F.E. EVERETT TURNPIKE WIDENING FEASIBILITY REPORT

Feasibility of Widening the
2-Lane Segments of the Turnpike
to 3-Lanes in Each Direction
from Nashua to Bedford

EXECUTIVE SUMMARY

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This report summarizes the findings of a study which evaluates the feasibility of widening the 2-lane segments of the F. E. Everett Turnpike (FEET) to 3-lanes in each direction from the Massachusetts/New Hampshire state line northerly to the Interstate 293 interchange in Bedford, a total distance of approximately 20 miles. Within these study limits the Turnpike passes through the communities of Nashua, Merrimack and Bedford. The goal of the study is to evaluate the need for widening the narrow segments, identify pertinent issues and constraints, and estimate the cost of the potential improvements.

The existing Turnpike is at least 3 lanes in each direction through virtually all of Nashua, and between Exit 10 and Exit 11 in Merrimack. It is also currently being widened to 3 lanes in each direction in the vicinity of the Manchester Airport Access Road (MAAR) interchange in northern Merrimack and southern Bedford. This leaves three segments of 2-lane highway:

- Southern Segment – in Nashua and Merrimack between Exit 8 and Exit 10
- Middle Segment – in Merrimack between Exit 11 and the southern limit of work of the MAAR project
- Northern Segment – in Bedford between the northern limit of work of the MAAR project and the I-293 interchange

The locations of the three 2-lane segments are depicted on the attached graphic.

Traffic analysis shows a clear need to widen the 2-lane highway segments. The table below lists existing (2009) and future estimated (2030) average daily traffic (AADT) volumes on various segments of the highway. Level-of-service (LOS) analyses were run using methodologies from the Highway Capacity Manual published by the Transportation Research Board. Level-of-service is a measure that is used to characterize how well or how poorly a section of highway operates. The scale goes from LOS A, which represents free-flow conditions with no back-ups or delays, to LOS F, which represents extreme congestion and major delays to traffic. The analyses were run based on traffic volumes that would be experienced during the heaviest volumes (peak hour) of the day, which typically represent the morning and evening commuter times during the weekday. The results of the LOS analyses are also given in the table below.

	2009			2030		
Location	AADT	LOS 2 Lanes	LOS 3 Lanes	AADT	LOS 2 Lanes	LOS 3 Lanes
Exit 8 to Exit 10	54,100	E	C	74,000	F	D
Exit 11 to Exit 12	54,900	E	C	75,000	F	D
Exit 12 to I-293	47,400	D	C	64,800	F	C

As noted in the table, the existing 2-lane segments of highway are currently operating at LOS D or E, and are projected to degrade to LOS F by the year 2030. Widening these segments to 3 lanes would improve the current operations to LOS C, and would improve operations in 2030 to LOS C or D. These results show a clear need to widen the 2-lane segments from a capacity perspective, and to improve traffic operations to a satisfactory level.

Projects to widen the highway would also include upgrades to safety features such as median shoulder width, roadside recovery area (clear zone), and guardrail. Five aging bridges would be replaced or widened and rehabilitated.

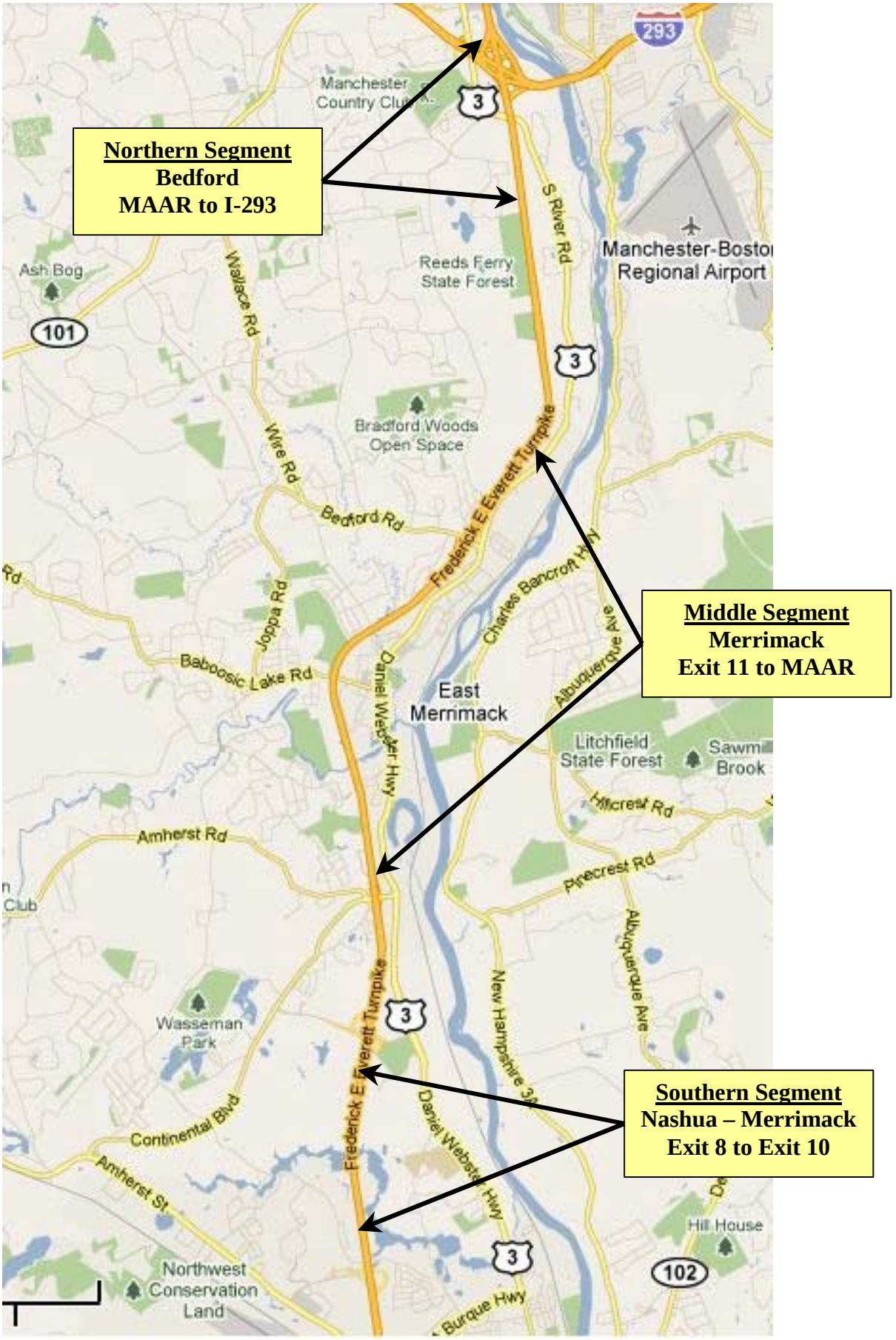
Based on an evaluation of the existing roadway, it is assumed that the highway could simply be widened by 12 feet on each side to add the third lane in each direction. Conceptual plans of the potential widening can be found in the Appendix of the full report.

Once support for widening the Turnpike is apparent and a decision is made to move forward with the widening of one or more of the existing 2-lane segments, detailed design layouts must be developed. This would include collection of survey, development of design plans using the concept plans in this report as a starting point, and coordination with the local communities and the general public through a series of public meetings or hearings. The estimated costs (in 2010 dollars) to widen the 2-lane segments are listed below:

Segment	Location	Length	Cost
Southern	Nashua/Merrimack, Exit 8 to Exit 10	1.5 miles	$14 million
Middle	Merrimack, Exit 11 to MAAR project	5.3 miles	$45 million
Northern	Bedford, MAAR project to I-293	1.3 miles	$11 million

Total Planning-level Cost Estimate:	**$ 70 million**

Currently, there is no funding available for widening these three segments of the F. E. Everett Turnpike within the Turnpike system's capital improvement program (2008 – 2018), nor is the project included in the current Ten Year Transportation Improvement Plan (TYP) 2011 – 2020. Legislative authorization with an appropriation of funds for carrying out the widening and project improvements would be required, as well as additional revenue (i.e. toll increase, recapture of projected loss of revenue due to the MAAR opening) would need to be added to the Turnpike Capital Program to fund the project costs.


Northern Segment
Bedford
MAAR to I-293
Middle Segment
Merrimack
Exit 11 to MAAR
Southern Segment
Nashua – Merrimack
Exit 8 to Exit 10
293
3
101
102
Manchester Country Club
Manchester-Boston Regional Airport
Reeds Ferry State Forest
Ash Bog
Wallace Rd
S River Rd
Bradford Woods Open Space
Wire Rd
Bedford Rd
Frederick E Everett Turnpike
Charles Bancroft Hwy
Albuquerque Ave
Joppa Rd
Baboosic Lake Rd
Daniel Webster Hwy
East Merrimack
Litchfield State Forest
Sawmill Brook
Hillcrest Rd
Amherst Rd
Pinecrest Rd
Wasseman Park
New Hampshire 3A
Continental Blvd
Amherst St
Hill House
Northwest Conservation Land