



TO: Scott Anderson, Partner, Verrill Dana, LLP.

FROM: John Adams, PE, PTOE
Senior Transportation Engineer
Milone & MacBroom, Inc. (MMI)

David Sullivan, PE
Associate & Senior Transportation Engineer
Milone & MacBroom, Inc. (MMI)

DATE: April 6, 2017

RE: MTA York Toll Studies Review

YORK TOLL PEER REVIEW

The focus of our review is on the ability of the potential diversion routes identified by the Maine Turnpike Authority (MTA) in the studies completed by HNTB (report dated September 14, 2016), and the CDM Smith study completed April 14, 2014. This anticipated diversion has been identified by MTA as a potential issue related to the installation of an All Electronic Tolling facility to replace the existing York Toll Plaza located just north of the Exit 7 I-95 Interchange in York, Maine.

HNTB Report, September 14, 2016

General

1. This study is based on estimates of diversion traffic volumes from I-95 to area non-interstate roadways identified in the CDM Smith Study dated April 14, 2014, and involves a review of impacts to U.S. Route 1, State Route 236, and other area roadways.
2. This study analyzed two conditions: 1. The average summer weekday, and 2. The peak hour of the average day.

Average Summer Weekday

3. The average summer weekday analysis is largely based on the existing Maine DOT Travel Demand Model (TDM). The report states that the TDM is a planning-level tool and further, provides measures of effectiveness both regionally and statewide. This method of analysis may not be the most appropriate, however, for detailed micro level analysis that is required to best define and determine impact along likely diversion routes between I-95 Exits 7 and 19.
4. To reach any certain conclusions, additional background and back-up information would be necessary regarding the inputs and methodologies that the TDM uses to make detailed determinations of changes in traffic volumes on particular roadways and intersections. Specifically, we would also request information on the TDM methodologies for accounting for existing excessive delays on particular roadways and intersections and how the TDM processes these factors.

5. The average summer weekday analysis predicts impacts in terms of changes in traffic volumes, vehicle miles traveled, and vehicle hours traveled, but it does not, however, capture traffic operations in terms of average delay, level-of-services, volume to capacity ratios and queues at specific intersections. This would likely indicate higher increases in average delay at key intersections such as; Route 1 at Shore Road & Beach Street in Ogunquit, and the Turnpike Connector at the SB Turnpike Ramps in York; when compared to the peak hour analysis that was completed for the peak hour of the average day.
6. Given the existing excessive average delays and congestion levels that exist at some intersections along the likely diversion routes, we feel this may be a limiting factor for the amount of traffic volumes that actually divert. We are in agreement that there likely will be some level of traffic volumes diverting from I-95 due to a potential Automated Electronic Tolling (AET) system, however due to the existing excessive increases in travel times and queues during the summertime conditions, especially during peak hour times of the summer, potential diverting traffic may be discouraged from exiting I-95. In other words diversion of traffic volumes from I-95 may be capacity constrained by the potential diversion routes.

Peak Hour of Average Day

7. The second analysis method focused on the peak hour of the average day. This is more of a “micro” level analysis and generally is better at capturing impacts to particular intersections and roadways along the potential diversion routes.
8. The methodology utilized for this analysis seems reasonable and in line with acceptable industry standards in regards to the origin destination study, assignment of diverting traffic volumes and use of Synchro for traffic operations analysis at the study intersections.
9. We agree that during the average traffic volume times of the year such as May or September, when traffic volumes are lower than the summer peak times, that Route 1 and other diversion routes will have more available capacity to accept diverting traffic. However, based on the results of the Synchro traffic operations analyses at the study intersections, it is our opinion that motorists may not tolerate the levels of delay and congestion during peak hour travel times. For example, the intersections of Route 1 at Shore Road & Beach Street in Ogunquit, and the Turnpike Connector at the SB Turnpike Ramps in York, are forecasted to experience excessive delays. The Shore Road intersection in Ogunquit is expected to increase from the 2019 No-Build Condition average delay of 73.3 secs (LOS F), to 202.4 secs of delay under the average diversion condition and 326.2 secs under the 90th percentile diversion with AET. For the SB Turnpike Ramps in York, the average delay is forecasted to increase from 120.3 secs (LOS F) to 253.1 secs under the average diversion and 375.8 secs under the 90th percentile diversion condition. During peak hour times of the average time of year the diversion routes will be capacity constrained which may discourage traffic from diverting from I-95 at the levels that have been forecasted.
10. We would recommend that additional intersections be added to the study to more accurately depict issues with congestion along the potential diversion routes. Some additional suggested intersections would include: Route 1 at Mile Road and Route 1 at Route 9B in Wells; also potentially Route 109/9 at North Berwick Road in Wells; and in North Berwick - Route 9 (Well St) at Route 4 (Elm St) and Somersworth Road (Route 9) at Route 4 (Elm St).
11. The critical roadway analysis that was complete by HNTB on Route 1 near Captain Thomas Road indicated that Route was at or over capacity for ten hours of the average weekday in August Of 2014. This condition is only worsened by background growth and forecasted diversion increases. We are not sure the forecasted delays will be tolerated by potential diverting

motorists. This condition may discourage and lessen the number of motorists diverting from I-95.

12. Overall, it is our opinion that the amount of delays and congestion predicted by the HNTB study may not come to fruition as diverting motorists may not tolerate the delays and negative impacts to their trips.

CDM Smith Report, April 14, 2014

1. According to the report, in 2014 EZ-Pass accounts for 64% of York Toll Plaza transactions and 36% percent are cash paying customers. Of the 36% that are cash paying customers, 37% of those are Maine residents. Our understanding is that EZ-Pass use at the York tollbooth is now estimated at 76%, which suggests EZ-Pass use is on the rise.
2. The report states that the imposition of a \$3.00 surcharge as part of implementing an AET will result in 3,400 to 5,500 vehicles per day diverting. Their study reviewed surcharge levels ranging from \$0.00 to \$4.00. The analysis seemed to be completed independent of the alternative routes ability to accept additional traffic volumes when many of the intersections and roadways are at or above capacity under existing conditions during both peak hours of the average day and the average summer day.
3. Overall, it seems that the diversion calculations in the report are primarily based on the Technology diversion (3%) and driver refusal to pay the surcharge of \$3.00 in addition to the \$3.00 cash toll fee. A reduction in the size of the surcharge would likely reduce anticipated diversion levels.
4. Although, the assumptions in the CDM smith study may be reasonable for a general or generic look at converting tolls to AET, the assumptions, calculations and results of the study do not seem to take into account the existing condition of the potential diversion routes. It appears to be assumed that the calculated diversion traffic volumes would utilize the alternate routes regardless of how much additional average delay and congestion is introduced. This may be a difficult item to quantify, as it is based on individual motorists tolerance for increased delay to avoid the AET. We would ask that additional back-up information be provided by the MTA on this topic with further explanation.

Overall Summary Comment/Concern

The methodologies utilized in the HNTB traffic studies for the average summer day and peak hour of the average day seem to be reasonable and consistent with industry practice. The results of their traffic studies also seem reasonable given the inputs they received from the CDM Smith study. However, we do have two concerns with the results and assumptions of the studies.

1. The first is that it is unclear if the inputs into the CDM Smith model have factored or considered the capacity constraints of the potential diversion routes. It appears from our review of the study documents that capacity constraints were not considered by the CDM smith study. Further, they seem to base the diversion inputs on their experience with other AET facilities, which may or may not be applicable to York's particular situation and characteristics. Based on the results of the HNTB study, which indicate excessive delays at some study intersections, this should be taken into account and potentially cause the CDM Smith models to make adjustments to (or calibrate) their assumptions and model inputs. In other words, if the excessive delays will not be tolerated by motorist, then adjustments should be made to CDM Smith's models which may result in lower diversion rates.

2. Secondly, even with the high projected delays and congestion at some of the diversion route study intersections, the studies assume that, in reality, motorists will tolerate this and continue to use these alternate routes. This may not be the case.