Appendix B: Transportation

B-5 AECOM Future Capacity Memorandum

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TO: Robert Conway, AKRF
CC: Donald Tone, AKRF
FROM: William Crowell
RE: TZB Replacement Project
Need for 8-Lane Bridge Alternatives Analysis
DATE: October 26, 2011

OVERVIEW

The TZB Replacement Project proposes the construction of an 8-lane bridge similar in roadway design and capacity to the replacement bridge proposed in the previous TZB/I-287 Corridor Project, with four lanes in each direction. (One alternative under that previous project also included a 5th HOV/HOT lane in both directions.) The presently proposed 8-lane bridge would replace an existing 7-lane bridge which has a movable barrier allowing four lanes in the peak direction – i.e., 4 lanes eastbound in the AM peak and westbound in the PM peak on weekdays. However, while the TZB/I-287 Corridor Project also included various improvements to the Thruway in Rockland County, the present project includes no improvements to the highway.

The traffic analyses being prepared for the TZB Replacement Project EIS by AKRF assumes the following:

- The traffic analyses for the 2017 and 2047 No-Build alternatives assumed the existing bridge with four lanes in the peak direction, and no other proposed improvements to the highway corridor;
- The TZB Replacement Project proposes essentially the same peak period/direction conditions– 4 peak-direction lanes and an unimproved highway;
- Future No-Build and Build traffic capacity conditions would essentially be the same and the projected 2017 and 2047 No-Build traffic conditions could therefore be used to represent conditions in those years after construction of the proposed new TZB.

In terms of the No-Build and Build alternatives under the TZB Replacement Project, the only difference would be that the new bridge would offer four lanes in the off-peak direction vs. 3 lanes on the existing bridge under No-Build conditions. The question was raised whether the increase in capacity due to this fourth off-peak lane over the bridge could increase off-peak direction traffic in the corridor (westbound in the AM peak and eastbound in the PM peak), resulting in potential traffic and related impacts along the corridor.

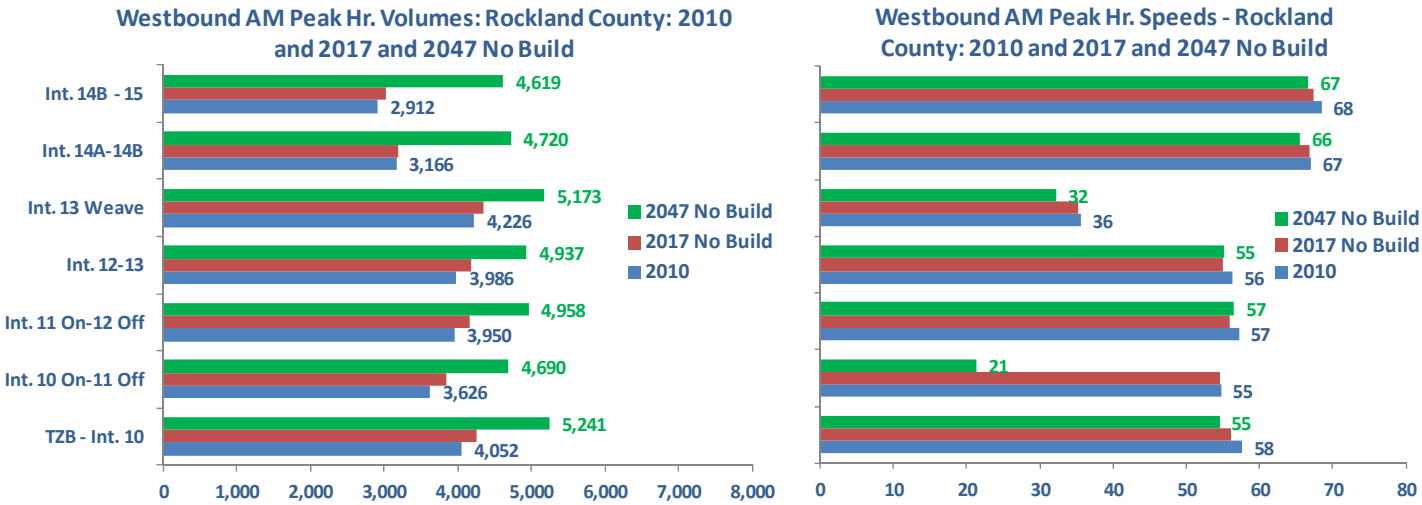
ANALYSES

Whether an additional fourth lane on the TZB under Build conditions would attract more off-peak direction traffic across the bridge in the peak periods would be determined by one factor: whether the existing 3 off-peak direction lanes are the controlling capacity constraint to future off-peak direction traffic flows in those periods. If this were the case, the addition of off-peak capacity would allow more traffic to be served and would attract additional traffic to the facility and adjacent highway segments. Conversely, if the capacity of the 3 off-peak direction lanes is not the controlling factor, then additional off-peak direction lanes would have little effect on off-peak volumes or speeds.

- **Westbound AM Peak Traffic**

The traffic analyses performed for the Preliminary DEIS for the TZB/I-287 Project documented conditions along the highway corridor under 2017 and 2047 No-Build conditions. As shown Figure 1, westbound AM peak traffic volumes coming over the bridge would grow substantially over this 37-year period. However, speeds would remain essentially the same over the bridge. These consistent speeds indicate that volumes will be less than capacity in all conditions, and therefore that there will be reserve westbound capacity over the existing 3-lane bridge into Rockland County through 2047, with virtually no constraint to traffic flows. Westbound AM Peak traffic conditions would not deteriorate in 2047 until the uphill segment west of Interchange 10 and the lane drop at Interchange 11.

Figure 1: Westbound AM Peak Volume and Speed Conditions on Thruway Segments in Rockland County: Existing (2010) and 2017 and 2047 No-Build Conditions

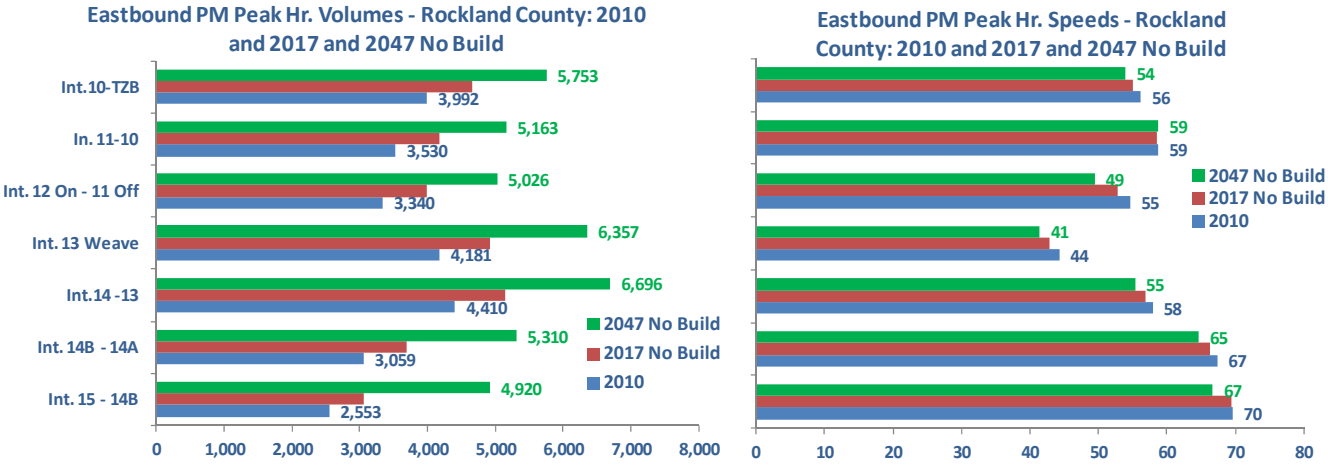


- **Eastbound PM Peak Traffic**

An equivalent analysis was performed for eastbound PM Peak traffic under No-Build conditions in 2017 and 2047, and the results are summarized in Figure 2 Similar to what was shown above for the westbound AM, while eastbound volumes going onto the bridge in the PM peak period would grow substantially over the 2010-2047 period, speeds would remain essentially unchanged. This indicates that eastbound PM traffic volumes wouldl be less than capacity for all conditions, and that no significant

capacity constraint is posed by the eastbound 3-lane bridge configuration in the PM Peak period. Adding a fourth lane will have no effect on speeds and will not attract additional traffic to the eastbound bridge in the PM peak. Similar data on future bridge volumes and speeds entering Westchester show volume growth with virtually no change in speeds over existing conditions.

Figure 2: Eastbound PM Peak Volume and Speed Conditions on Thruway Segments in Rockland County: Existing (2010) and 2017 and 2047 No-Build Conditions



SUMMARY

The analyses presented above demonstrate that the three lanes assumed to be provided in the off-peak direction on the existing bridge under 2017 and 2047 No-Build conditions would provide adequate capacity for projected traffic flows, with virtually no change in effective operating speeds under Existing (2010) conditions. Given those findings, no meaningful increase in off-peak volumes over the bridge would be expected with four lanes available in the off-peak direction under the proposed TZB Replacement Project Build scenario. The conditions along the highway in Rockland that were to be addressed by the highway improvements proposed under all of the TZB-I-287 Build alternatives will be the main regulators of traffic flow in the corridor.