

BRIDGE REHABILITATION AND REPLACEMENT PROGRAM

The City is responsible for 42 bridges, including 33 vehicular bridges and 9 bicycle/pedestrian bridges. They provide critical transportation links throughout the City. The bridges range in age from new to nearly 100 years old. The New Hampshire Department of Transportation (NHDOT) inspects these bridges on a bi-annual basis. Each bridge subsystem (deck, superstructure, substructure, railing, approaches, etc.) are reviewed and their condition is rated. The ratings range from 9 – Excellent Condition to 1 – Imminent Failure. Bridges that are identified with significant deficiencies (ratings of 5 or less) are classified as “Red Listed” and inspected annually. The type of deficiencies on City bridges includes insufficient lane width and deterioration of deck surfaces and supporting members. The City has 10 bridges that are on the State’s Red List ⁽¹⁾. To prioritize the repair of these bridges, the Engineering Division weighs the bridge condition, the type of deficiencies, the amount of traffic that uses the bridge, the potential impacts if weight restrictions or closure occurs, and availability of a reasonable detour. Staff recommends that bridge repair/replacement be prioritized as follows:

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|---|--|
| 1) Island Street over Ashuelot River ⁽²⁾ | 6) Church Street over Beaver Brook |
| 2) George St. over Beaver Brook ⁽³⁾ | 7) Ferry Brook Road over Ferry Brook |
| 3) Winchester St. over Ash Swamp Brook ⁽⁴⁾ | 8) Whitcombs Mill Rd. over White Brook |
| 4) Beaver St. over Beaver Brook | 9) Summit Road over Black Brook |
| 5) Maple Ave. over Black Brook | 10) Spring Street over Beaver Brook |

City bridge projects are eligible to participate in the State’s Municipal Bridge Aid Program. This program shares the cost of bridge repair/replacement between the community and the State with 80% of the funding from the State and 20% from the City. To be considered for funding the City must prove that it has appropriated its 20% share. Contributions to the Bridge Capital Reserve are planned so that the City may request State funding for one bridge every three years. There is no guarantee that State funds will be approved in accordance with the schedule listed below. However, by having our share appropriated, we will be in a position to utilize any additional State funds that may become available (e.g., if a programmed project is canceled or if additional federal funding becomes available).

Roadway	Waterway	Description	Design Year	Anticipated Construction Year	Construction Cost Estimate
Island Street ⁽²⁾	Ashuelot River	Design is underway for the replacement structure.	2018	2021	*See costs for State Bypass Program
George Street ⁽³⁾	Beaver Brook	Design for the replacement of this bridge began in the fall of 2021. Construction is planned for 2024.	2023	2024	\$787,571
Winchester Street / Rt. 10	Ash Swamp Brook	Design of this project has been suspended due to NHDOT funding shortfall. Bridge replacement will be incorporated into the FY25 Lower Winchester Street Corridor Reconstruction Project. The recently completed Engineering Study estimated the replacement cost at \$3,511,500. ⁽⁴⁾ The City's 20% Match will be \$702,300. Currently, the Bridge Capital Reserve includes approx. \$143,300 for this project. Therefore, an additional \$559,000 in debt funding will be appropriated in FY25.	2015	2025	\$3,511,500
Beaver Street	Beaver Brook	The NHDOT estimated the replacement cost at \$655K in 2009 ⁽⁵⁾ . The City previously appropriated \$92,000 for our City's 20% match. An additional \$137,700 will be required to match the construction-year estimated cost. Appropriations to the Bridge Capital Reserve in FY20 and FY21 will allow us to request funding through the 2023-2032 TYP.	2026	2028	\$1,148,546
Maple Avenue	Black Brook	The estimated replacement cost is \$998,600 ⁽⁶⁾ . Appropriations to the Bridge Capital Reserve in FY22 and FY23 will allow us to request funding through the 2025-2034 TYP.	2029	2031	\$998,600
Church Street	Beaver Brook	The estimated replacement cost for this structure is \$1,267,700 ⁽⁷⁾ . Therefore, the City will require matching funds of \$218,700 by the Fall of 2024 in order to request inclusion in the NHDOT's 2027-2036 TYP. The requested appropriations to the Bridge Capital Reserve in FY24 & FY25 will achieve that goal.	2032	2034	\$1,267,700
Ferry Brook Road	Ferry Brook	A detailed cost estimate for this bridge has not been prepared. For planning purposes, we estimate the cost will be approximately \$600,000 in current dollars. With inflation, the estimated cost will be \$1,052,100. Therefore, the City will require matching funds of \$210,420 by the Fall of 2026 in order to request inclusion in the NHDOT's 2029-2038 TYP. Capital Reserve appropriations will be requested in FY26 & FY27.	2035	2037	\$1,052,100

Notes:

- 1) Harrison Street Bridge, which has been discontinued for vehicle traffic, is not included. The Island St. bridge was previously included on the State's Red List, but was removed due to a change in the state's definition of red-list eligibility.
- 2) Replacement of the Island St. bridge is planned and funded as part of the Winchester Street Reconstruction Project.
- 3) Replacement of the George St. bridge is funded in the NHDOT Ten Year Plan for construction in 2024.
- 4) The replacement cost for Winchester Street was estimated at \$2,855,150 in 2018. With inflation, the construction-year estimated cost will be \$3,511,474.
- 5) The replacement cost for Beaver Street was estimated at \$655,000 in 2009. With inflation, the construction-year estimated cost will be \$1,255,048.
- 6) The replacement cost for Maple Avenue was estimated at \$680,000 in 2018. With inflation, the construction-year estimated cost will be \$998,603.
- 7) The replacement cost for Church Street was estimated at \$790,000 in 2018. With inflation, the construction-year estimated cost will be \$1,267,718.

2023 - 2029 Capital Project Funding Request Public Works



GENERAL PROJECT DATA

Project/Program: Bridge Repair and Replacement Program

Project Number: TBD

Physical Location: Various

Type: Ongoing Program

Capital Reserve (Wholly or In Part): **Bridges - page 26**

Federal / State Regulation or Law: NH RSA 234

Master Plan (CMP) Focus Area: Quality Built Environment

CMP Vision/Strategy: Infrastructure, Transportation

Departmental Objective: Maintain critical infrastructure



PROJECT/PROGRAM DESCRIPTION & JUSTIFICATION

This project provides funding for the City to rehabilitate and replace red-listed bridges. The City participates in the Municipal Bridge Aid Program through the New Hampshire Department of Transportation (NHDOT). The program provides 80% state funding with a local 20% match. For consideration in the program, the City must prove that it has appropriated the local match.

The project schedule below includes funding for the replacement of the George Street Bridge. Design for this work is currently underway (funds were appropriated in FY22). Construction is planned in 2024.

In 2018, the City was notified by the NHDOT that the Winchester Street replacement must be postponed due to funding limitations. The project is now scheduled for construction as part of the Lower Winchester Street reconstruction in FY25. The cost and funding plan for this bridge replacement is described within the Lower Winchester Street project request page.

The City originally requested Municipal Bridge Aid for the Beaver Street bridge in 2010. In 2018, Public Works reminded the NHDOT that this project was still awaiting funding. Currently, it has not been added to the State's TYP, but we have requested the plan be amended to include this bridge for construction in 2028.

PROJECT/PROGRAM PLAN

	FY23	FY24	FY25	FY26	FY27	FY28	FY29	TOTAL
EXPENDITURES								
Design				172,282				172,282
Construction / Implementation		654,520				953,293		1,607,813
Property/Equip. Acquisition	15,653				22,971			38,624
Other								0
TOTAL	\$15,653	\$654,520	\$0	\$172,282	\$22,971	\$953,293	\$0	\$1,818,719

FINANCIAL PLAN

	FY23	FY24	FY25	FY26	FY27	FY28	FY29	TOTAL
FUNDING								
Current Revenue								0
Capital Reserve	3,131	130,904		34,456	4,594	190,659		363,744
Debt Funded								0
Federal / State Grants	12,522	523,616		137,826	18,377	762,634		1,454,975
Other Sources								0
TOTAL	\$15,653	\$654,520	\$0	\$172,282	\$22,971	\$953,293	\$0	\$1,818,719