

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN THE MATTER OF

MAINE TURNPIKE AUTHORITY)	
YORK TOLL PLAZA)	PRE-FILED REBUTTAL TESTIMONY
YORK, YORK COUNTY)	OF INTERVENOR COALITION FOR
#L-27241-TG-A-N/#L-27275-TP-A-N)	RESPONSIBLE TOLL COLLECTION

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MARSHALL JARVIS

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**STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Maine Turnpike Authority)	
Natural Resources Protection Act)	
Site Location of Development Act)	PRE-FILED REBUTTAL TESTIMONY
York Tollbooth Replacement)	OF MARSHALL JARVIS
L-27241-TG-A-N)	
L-27275-TP-A-N)	

My name is Marshall N. Jarvis, II, and the following testimony is provided as rebuttal to the pre-filed testimony submitted by Gary T. Quinlin of CDM Smith and Peter Mills, the Executive Director of MTA.

I. Rebuttal to Pre-Filed Testimony of Gary T. Quinlin.

As noted in his report, attached at Exhibit B to MTA’s pre-filed testimony, Mr. Quinlin’s firm, CDM Smith, was asked to develop a model to analyze the potential revenue impacts of both an AET (all electronic tolling) and ORT (open road tolling) toll plaza. (MTA Pre-Filed Testimony Ex. B, p. ES-1 (“MTA Ex. __”). Mr. Quinlin has clarified that his goal was not to decide which type of toll plaza the MTA should construct, nor was it his job to make “policy recommendations” to the MTA. (G. Quinlin Testimony. p. 1). Instead, Mr. Quinlin was asked to conduct an “independent assessment” to determine the relative financial impacts of an AET v ORT facility. (MTA Ex. B, p. ES-1).

Mr. Quinlin’s ultimate conclusion, having reviewed impacts associated with traffic, toll rates, operating costs, construction costs, and net revenue of both an AET and ORT facility, was that the “best 10-year net total revenue, after recognizing both operating and capital investment cost, would come from AET.” (MTA Ex. B, p. 48). Mr. Quinlin determined that even taking into consideration the challenges with an AET facility, including uncollectable tolls (leakage), traffic diversions, and other downsides of AET, the construction and operation of an AET facility

would net the MTA an additional \$24 million in revenue over the first ten-year period. (MTA Ex. B, pp. 47-48).

Even though Mr. Quinlin found that AET was a financially preferable option, the MTA staff still decided to reject AET. This was due to two factors. First, Mr. Quinlin noted that the \$24 million surplus would occur only if MTA imposed a \$3 surcharge on “pay-by-plate” video bills sent to cash customers. Second, Mr. Quinlin predicted that this \$3 surcharge would drive 3,400 to 5,500 drivers, per day every day, from the turnpike to Route 1 and other side roads, in an attempt to avoid the \$3 surcharge. There are several errors and inconsistencies with Mr. Quinlin’s report that undermine these conclusions.

First, Mr. Quinlin selected an artificially high surcharge. In his report, Mr. Quinlin noted that the,

...optimal surcharge level is identified as the lowest surcharge at which a given scenario becomes net revenue neutral. This is the point at which surcharge revenue is sufficient to offset changes in toll collection costs and revenue leakage due to the implementation of AET.” (MTA Ex. B, pp. 15-16).

When CDM Smith presented its final report, however, it did not calculate the “optimal” surcharge that would result in revenue neutrality with ORT. Instead, it used a \$3 surcharge that resulted in a net excess of \$24 million in revenue for the MTA over the first ten years. (MTA Ex. B, p. 47-48). The “optimal surcharge”—the one that would result in net revenue parity between AET and ORT—is lower than \$3.

With regard to diversions, CDM Smith predicts that 3,400 to 5,500 cars per day will leave the turnpike to avoid paying the \$3 surcharge. (MTA Ex. B, p. 21, Table 5, line 8). This figure is high, and assumes that 30-50% of all cash customers will divert to avoid a \$3 payment. (MTA Ex. C, p. 5). Mr. Mills then reported this figure to the MTA Board, and as discussed below, this was a significant factor in the Board’s rejection of AET. (MTA Ex. D). There are

several problems with these figures.

First, although the MTA Board's decision to reject AET was based on a representation that 3,400 to 5,500 cars per day would divert from the turnpike, it is clear, even from MTA's own reports, that such levels of diversion were never going to occur. That is because the 3,400 to 5,500 estimate was only good for 2015, and in 2014, when the CDM Smith report was issued, there was no possible way the MTA's new tollbooth would be operational the next year, in 2015. As noted in MTA's application, when HNTB did its traffic impact study in 2016, it used 2019 figures from CDM Smith's report, as that was the earliest the new York tollbooth would be up and running. (MTA NRPA Application, Appendix 2G, p. 4) ("...since the anticipated opening year for an AET project in York is now 2019, the traffic analysis of this study focuses on 2019") ("2016 HNTB Report").

This is a critical error, because CDM Smith predicts that diversions will drop by approximately 26% from 2015 to 2019. (MTA Ex. B, p. 21, Table 5). In 2019, the first possible year of operation for the new tollbooth, CDM Smith estimates traffic diversion of 918,000 cars per year (down from 1,259,000 in 2015). (MTA Ex. B, p. 21, Table 5). This amounts to 2,500 cars per day, not 3,400. Thus, if the MTA Board voted to reject AET based on 3,400 to 5,500 cars per day, even if these figures were properly calculated for 2015, such levels of diversion were never going to occur, and CDM Smith and the MTA staff knew this in 2014 when the information was communicated to the Board.

Second, CDM Smith's diversion numbers were not properly calculated. CDM Smith calculated diversion based on "well tested diversion techniques." (MTA Ex. B, p. 6). Although neither CDM Smith nor MTA has provided the Department with the back-up for these figures, it is clear that CDM Smith did not evaluate the ability of Route 1 or other "diversion routes" to

handle this traffic, or what drivers would experience when they diverted. A proper diversion assessment must evaluate both the desire to avoid the surcharge and the impact to a driver's travel if he or she diverts. If Route 1 would provide a clear and quick alternative route, then a greater number of drivers wishing to avoid the \$3 surcharge might divert. If however, as MTA asserts, the diverting drivers will be tied up for hours fighting Route 1 traffic through York and Ogunquit, far fewer drivers will divert. As CDM Smith's diversion figures do not include an assessment of this latter factor, they are of limited value.

An accurate diversion estimate must include all the factors that drivers consider when deciding whether to divert—and it is not just the size of the surcharge. Attached at Exhibit “A” is the Executive Summary from a 2013 study by the Transportation Research Board entitled “Improving Our Understanding of How Highway Congestion and Pricing Affect Travel Demand” (“Congestion and Pricing Study”). This study evaluated “driver response to congestion and road pricing” so as to allow highway agencies to forecast “the future use of roadway systems” and estimate “the effect that pricing has on demand and route choice.” (Congesting and Pricing Study, Foreword, p. 1).

This study shows that when predicting whether drivers will pay higher toll costs or change routes to avoid paying there are numerous factors involved in addition to cost, including the distance the driver has travelled, the quality of the driving experience on the diversion roadway (“many drivers find driving in stop-and-go traffic more stressful than driving in free-flow conditions”), and the reliability of each route. (Congesting and Pricing Study, pp. 3-5). Household income and the number of passengers are also factors. (Congesting and Pricing Study, pp. 11-12).

In other words, cars with more passengers, travelling a greater distance, are less likely to

divert to a roadway with greater congestion, and are more likely to pay to avoid increased travel times. Regardless of the variation, it is impossible to accurately calculate diversion rates without considering the delays associated with the diversion. The study concluded that drivers will “pay” \$5 to \$50 to avoid an hour of delay or unreliability. (Congesting and Pricing Study, Foreword p. 2). As such, toll charges must be “significant” to force drivers to use an alternative route that increases travel time.

Further, the Congestion and Pricing Study specifically discussed “toll bias,” or drivers’ “bias against paying a toll, regardless of the toll amount.” The resistance to paying a toll—including a toll that is larger due to the imposition of a surcharge—“can be overcome by a guaranteed superior [level of service] in terms of travel time savings and improvements in reliability.” (Congesting and Pricing Study, p. 14). When considering drivers’ response to a change in tolls, the key finding is that “Traveler responses to congestion and pricing depend on the range and attractiveness of available alternatives.” (Congesting and Pricing Study, p. 14).

It is clear that CDM Smith never considered the “attractiveness” of diversion because it wasn’t until 2016 that MTA “analyzed the traffic impacts of the expected traffic diversions to non-interstate highways if the York Toll Plaza is converted to AET.” (2016 HNTB Report, Appendix 2G to MTA NRPA Application). This assessment was done more than two years after CDM Smith issued its report. Without the information developed by HNTB, it was impossible to accurately predict traffic diversions.

When MTA finally assessed these impacts, HNTB concluded that the traffic diversions predicted by CDM Smith would result in “significant impacts to key roadways and intersections” in ten communities, including the Town of York. (2016 HNTB Report, p. 1). HNTB predicts daily summer traffic volumes to increase 5-50% and an additional 750,000 to 1.4 million

additional vehicle hours of travel on side roads during the summer. (2016 HNTB Report, p. 2). Even during the off-season, the predicted diversions would increase wait times at numerous intersections on Route 1 from 1-2 minutes, to 5-6 minutes at each intersection, and could triple the delays at the intersections of Route 1 at Shore Road and Beach Street in Ogunquit and the southbound turnpike ramps in York. (2016 HNTB Report, p. 2).

As shown in HNTB's report, Route 1 is not "attractive" as a diversion route. Nevertheless, CDM Smith appears to be standing by its prediction that 30-50% of cash customers will, to avoid a \$3 payment, join with others to waste 1.4 million additional travel hours fighting traffic on Route 1.¹

Another problem with Mr. Quinlin's diversion analysis is that the inflated \$3 surcharge leads to an overestimation of diversion. Mr. Quinlin has testified that there is a direct relationship between the size of the surcharge and traffic diversion levels (MTA Ex. B, p. 17, Table 4, Line 8). His 3,400 figure (1,259,000 per year) at \$3 drops to 2,145 (783,000 per year) when the surcharge is lowered to \$2. As Mr. Quinlin's \$3 surcharge is high, his diversion numbers are also too high.

Finally, even if Mr. Quinlin's conclusions in 2014 were correct, they are outdated and unusable today. In order to understand why Mr. Quinlin's 2014 report is no longer of any value, we need to review Table 5 of his 2014 report. Line 2 shows an increasing percentage of E-ZPass

¹ The MTA met with Maine DOT in an attempt to solicit DOT's opposition to an AET facility on the basis of traffic impacts to Route 1. (August 24, 2016 email from HNTB's Elizabeth Roberts to MTA's Bruce Van Note, attached at Exhibit "B"). Ms. Roberts noted that DOT was not concerned about the predicted impacts and that further analysis was necessary in order to show DOT that there was a problem. In response, Mr. Van Note met with Maine DOT, but when asked to do the assessment necessary for DOT to assess the impacts, Mr. Van Note informed DOT that such an assessment was unnecessary, as these diversions "are not going to happen too much." (September 9, 2016 email from Mr. Van Note to Ms. Roberts, also attached at Exhibit "C"). Regardless, to date, Maine DOT has not raised any concerns regarding an AET facility in York.

transactions, from 2015 to 2030. This is due to the fact that Mr. Quinlin predicts an increase in E-ZPass usage, a fact that is proven by the changes in E-ZPass use from 2014 to the present. As a result of the increase in E-ZPass use, his predictions for traffic diversions drop over time, from 1.259 million in 2015, to 918,000 in 2019. As 2019 is the earliest year of operation for the new tollbooth, Mr. Quinlin's predictions (and calculations) for the years 2015 to 2018 are no longer of any value. If we are to truly evaluate a 10-year net present value assessment of the financial implications of AET v. ORT, Mr. Quinlin should review the time period of 2019 to 2029.²

Because of Mr. Quinlin's predicted increase in E-ZPass use, his prediction of a drop in traffic diversions, and other long-term benefits of AET, his conclusion that AET will net an additional \$24 million is now outdated, and far too low. Assuming the earliest start date for operation of the new tollbooth is now 2020 (given that it's been a year since MTA predicted a 2019 operation date), then the Total Net AET Toll Revenue Impact in Table 5 and Total Net ORT Toll Revenue Impact from Table 6 should be recalculated for the ten year period 2020-2029. Based on our initial review of Mr. Quinlin's own data, this would result in a net revenue surplus of \$32 million with an AET facility, not the \$24 million predicted by Mr. Quinlin using the outdated time period. When, as noted above, Mr. Quinlin then corrects the surcharge to make it "optimal," meaning that it is reduced to eliminate the \$32 million surplus and provide for "net revenue neutrality" between AET and ORT, only then will the MTA (and the Department) know what the actual surcharge would need to be to operate an AET facility without any net loss of revenue. That figure will be significantly lower than \$3.

Mr. Quinlin has yet to conduct this assessment. Instead, he continues to testify that MTA

² This time period is based on MTA's direction to HNTB that 2019 was the "anticipated opening year" of operations for the new tollbooth. (2016 HNTB Study, p. 4). At this point, the anticipated opening year of operations is likely 2020 or later. The MTA should provide the Department with a revised initial operations date, such that CDM Smith can re-run the model for the appropriate 10-year period.

must impose a \$3 surcharge on cash customers in order to make AET work, while his calculations plainly show that such a surcharge is too high—even for the time period he considered. As he has considered the wrong time period, his calculations are even farther off.

This is a critical error as the surcharge is directly related to the other “problem” with AET, namely the anticipated traffic diversions. If CDM Smith calculates the correct surcharge—or the “optimal” surcharge as Mr. Quinlin puts it—this figure will be much lower than \$3, possibly lower than \$2. When this figure is corrected, Mr. Quinlin’s diversion estimates will drop significantly, as he has testified that a \$2 surcharge would result in significantly fewer diversions. When Mr. Quinlin also uses the correct time period (2019-2029) for the diversions, the number of expected diversions, even with Mr. Quinlin’s flawed assumptions, would drop, thus generating more revenue and allowing for a further reduction in the surcharge.

Finally, Mr. Quinlin’s use of an inflated surcharge figure has also invalidated HNTB’s 2016 traffic impact study, as the 2019 diversion figure used by HNTB, 918,000 cars, or 2,515 cars per day, is too high. For example, if the surcharge need only be \$2 to maintain revenue neutrality, Mr. Quinlin would predict approximately 570,000 cars per year diverting in 2019, or only 1,562 cars per day.³ This reduction in diversion requires HNTB to revisit its traffic study.

In conclusion, these errors and Mr. Quinlin’s use of the wrong time period in his current testimony invalidate the conclusions in his 2014 report. Mr. Quinlin’s basic conclusion will continue to be correct—the best financial deal for the MTA is an AET facility. If Mr. Quinlin re-runs the model over the correct time period, and corrects his analysis to eliminate the surplus, only at that time will the MTA know what surcharge would be necessary to operate an AET

³ This figure is calculated using Mr. Quinlin’s expected reduction in diversion from 2015 to 2019, and using, as the 2015, the \$2 surcharge diversion figure of 783,000 from line 8 of Table 4 of the CDM Smith report.

facility on the same financial footings as an ORT facility. The figures given to the Board in 2014 were wrong the day they were presented. As such, the MTA Board's decision to reject AET was based on incorrect information, and their vote on July 24, 2014 can no longer support a decision that no upland alternative will meet MTA's project needs and purpose.

II. Rebuttal to Pre-Filed Testimony of Peter Mills.

Mr. Mills testified that in order to make a decision regarding AET, the MTA retained CDM Smith "to obtain a full description of how to implement AET, what financial adjustments might be needed, and what risks encountered so that a policy decision could be made about whether to adopt AET." (P. Mills Testimony, p. 3, ¶ 15). CDM Smith's final assessment was "developed from the firm's extensive experience in advising agencies throughout the United States on similar questions and assisting many of them in making the transition to cashless tolling." (P. Mills Testimony, p. 5, ¶ 33).

Mr. Mills testifies that he understood that many of the factors relevant to assessing the feasibility of AET were not publicly available, and thus "a responsible way to obtain good information is to hire a consultant like CDM Smith who is retained by agencies throughout the industry to track revenue and costs from internal data so that toll roads and their bond holders can make rational decisions tailored to the factual circumstances of each highway." (P. Mills Testimony, p. 10, ¶ 60).

Mr. Mills then testifies that when CDM Smith applied this expertise, it "revealed that AET doesn't work" for the York tollbooth. (P. Mills Testimony, p. 5, ¶ 35). Based on this alleged conclusion by CDM Smith, Mr. Mills and his staff then submitted a report to the MTA Board concluding that AET "was not a feasible choice at York." (P. Mills Testimony p. 5, ¶ 34).

There are several problems with Mr. Mills' factual assertions. First, as noted above, after

CDM Smith exercised its “extensive experience” and developed a model that evaluated all financial considerations and risks with an AET facility, CDM Smith concluded that, over the first ten year period, MTA would net an additional \$24 million in revenue with an AET facility as compared to the ORT facility proposed in MTA’s DEP application. (MTA Ex. B, pp. 47-48). Even following a 90% confidence level review, CDM Smith still concluded that “the net AET revenue impact remains positive.” (MTA Ex. B, p. 48).

At no point in its analysis or report did CDM Smith conclude that an AET facility was “not a feasible choice” or that “AET doesn’t work” for the York tollbooth. This determination was made by Mr. Mills and his staff. After reviewing CDM Smith’s first draft, Mr. Mills requested changes in the text of the report to highlight two factors that he believed undermined CDM Smith’s conclusion that AET would generate \$24 million in additional revenue. (P. Mills March 7, 2014 email to Gary Quinlin, attached at Exhibit “D”).

When the CDM Smith report was finally sent to the MTA Board for review, Mr. Mills included a cover email to the Board in which he stated that CDM Smith’s conclusion that AET was more financially feasible than ORT (by \$24 million over the first ten years), had to be presented in the “appropriate verbal framework.” (P. Mills March 11, 2014 email to MTA Board, attached at Exhibit “E”). Mr. Mills then noted that the \$3 surcharge used by CDM Smith in their AET model “can be safely produced in a computer model” but “would not likely be tolerated in the real world.” This comment regarding the \$3 surcharge was repeated by another MTA staff person, Bruce Van Note, who informed the Board that “in his opinion” a \$3 surcharge “simply will not work.” (MTA Ex. D). The basis for Mr. Mills’ and Mr. Van Note’s opinions regarding the proposed \$3 surcharge are unknown, as CDM Smith never concluded that a \$3

surcharge would not work or would not be tolerated.⁴

The basis for Mr. Mills' conclusion appears to be that charging cash customers more than E-ZPass customers is "contrary to good social policy." (P. Mills Testimony, p. 11 ¶ 67). Neither CDM Smith nor HNTB, however, have concluded that surcharges for cash customers raise policy issues and, in fact, such charges are common with any ETC toll system. In New York, surcharges for non-E-ZPass drivers run from \$2.74 to \$5.48 on certain bridges and tunnels, to significantly higher amounts for commercial truck traffic. On the Henry Hudson bridge, the E-ZPass toll is \$2.64 and the cash toll includes a surcharge of more than 100% for cash customers—for a total toll of \$6.⁵ (New York's tolling schedule for bridges and tunnels is attached at Exhibit "F").

Apparently Mr. Mills was aware of the large surcharge on the Henry Hudson Bridge, commenting to Mr. Quinlin that a mail charge "nearly \$2 higher than the electronic rate" is "interesting." (P. Mills July 15, 2016 email to G. Quinlin, attached at Exhibit "G"). In this email Mr. Mills' math calculation was incorrect, as the cash surcharge at that time was nearly \$3 higher than the electronic rate.⁶ All cash drivers using New York's bridges and tunnels pay more than E-ZPass users, and there is no "policy" reason users who impose higher costs on a tolling agency should not pay for those costs.

⁴ As discussed above in my rebuttal to CDM Smith's testimony, the \$3 surcharge is higher than necessary to address the "financial considerations and risks" of an AET facility.

⁵ CDM Smith has never concluded that the \$3 surcharge is too high, against public policy, or offered any other objection. In fact, Gary Quinlin has noted that the surcharge included in his assessment is "not outside the limits of what other facilities experience." (MTA Ex. Q). In assessing Massachusetts' AET system, and the recommendation of its consultant not to impose surcharges, Mr. Quinlin noted that the consultant concluded that "a video-toll surcharge is in place on all currently operating facilities that employ video collection." It is commonplace, therefore, to impose additional fees on cash customers and no other state has concluded such a practice violates "good social policy."

⁶ Apparently, in 2016 the cash toll was \$5.50. According to the attached schedule, it has now been raised to \$6.

As noted in the minutes of the MTA Board meeting in which AET and the CDM Smith report was discussed, the other important factor in the Board's rejection of AET was the concern over "diversions," or cash drivers leaving the turnpike to avoid the \$3 surcharge. Mr. Mills has testified that a "chief consequence" of the proposed surcharge is that 30-50% of cash customers are likely to "divert" "onto adjoining roads like Route 1." (MTA Ex. C, p. 5). Mr. Mills informed the MTA Board that this flight of cash customers, 3,400 to 5,500 cars per day, would overwhelm the side roads.

When they voted to accept Mr. Mills' recommendation to reject AET, several MTA Board members cited the traffic diversions as a significant problem, including Chairman Wathen, Mr. Goodrich, and Mr. Dority. (MTA Ex. D, p. 1). Deputy Commissioner Bruce Van Note stated to the Board that the anticipated diversion (in addition to the \$3 surcharge) "simply would not work." (MTA Ex. D).

As discussed in greater detail above, in my rebuttal to the testimony submitted by Mr. Quinlin, CDM Smith's diversion estimate is wildly inflated. In sum, the \$3 surcharge is artificially inflated, as the modeling goal was not to generate a surplus with AET, but to ensure revenue neutrality with ORT. Second, CDM Smith's diversion estimate was calculated without any consideration of what drivers would encounter on Route 1, in Ogunquit, on a Summer day or evening. Although as a modeling exercise CDM Smith's diversion numbers "can be safely produced in a computer model," the delays associated with diverting to Route 1 "would not likely be tolerated in the real world."

Given this, the Board's decision to reject AET was not based on financial feasibility, but was based on an over-inflated surcharge figure, and diversion estimates that MTA and CDM Smith knew would never occur.

Date: 4/28/17

Marshall Jarvis
Marshall Jarvis

STATE OF MAINE
County of York

Date: 4/28/17

Personally appeared before me the above named Marshall Jarvis, who, being duly sworn, did testify that the foregoing testimony was true and correct to the best of his knowledge and belief.

Before me,

Cathy G. Brown
Notary Public
My commission expires: 3/19/21

CATHY G. BROWN
Notary Public Maine
My Commission Expires March 19, 2021