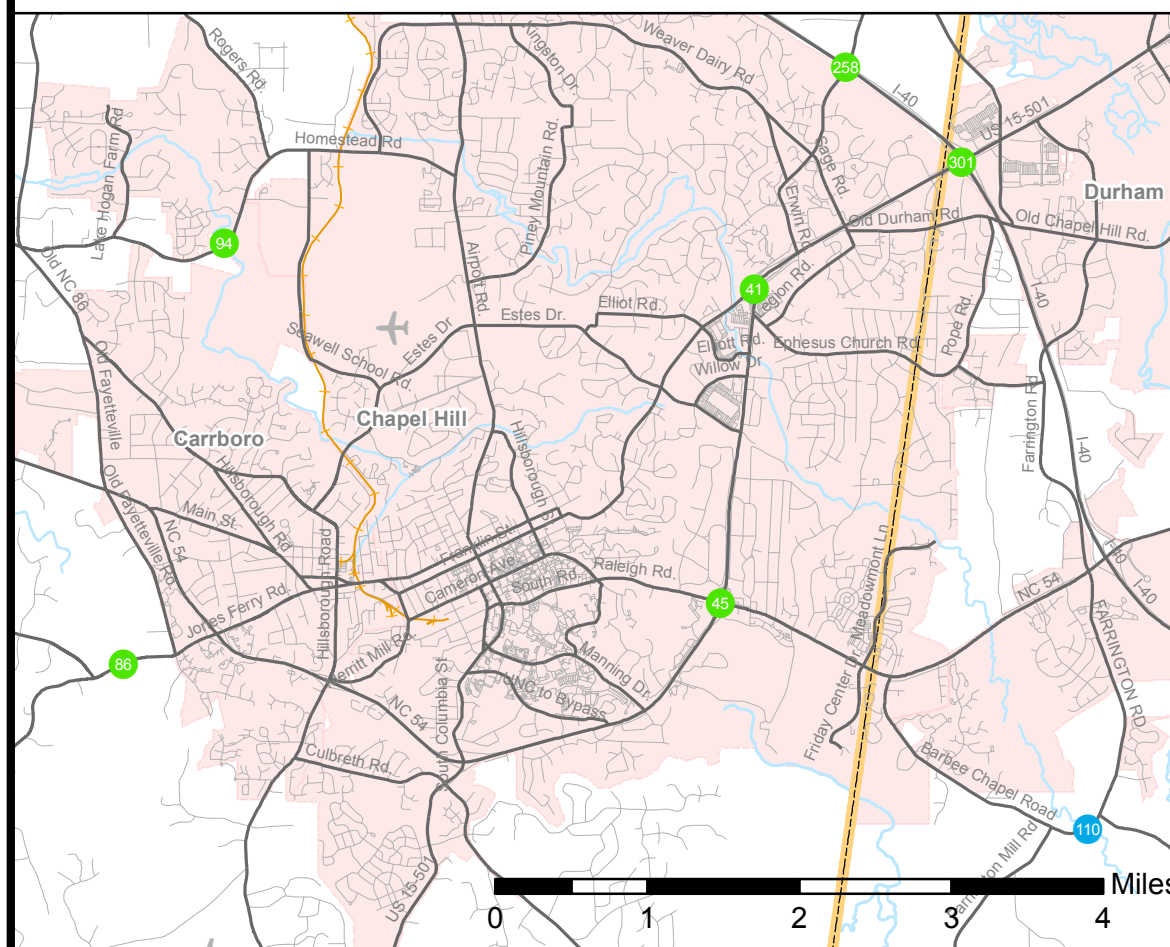
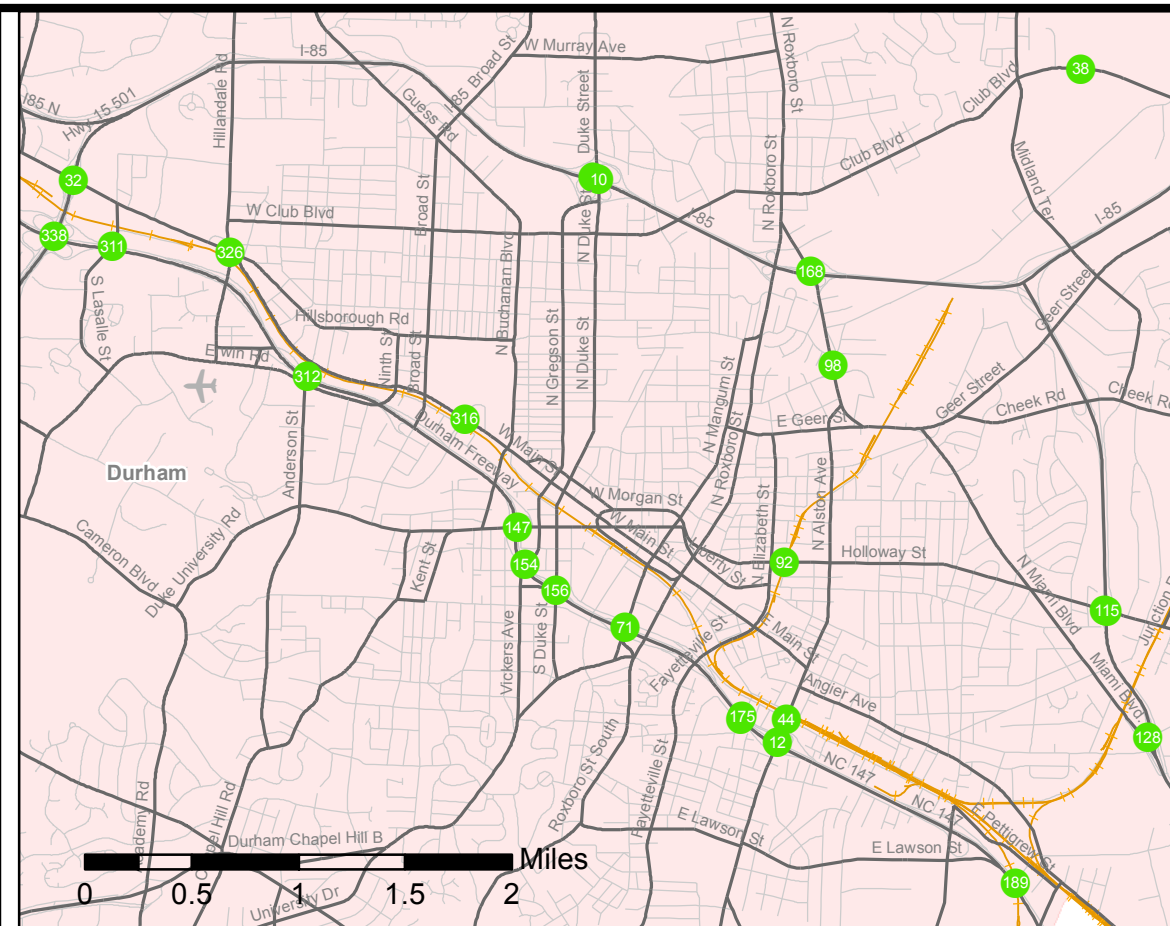
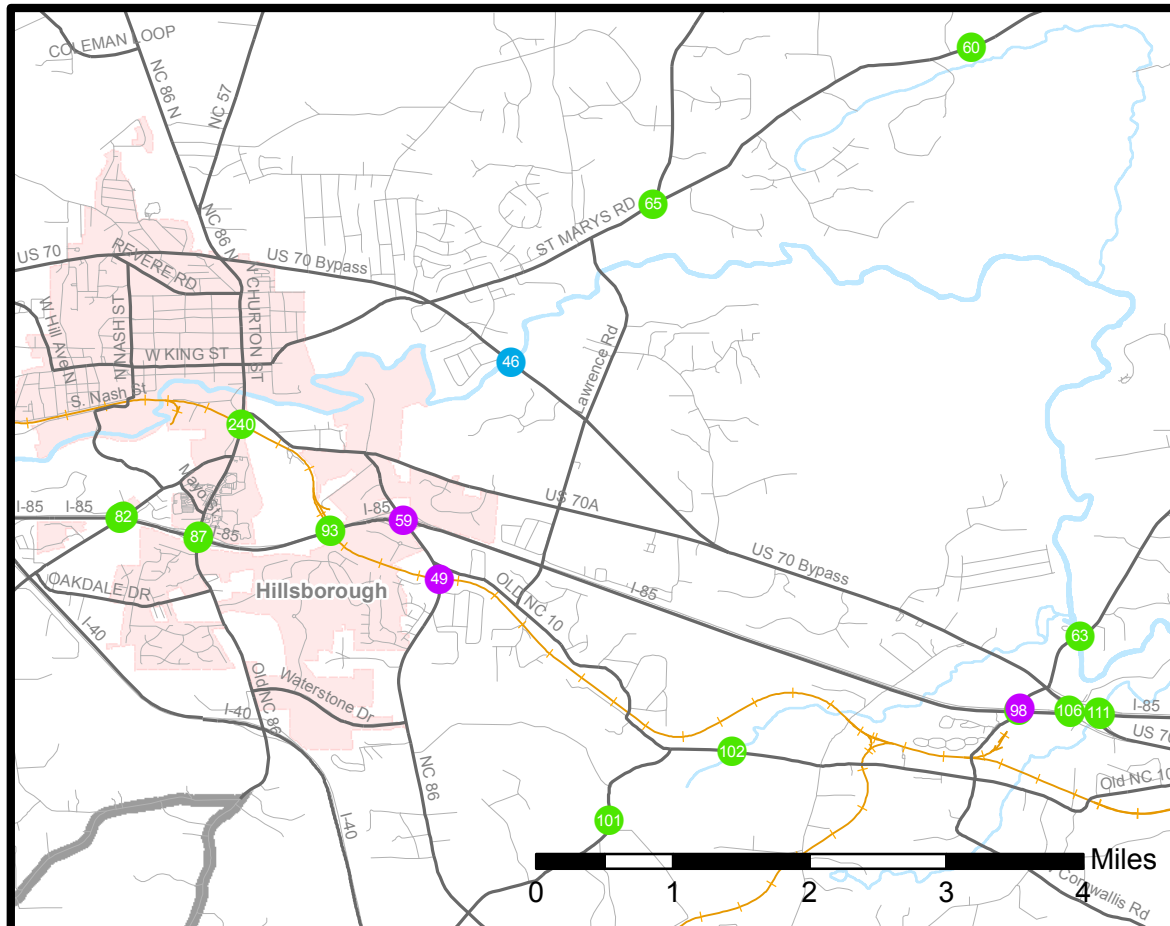


Table 3 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local ID
	<u>Durham County</u>			
10	US 501 N	I-85 & US 501	FO	
12	NC 55	NC 147	FO	
20	BAHAMA RD (SR 1616)	DIAL CREEK (LAKE MICHIE)	SD & FO	
24	OLD OXFORD RD (SR 1004)	ENO RIVER	FO	
25	OLD OXFORD RD (SR 1004)	LITTLE CREEK	FO	
31	RED MILL RD (SR 1632)	ELLERBEE CREEK	FO	
32	US 70 BUS	US 15 BYP/US 501 BYP	FO	
35	US 501	ENO RIVER	FO	
38	E CLUB BLVD (SR 1669)	ELLERBEE CREEK	FO	
44	PETTIGREW ST	NC 55	FO	
49	COLE MILL RD (SR 1401)	ENO RIVER	FO	
71	US 15/501 S	NC 147	FO	
80	US 15/US 501 NBL	W CORNWALLIS RD (SR 1308)	SD & FO	
82	N MINERAL SPRINGS (SR 1815)	LICK CREEK	FO	
83	US 15/US 501	W CORNWALLIS RD (SR 1308)	FO	
84	FLETCHERS CHAPEL RD (SR 1815)	CHUNKY PIPE CREEK	FO	
85	STALLINGS RD (SR 1814)	LITTLE LICK CREEK	SD & FO	
92	US 70 BUS & NC 98	NORFOLK & WESTERN RR	FO	
96	S ALSTON AVE (SR 1945)	BURDENS CREEK	FO	
98	NC 55	NORFOLK & SOUTHER	FO	
106	US 70 EBL	NC 98	FO	
109	US 15 BYP/US 501 NBL	NC 751	FO	
110	FARRINGTON RD (SR 1110)	LITTLE CREEK	SD	
115	US70 WBL	NC 98	FO	
117	W CORNWALLIS RD (SR 1308)	MUD CREEK	SD & FO	
118	US 501	POND	SD & FO	
123	LATTA RD (SR 1448)	CREEK	FO	
128	US 70 BUS WB	US 70 BYP EBL	FO	
129	MORREENE RD (SR 1317)	US 15 BYP/US 501 BYP	FO	
147	W CHAPEL HILL ST (SR 1127)	NC 147	FO	
154	VICKERS AVE (SR 1361)	NC 147	FO	
156	S DUKE ST (SR 1445)	NC 147	FO	
168	I-85 SB & US 15 SB	NC 55	FO	
173	NC 147 SBL	GRANT ST	FO	
175	NC 147 NBL	GRANT ST	FO	
189	NC 147 NBL	SOUTHERN RAILROAD	FO	
193	E CLUB BLVD (SR 1671)	I-85/US15	SD & FO	
195	GLENN SCHOOL RD (SR 1675)	I-85	FO	

Bridge Number	Facility	Feature	Condition	Local ID
200	I-85 NBL & US 15	RED MILL RD (SR 1632)	FO	
206	E CORNWALLIS RD (SR 1121)	NC 147	FO	
220	OLD OXFORD RD (SR 1004)	CREEK	FO	
300	NC 54	NC 147	FO	
301	US 15/501	I-40	FO	
309	BARBEE RD (SR 1106)	I-40	FO	
311	LASALLE ST	NC 147	FO	
312	ANDERSON ST	NC 147	FO	
316	US 70 BUS (W MAIN ST)	CAMPUS DRIVE	FO	
326	US 70 BUS (HILLSBOROUGH RD)	HILLANDALE RD (SR 1321)	FO	
338	NC 147 N	US 15/501 BYP	FO	
342	I-540	I-40 & NW EXPRESSWAY	FO	
425	US 501 (N GREGSON ST)	I-85	FO	
455	SLATER RD (SR 2104)	I-540	FO	
	<u>Orange County</u>			
7	US 70 EBL	I-85/US 70 CONNECTOR WBL (SR 1239)	FO	
16	NC 751	SOUTHERN RAILROAD	FO	
32	US 70	ENO RIVER	SD & FO	
37	NC 86	NEW HOPE CREEK	FO	
41	E FRANKLIN ST NBL (SR 1010)	US 15/501 SBL	FO	
43	MT WILLING RD (SR 1120)	SEVEN MILE CREEK	SD & FO	
45	US 15/501 SBL	NC 54	FO	
46	US 70	ENO RIVER	SD	
49	NC 86	SOUTHERN RAILWAY	SD & FO	
59	NC 86	I-85	SD & FO	
60	ST MARYS RD (SR 1002)	CREEK	FO	
61	ST MARYS RD (SR 1002)	CREEK	FO	
63	PLEASANT GREEN RD (SR 1567)	ENO RIVER	FO	
65	ST MARYS RD (SR 1002)	PRONG ENO RIVER	FO	
81	I-85 NBL	ORANGE GROVE RD (SR 1006)	FO	
82	I-85 SBL	ORANGE GROVE RD (SR 1006)	FO	
83	I-85 NBL	OLD NC 86 (SR 1009)	FO	
85	OLD GREENSBORO RD (SR 1005)	PHIL'S CREEK	SD & FO	
86	JONES FERRY RD (SR 1005)	UNIVERSITY LAKE	FO	
87	I-85 SBL	OLD NC 86 (SR 1009)	FO	
91	I-85 NBL	SOUTHERN RAILROAD	FO	
93	I-85 SBL	SOUTHERN RAILROAD	FO	
94	HOMESTEAD RD (SR 1777)	BOLIN CREEK	FO	
98	I-85 NBL	MT HERMAN CHURCH RD (SR 1713)	FO	

Bridge Number	Facility	Feature	Condition	Local ID
99	NEW HOPE CHURCH RD (SR 1723)	NEW HOPE CREEK	FO	
100	I-85 SBL	MT HERMAN CHURCH RD (SR 1713)	SD & FO	
101	NEW HOPE CHURCH RD (SR 1723)	STONEY CREEK	FO	
102	OLD NC 10 (SR 1710)	STONEY CREEK	FO	
103	I-85 NBL	US 70 EBL	FO	
106	I-85 SBL	US 70 EBL	FO	
110	I-85 SBL & US 70 EBL	US 70 BUS WBL	FO	
111	I-85 SBL	US 70 BUS WBL	FO	
240	S CHURTON ST (SR 1009)	SOUTHERN RAILROAD	FO	
258	ERWIN RD (SR 1734)	I-40	FO	
259	SUNRISE LN (SR 1732)	I-40	FO	
267	I-85 RAMP	I-40 EBL & I-85	FO	