



Portland Area Mainline Needs Assessment

DRAFT

Alternative 10 – Widening I-295 to Three Lanes in Each Direction

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10.1 Overview

Roadway widening alternatives are typically construction alternatives that require a fair amount of capital investment, including right-of-way acquisition. They sizably increase the throughput capacity of the roadway.

As part of the Portland Area Mainline (PAM) Needs Assessment, the Study Team assessed the impacts of widening I-295 to three general purpose lanes in each direction from I-95 Exit 44 in Scarborough to I-295 Exit 11 in Falmouth. Figure 10-1 shows the project limits. The key components of this alternative would consist of:

- Widening I-295 for approximately 11 miles to provide a three-lane cross section in each direction;
- Reconstruction of 27 bridges including the Fore River Bridge and Tukey’s Bridge; and
- Reconstruction of any side road underpasses and existing drainage structures not already designed for additional mainline lanes.



Figure 10-1: I-295 Widening Project Limits

10.2 Key Assumptions

The analysis of this alternative followed a methodology that is based on engineering standards and practices. Factors in the analysis included forecast year, design hours, traffic growth, roadway capacity analysis, travel demand model, and traffic impact analysis.

10.2.1 Traffic Impact Analysis

The Portland Area Comprehensive Transportation System (PACTS) regional travel demand model is an accepted tool that estimates the amount of traffic on the road as well as likely travel routes in the region based on socio-economic factors. The model provides information on travel by vehicles on all the roadways in the study area, providing information on vehicle-miles traveled (VMT) and vehicle-hours traveled (VHT).

The PACTS travel demand model was run with a widened I-295 to determine the traffic impacts on the Portland area roadways for 2040. The traffic impacts identified included changes in traffic volumes on I-295 and key arterials, and changes in vehicle miles travelled (VMT) and vehicle hours travelled (VHT) for the Portland area.

10.2.2 Traffic Impact Analysis Findings

The analysis showed that widening I-295 through Greater Portland would provide mixed transportation impact results. A summary of key transportation findings included:

- Reduction in traffic on Maine Turnpike as thru-traffic headed to/from I-295 north of Portland shifts to the less congested I-295;
- Significant reduction in miles of roadway in the PACTS region near or over capacity; and
- Increase in VMT as traffic seeks to travel on the less congested I-295.

10.3 Capital and Operating Costs

The capital costs to widen I-295 one additional lane in each direction between Exits 44 and Exit 11 in Falmouth was estimated to be approximately \$241.6 million in 2018 dollars.

The widening of I-295 to three-lanes in each direction within the Study Area would increase the total number of lane miles to be maintained by approximately 22 miles. With these additional miles, the additional operating and maintenance costs for this alternative would be \$600,000 based on current Maine Department of Transportation (MaineDOT) per mile operation and maintenance estimates.

10.4 Findings

Widening of I-295 to three general purpose lanes was found to decrease the traffic volumes on the Maine Turnpike. However, under projected volumes from the travel demand model, the Maine Turnpike would be over capacity with this alternative in 2040 (1.31). Therefore, this alternative does not address the identified capacity issues on the Maine Turnpike.

This alternative was evaluated against several Measures of Effectiveness (MOEs) which are summarized in the Alternatives Evaluation Matrix, dated April 12, 2018. The key findings from that matrix for this alternative are as follows:

10.4.1 Key Benefits

The key benefits of Alternative 10 – Widening I-295 are the following:

- An expected 4.2% decrease in the number of crashes on the Turnpike;
- A peak hour demand reduction of 211 vehicles on the Turnpike;
- A reduction of 21.8 miles of roadway in the region that are near or over capacity;
- 0.2% reduction in vehicle hours traveled (VHT); and
- Has a Benefit/Cost ratio of 3.0.

10.4.2 Key Impacts

The key impacts and challenges of

- A volume to capacity ratio (v/c) that is still greater than one (1.31) on the Maine Turnpike;
- 0.3% increase in regional vehicle miles traveled (VMT);
- Increase in NOx (+0.2%) and HC (+1.0%), reducing air quality;
- 9 acre increase of impervious pavement in Urban Impaired Stream Watersheds;
- Potential wetland impacts;
- This alternative has no viable funding source;
- Obstacles to implementation include MaineDOT's jurisdiction over I-295. This project is not currently in MaineDOT's long range plan for widening; and
- Potential for lost revenue on the Maine Turnpike.