



BRIDGE AND CAPITAL PROJECTS UPDATE

PUBLIC WORKS COMMITTEE

APRIL 2024

Outline

- **Overview of bridges in the city**
- **Inspection of bridges**
- **Types of issues found during inspection**
- **Current bridge replacements and projects under design**
- **Known replacement/maintenance costs**
- **Update on Department Staffing**
- **Update on other Capital Projects**

City Owned Bridges

- ▶ City currently has 54 bridges on our road network that we have maintenance responsibility (doesn't include culvert/pipe crossings or NCDOT maintained bridges).
- ▶ Age of our bridges vary dramatically (several bridges were constructed in the 1920's and are still in service).
- ▶ Size of the bridge, type of construction and materials vary greatly (i.e. wood timbers, concrete, steel).



Inspection of Bridges

- ▶ Every two years bridges are inspected and given a condition rating from 0 to 100 (with 100 being the best possible condition).
- ▶ Inspections are conducted by a contracted bridge inspector under the purview of NCDOT.
- ▶ Inspection reports can yield findings that require priority maintenance or critical repairs.
- ▶ These findings could require the local government to post weight restrictions or close the bridge until repairs are made.



Typical Issues Found During Inspection

- Corrosion of steel support beams.
- Spalling of concrete support structures that exposed reinforcing steel.
- Spalling of concrete bridge decking.
- Rot of timber decking or wooden abutments.
- Drift and debris built up on the upstream side of the bridge causing undermining.
- Wingwall failures.



Recent Bridge Replacements

- Bridge: **West Lakeview Drive**
- Ward: North
- Damages: timber decking, steel beams, concrete abutments failing
- Owner: COWS
- Closure Date: 5/19/2020
- Year Built: 1964
- Rating: 22.74
- Replacement Cost: \$1,281,000
- Opened: 3rd Quarter of 2024



Recent Bridge Replacements

- Bridge: **Novack Street**
- Ward: Northeast
- Damages: timber flooring and abutments failing
- Owner: COWS
- Closure Date: 5/20/2018
- Year Built: 1965
- Rating: 38.49
- Replacement Cost: \$900,000
- Open to traffic for over a year.



Bridges Under Design

- Bridge: **First Street Bridge**
- Ward: Northwest
- Damages: concrete railing damage, decking and abutments failing.
- Owner: COWS
- Year Built: 1965
- Rating: 38.49
- Replacement Cost: \$5,710,000
- Design phase nearly complete, easement acquisition.



Bridge/Culverts Under Design

- ▶ Culvert: **Hawthorne Road**
- ▶ Ward: Southwest
- ▶ Damages: culvert settlement, shifting, invert undermining, carries water service to the hospital, access route to the hospital.
- ▶ Approximate Replacement Cost: \$ 3,000,000
- ▶ Emergency contract in place with consultant and drawings and flood study approved. Sewer line replacement and Cloverdale Avenue work needs to be completed before culvert project is bid. Stakeholder meetings need to occur as well to notify of closure.



Maintenance Costs for Priority Bridges

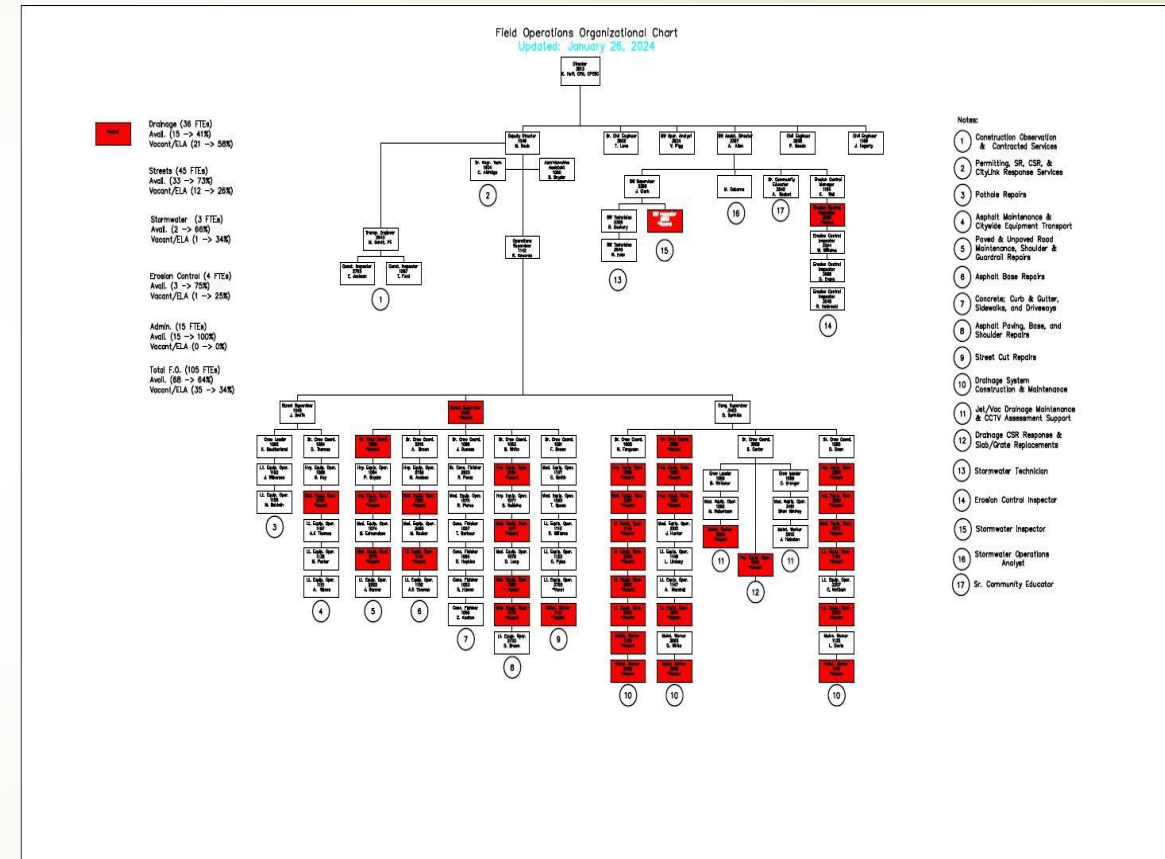
BRIDGE NUMBER	ROUTE/STREET CARRIED	LOCATION	MAINTENANCE TYPES	ESTIMATED BRIDGE MAINTINANCE COSTS**
330009	E. Fifth St. (WBL)	0.01 mile E. of Jct. Old Greensboro Rd.	Latex deck overlay, Piling, Scour, Conc. Spalls	\$450,000
330083	Swaim Rd.	50 feet S. of Jct. High Point Rd.	Stone repl., Tuckpointing, Abutment scour	\$70,000
330209	Valley Rd.	0.45 mile N. of Jct. Reynolda Rd.	Concrete spalls-deck, girders, and substructure	\$75,000
330280	High Cliffs Rd.	0.1 mile W. of Jct. SR 1797	Wingwall rebuild and Channel scour	\$100,000
330330	Old Greensboro Rd.	0.1 mile W. of Jct. E. Fifth St.	Steel beams repairs and concrete spalls	\$79,900
330331	E. Fifth St. (EBL)	0.01 mile E. of Jct. Old Greensboro Rd.	Rebuild approach slabs, Drift, Conc. Spalls-sub and superstructure	\$85,250
330373	Cameron Ave.	0.02 mile N. of Jct. US Rte. 311	Concrete spalls-substructure & abutments	\$79,000
330376	Ninth St.	0.01 mile E. of Jct. Main St.	Concrete spalls - deck, railing, girders, abutments	\$75,000
330380	Link Rd.	0.01 mile W. of Jct. Peters Creek Pkwy.	Steel piles, Painting, Bulkhead, Spalls, Erosion	\$59,400
330386	Vine St.	0.06 mile E. of Jct. 4th St.	Concrete spalls-deck, girders, Decorative painting	\$52,250
330387	Glade St.	200 feet E. of Jct. Hawthorne Rd.	Clean-up, Conc. Spalls-everywhere, steel beams	\$191,500
330390	16th St.	0.01 mile W. of Jct. US Rte. 52	Concrete spalls-substructure, rails, underside deck	\$70,400
330527	Northwest Blvd.	100 feet W. of Jct. Rundell St.	Debris, Concrete spalls-underside deck & girders	\$80,400
330592	South Main St.	0.04 mile N. of Jct. US Rte. 52	Steel piles, clean-up, Conc. Spalls- deck, girders	\$60,000
			TOTAL =	\$1,528,100

Priority Bridge Replacements (Not Currently Under Construction or Design)

BRIDGE NUMBER	ROUTE/STREET CARRIED	LOCATION	RANKING OF REPLACEMENTS*	ESTIMATED BRIDGE REPLACEMENT COSTS**
330330	Old Greensboro Rd.	0.1 mile W. of Jct. E. Fifth St.	1	\$3,000,000
330387	Glade St.	200 feet E. of Jct. Hawthorne Rd.	2	\$4,641,000
330209	Valley Rd.	0.45 mile N. of Jct. Reynolda Rd.	3	\$2,507,000
330134	Sprague St.	0.01 mile E. of Jct. US Rte. 52	4	\$4,179,000
330527	Northwest Blvd.	100 feet W. of Jct. Rundell St.	5	\$1,971,000
330381	Crafton St.	50' W. of Jct. Seneca St.	7	\$2,149,000
			Total Costs =	\$15,447,000
NOTES:				
	* Ranking of replacements was developed by using the various bridge conditions (i.e. Sufficiency Rating) ranking			
	** Total Bridge Replacement Costs include construction costs, design costs, and construction inspection costs.			

Field Operations Current Staffing Levels

- The Department is still struggling to fill vacancies (red denotes current vacant positions).
- Some workgroups have over 50% vacancy.
- Recent hires are at the Maintenance Worker position.
- Several planned retirements of tenured/skilled team members in upcoming months.
- Have several staff enrolled in the CDL training program.
- Key positions (Transportation Engineer).



Other Capital Projects

- ▶ Underwood Drive Culvert Rehabilitation-Complete.
- ▶ Griffith Road Culvert Rehabilitation-Complete.
- ▶ Wachovia Street Culvert Rehabilitation-Complete.
- ▶ Fanning Road Pipe Replacement- Complete.
- ▶ Aubery Court Pipe Replacement-Complete.
- ▶ Patterson Avenue Culvert Replacement-Complete.
- ▶ Lura Road Culvert Replacement-Under Construction.
- ▶ Old Salisbury Road-Contractor to mobilize late April.
- ▶ Bethbara Road Culvert Replacement- Permitting, Woody Vegetation.
- ▶ Brookline and Dacian Road Failure-Mobilize in May.
- ▶ Resurfacing Contract-Procurement.
- ▶ Innovation Quarter Stormwater Pond-Woody Vegetation Removal.



Questions?