New York State Department of Transportation
Metropolitan Transportation Authority Metro-North Railroad
New York State Thruway Authority

Presentation

Stakeholders’ Advisory Working Groups (SAWGs)
Traffic and Transit SAWG Meeting

Tappan Zee Bridge/I-287 Corridor Project

November 4, 2010
Slide 1:
This evening’s SAWG will continue our discussion of the proposed highway improvements in Rockland County. The PowerPoint presentation explains the analyses that led to the proposal of westbound and eastbound climbing lanes in Rockland County.

Slide 2:
A climbing lane is an auxiliary lane added to a steep section of a highway. By separating slower-moving vehicles such as trucks from general traffic, the climbing lane can improve the highway’s operations and safety. The two photos on this slide show climbing lanes adjacent to general purpose lanes.

Slide 3:
Morning and afternoon traffic on the Thruway is congested in part because of the highway’s profile in Rockland County. Whereas the hills of the Hudson River Valley run north to south, the Thruway runs east to west, with long segments of uphill grades that exacerbate operations in heavy volumes. Climbing lanes are sometimes proposed to improve these conditions.

The American Association of State Highway and Transportation Officials (AASHTO) and NYSDOT have established guidelines to determine whether the addition of climbing lanes to a highway segment is justified. The project team has
AASHTO recommends that a 10-mph reduction in truck speed be used to determine the “critical length of grade” -- i.e., how long does a highway segment of a particular grade have to be before a truck speed reduction of 10 mph occurs?

The Thruway has a number of locations with 3% grades and therefore has a corresponding critical length of grade of approximately 1,800 feet. Most of the steep grades on the Thruway are one mile or more in length.

A truck speed profile model (TSPM) was developed to assess how trucks on the Thruway perform on upgrades. The results were then plotted for each direction of travel, as shown on the graph on the slide. Areas where estimated truck speeds would be 10 mph or more below a truck’s desired speed level are highlighted.

In the eastbound direction, reduction in truck speeds greater than 10 mph would occur between Interchange 14B and Route 59 in Monsey, and between Interchanges 11 and 12.

The graph on this slide depicts the TSPM results in the westbound direction. Reduction in truck speeds greater than 10 mph would occur between the Tappan Zee Bridge and Route 59 in Monsey.
The second guideline to justify climbing lanes is related to traffic operations, specifically the levels of service (LOS) provided by a highway. LOS describe the quality of highway operations on a scale from “A” to “F.” The guideline states that the addition of climbing lanes is justified if a highway operates at LOS E or F during the peak periods.

An analysis of peak-direction traffic volumes, projected to 2035, was performed. (Peak directions are westbound in the PM peak and eastbound in the AM peak.)

The table highlights segments of the Thruway where uphill grades would result in lower heavy truck speeds and conditions below the AASHTO guidelines of LOS E and F. The analyses support the inclusion of climbing lanes in portions of the eastbound and westbound Thruway.

This slide discusses the relationship of climbing lanes to safety.

This portion of the Thruway has a higher than average accident rate. Therefore the recommendation to add climbing lanes would be a safety improvement as well as an operational improvement.
Slide 8:
This slide describes the results of the evaluation, which was performed using transportation, environmental, and cost criteria. Based on these results, the project team recommended the inclusion of climbing lanes in each direction in the segments shown in the diagram. In the eastbound direction, climbing lanes are recommended from Interchange 12 to 11 based on truck speed reductions, heavy volumes, and poor LOS. In the westbound direction, climbing lanes are recommended from Interchange 11 to the Spring Valley truck toll barrier.