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June 5, 2017

Marybeth Richardson, Hearing Officer
Department of Environmental Protection
312 Canco Road
Portland, ME 04103

Re: Maine Turnpike Authority, York Toll Plaza
L-27241-TG-A-N
L-27275-TP-A-N

Hearing Officer Richardson:

On behalf of the Maine Turnpike Authority, I enclose the following:

(1) Applicant's Post-Hearing Brief regarding Modeling Changes:
(2) Applicant Statement regarding Department Questions; and
(3) Expert Statement regarding Modeling Changes.

Thank you very much for your continued attention to this matter. Please do not hesitate to contact me with any questions.

Sincerely,

Joanna B. Tourangeau

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN THE MATTER OF

MAINE TURNPIKE AUTHORITY	) APPLICATION FOR NATURAL
YORK TOLL PLAZA	) RESOURCES PROTECTION ACT PERMIT,
YORK, YORK COUNTY, MAINE	) WATER QUALITY CERTIFICATION, AND
L-27241-TG-A-N	) SITE LOCATION GENERAL PERMIT
L-27275-TP-A-N	)

APPLICANT'S POST HEARING
BRIEF REGARDING CDM SMITH MODEL REVISIONS

Pursuant to Section 23 of Chapter 3 of the Maine Department of Environmental Protection's ("Department") rules, Applicant Maine Turnpike Authority files this initial post-hearing brief on the sole question presented by the Department: "whether the Maine Turnpike Authority (MTA) should be required to recalculate the financial impacts of AET and ORT facilities for a ten-year time period beginning in 2019." As will be discussed in detail below, the answer is no. There is no credible evidence in the record indicating that recalculating the financial impacts of AET versus ORT for a ten-year period beginning in 2019 would provide results that would alter the practicability of AET in comparison to ORT. The data and the record are clear. MTA's decision that AET was not practicable remains sound.

EXECUTIVE SUMMARY

Intervenor focused its arguments on the 2015 start date in the CDM Smith 2014 modeling of the surcharge and traffic diversion impacts of AET versus ORT. Intervenor argues that because the new plaza will not be built in 2015, the starting line on the existing model should be moved forward to 2019 and all modeled data preceding 2019 should be ignored. Execution of this exercise, Intervenor argues, proves that there will be a smaller toll increase at York and thus less traffic diversion off the Turnpike. Consequently, Intervenor argues, AET is a practicable alternative to ORT. Each premise of Intervenor's argument is wrong.

AET is not a practicable alternative to ORT due to its inferior financial, logistical and technological characteristics. In order to thoroughly understand a few of the characteristics of AET versus ORT, the MTA worked with CDM Smith in 2014 to complete a model which itself updated the study completed by HNTB in 2009. The CDM Smith model was designed to predict, based on 2013 data, what toll increase and resulting traffic diversion would be required in order to achieve financial parity between AET and ORT over a ten years period given the greater capital costs associated with ORT.

Even with certain model biases in favor of AET, AET came closest to financial parity with ORT only when the toll at York was doubled. The MTA planning documents do not contemplate toll increases before 2031. Toll increases result in diversion of traffic. The MTA was created to streamline traffic off side roads- not to divert traffic to Route 1 and other state roads. In short, AET has financial and logistical impacts that make it impracticable for the MTA when compared to ORT.

If one moves the starting line of the model forward to 2019 or if one updates the model, as Intervenor suggests, there is no evidence in the record indicating that implementation of AET at York would not require the MTA to increase tolls and thereby divert traffic off the Turnpike. There can be no argument but that the existing CDM Smith model includes a doubling of the toll at York throughout the ten year modeled period- including in 2019. There is also no dispute that doubling the toll will divert traffic from the Turnpike onto other adjacent routes.

The same outcome- increased tolls resulting in diversion- is true if one updates the model. If one looks at the available raw data inputs into the model for 2014-16, each of the variables has trended unfavorably for AET resulting in unanimous expert opinion that updated modelling results for AET would require toll increases and result in traffic diversion.

The record is replete with evidence that implementation of ORT at York results in no toll increase and increased Turnpike traffic from adjacent state roads. No amount of tweaking the model will change these facts. It is the reasoned decision of the MTA that doubling the toll at York and diverting traffic from the Turnpike make AET impracticable in comparison to ORT which, the model clearly indicates, will have none of these financial and logistical drawbacks.

BACKGROUND

In July 2014, after years of expert analysis and open and careful consideration, the MTA Board of Directors determined that All Electronic Tolling ("AET") was not feasible for the York toll plaza, and directed MTA Staff to pursue Open Road Tolling ("ORT"). *See* Mills Pre-Filed Testimony at 37; Davidson Pre-Filed Testimony at 1-5; Turnpike Exhibit D. This decision was and remains a policy, business and technical judgment regarding how to prudently implement highway speed tolling on the Turnpike in a manner that meets customer expectations, operational needs, transportation system needs, and bonding requirements. By Maine law, that decision properly rests with the MTA. *See* 23 M.R.S.A . §§ 1965(1)(H) and (M).

The MTA filed an application in October of 2016 to construct a new ORT plaza at mile 8.8 of the Maine Turnpike ("Turnpike") in York, Maine ("MTA Application") by seeking a Natural Resources Protection Act permit pursuant to 38 M.R.S. §§480-A – 480-JJ and filing a Notice of Intent to Comply with the Maine State Transportation Site Law General Permit for the MTA pursuant to the Site Location of Development Act, 38 M.R.S. §§ 481-90. The Department accepted the MTA Application as complete on November 9, 2016. On December 2, 2016, the Department determined that a public hearing would be held on the MTA Application. Both the Town of York and Think Again submitted petitions to intervene that were granted by the Department without objection by the MTA.

The two intervenors argued that AET presented a practicable alternative to ORT and were consolidated into one Intervenor. After the Department granted Intervenor's request for a hearing, the MTA spent many more staff weeks and tens of thousands of dollars more in direct consultant costs for CDM Smith, HNTB, and Jacobs to prepare the hearing materials. These materials include twenty pages of direct pre-filed testimony and twenty-six supporting Exhibits, all of which is the kind of evidence upon which reasonable persons are accustomed to rely in the conduct of the serious affair of tolling as required by the Maine Administrative Procedure Act, 5 M.R.S.A. § 9057 (2) ("reliable evidence"). Further, the materials include twenty-five pages of pre-filed rebuttal testimony, and four more Exhibits, all of which is reliable evidence. In all, the MTA has submitted an estimated six hundred pages of material to support its decision on how and where to properly collect tolls at highway speeds on the Turnpike.

In pre-filed testimony and at the public hearing, Intervenor focused its argument to one point: AET is practicable in comparison with ORT given a start date of 2019 for the York plaza because if a line is drawn at 2019, the CDM Smith model could show a lesser amount of necessary toll increases and traffic diversion associated with AET in the future. *See* Jarvis Pre-Filed Testimony at 6-12; Smith Pre-Filed Testimony at 1-9; Jarvis Pre-Filed Rebuttal Testimony at 1-12.[1] Intervenor's argument is beside the point. The record is uncontradicted (including by each and every Intervenor witness) that whatever the start date of the model, implementation of AET will require a toll increase and a toll increase will result in diversion of traffic. These aspects of AET make it impracticable in comparison to ORT which does not require a toll increase and will result in traffic diverting from adjacent roads onto the Turnpike.

[1] With respect, the testimony of Jarvis and Smith as well as that of Milone & MacBroom Inc. represents their observations only, and, as they testified at the public hearing, is not evidence on which the MTA could rely in making decisions impacting revenue secured bonds. With specific regard to Milone & MacBroom, Mr. Sullivan testified that he is not and has never been qualified to execute an investment grade tollway study though approximately 20 years ago he did work for someone who is so qualified.

ARGUMENT

As was extensively discussed throughout the pre-hearing process in this matter, this is a licensing proceeding to determine whether AET is a practicable alternative to ORT. As framed by Intervenor, this question treads closely on the line of being a policy debate about how the MTA should collect tolls. One thing is clear. This decision was carefully considered over ten years and is supported by iterations and reiterations of analysis from the top three industry experts in the nation. Ultimately, this is not the proper forum for a policy debate. Rather, it is a permitting proceeding designed to determine whether the Application meets the applicable approval criteria. The record is clear that in choosing ORT, the MTA chose the least damaging practicable alternative. Tweaking the model, by moving the starting line to 2019 or by updating the model as requested by Intervenor will not change the conclusion that AET is not a practicable[2] alternative to ORT.

1. Moving the Starting Line for the 2014 CDM Smith Model to 2019 does not Eliminate Toll Increases or Traffic Diversion that are Associated with AET but not Associated with ORT.

For the reasons discussed in Executive Director Mills' May 12, 2017 letter regarding "Running the old model for future predictions," the MTA could not simply move the starting line for the 2014 CDM Smith model forward to 2019 as part of any reasoned decision making process. As discussed by Mr. Quinlin at the public hearing, from a technical modeling standpoint, this approach would be "indefensible" because it would ignore the front end implementation phase that would be present in any modeling effort and would thus grossly understate the 2019 toll increase and traffic diversion numbers associated with AET.

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[2] Chapter 310 of the Department Rules defines practicable as "[a]vailable and feasible considering cost, existing technology and logistics based on the overall purpose of the project." *Wetland and Waterbody Protection*, 06-096 CMR 310 at § 3(R).

The model was built to establish how the toll increases and traffic diversion associated with AET offset against the additional capital costs of ORT. The model counted against ORT the entirety of capital costs associated with ORT in the ten year model period even though in reality these capital costs would be amortized over 30 years. *See* Turnpike Exhibit B at 49. The model also counted only gantry capital costs against AET (i.e. no capital costs for software development or back office operations were included and construction of a significant facility would be necessary). *See* Letter from Mills and Davidson to Tourangeau dated June 5, 2017 at 3-4 (attached hereto as Attachment 1). The model utilized data inputs for interstate collections of tolls and number of cash customers that were highly favorable to AET. *Id.* at 2-3. The model shows that across ten years AET would require a significant toll increase that would divert traffic while ORT would require no toll increase and would increase traffic and revenue in year one such that the additional capital costs associated with ORT could be amortized over the same ten year period without a significant loss associated with ORT. Turnpike Exhibit B at ES-3.

A. Moving the starting line on the model to 2019 does not eliminate toll increases associated with AET while no toll increases are required for ORT.

Assuming one could properly move the starting line of the model forward to 2019 and ignore the most accurate years predicted by the model, there is still no point at which the modeled results for AET do not include a significant toll increase as compared to no toll increase for ORT. Table 5 of the CDM Smith Report discussing the model indicates that even with a doubling of the toll at York from $3.00 to $6.00 there would remain a financial deficit associated with the implementation of AET when compared to ORT. Turnpike Exhibit B at 21. Two basic premises of the model are that there will be a toll increase and that toll increase will cause traffic to leave the Turnpike. Even without any toll increase, AET would cause diversion of traffic away from the Turnpike. As CDM Smith explains: "If AET is implemented, total toll transactions are expected to decrease compared to the existing condition [... the

current plaza is existing condition...]. At $0.00 surcharge, a reduction of 1,756,000 transactions is anticipated, an approximately 12.6 percent reduction compared to the existing condition." Turnpike Exhibit B at 16.

This reduction in traffic requires an increase in tolls to avoid a loss of revenue due to implementation of AET. However, there is only so much flexibility to toll increases before toll increases begin to divert more traffic than the increased toll can cover. Turnpike Exhibit B at 18 ("The estimated leakage of toll transactions increases as the unregistered video surcharge (toll increase) increases from $0.00 to $4.00 [...]. The increase is primarily due to increasing levels of diversion associated with the increased video toll rate.")

The point of the model was not to specify how much the MTA would increase tolls upon implementation of AET at a specific point in time. As discussed at the hearing by Executive Director Mills and Mr. Quinlin, that exercise would need to be completed in close proximity to implementation of AET via a new investment grade analysis. The point of the 2014 CDM Smith model was to determine whether AET and ORT were roughly similar or grossly dissimilar in terms of toll increases and diversion associated with AET versus the additional capital, maintenance and operational costs associated with ORT. *See* Turnpike Exhibit B at ES-1-2.

The preface of the CDM Smith Report explains:

> Experience on other facilities that have converted to ORT has confirmed that there is very little impact on net revenue collection. Under AET, however, all non-E-ZPass transactions must be invoiced. The need to invoice video transactions is where both the increased risk of revenue leakage and the higher costs of toll collection occur.
>
> [...]
>
> When the capital cost impacts are taken into consideration along with the 10-year net present value of the estimated AET toll revenue impacts, a net positive $18.7 million is generated. However, it must be remembered that this is assuming a $3.00 unregistered video surcharge and the accompanying toll diversion to US Route 1. Under ORT, the resulting combination of capital cost impacts and 10-year net present toll revenue impact is negative $5.3 million.

Turnpike Exhibit B at ES-1-2. The 2014 CDM Smith model makes clear that throughout the ten years modeled there is no point in time at which AET would not require a significant toll increase[3] or at which significant traffic would not divert from the Turnpike as a result. The model includes no point in time at which a toll increase would be required for implementation of ORT. Further, even when CDM Smith included the entirety of the capital, operational and management costs associated with ORT over thirty years within the ten year modeled period and no toll increases, ORT increased traffic to the Turnpike and remained at financial parity with AET when AET included a doubling of the toll. Turnpike Exhibit B at ES-1-2. While Intervenor has posited this twenty four million delta in costs between ORT and AET as clear grounds supporting AET- this couldn't be further from the case. In reality, implementation of ORT would allow the Turnpike to maintain current tolling levels and increase revenue at such a rate that it could cover the increased capital and operational and maintenance costs associated with ORT over ten years instead of thirty and still come out even with implementing AET at a doubled toll rate. The fact is that while twenty four million dollars is a significant amount of money, it is only a rounding error as compared to ten years of MTA toll revenue. In short, the model indicates that AET and ORT come closest to financial parity only when there is a significant toll increase associated with AET.

It is thus a given that implementation of AET at York will require a significant toll increase. Intervenor has not argued this point- they can't. The MTA has implemented a policy following an extremely hard fought toll increase at York in 2012 that there will not be further toll increases until 2031. *See* Davidson Pre-Filed Rebuttal at 3-10. ORT is consistent with this MTA policy and allows the MTA to achieve numerous other financial and logistic policy objectives as discussed at length in the record. AET does not.

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[3] Toll increases negatively impact MTA bond ratings. MTA bonds are secured only by revenue stream. An important measure of the health of a revenue stream is the ability to raise tolls in the event additional revenue is required. This, as discussed at the hearing by MTA CFO Davidson, is referred to as "toll elasticity." Presently, the MTA has the benefit of a high level of toll elasticity. Implementation of AET would consume the entirety, or close to the entirety of the MTA's toll elasticity. It is unlikely that the MTA Bond Trustee, rating agencies or bond holders would find this change acceptable. *See* Pre-filed Testimony of Douglass Davidson, CFO at 4.

B. Moving the starting line on the model to 2019 does not eliminate diversion of traffic from the Turnpike upon implementation of AET while traffic will return to the Turnpike with implementation of ORT.

Toll increases cause diversion. As Mr. Lavallee documented in detail in his Pre-Filed Rebuttal Testimony, even a much smaller toll increase of $1.00 resulted in significant diversion of traffic from the toll highway in New Hampshire. *See* Lavallee Pre-Filed Rebuttal Testimony at 7-23(4). This is also a predicate of the model- the question answered in the model is not whether there will be diversion associated with AET (there will) but how much. Intervenor's own experts concede that AET will cause diversion and agreed at the public hearing that the reports prepared by MTA experts were "good" and conservatively estimated the impacts of diversion. *See* Pre-Filed Direct Testimony of John Adams and David Sullivan at 1-2 ("the methodologies utilized in the HNTB studies for the average summer day and peak hour of the average day seem to be reasonable and consistent with industry practice"). There is no dispute on the record that implementation of AET will cause diversion of traffic from the Turnpike to other routes. There is also no dispute on the record that, as Executive Director Mills testified at the public hearing, the MTA has observed diversion of traffic from adjacent roads to the Turnpike at locations where it has already implemented ORT. The CDM Smith Report estimates that ORT will increase revenue – without toll increases – by about $1 million in year one. Turnpike Exhibit B at 22 ("Because the $0.00 surcharge had a substantial positive impact on net toll revenue [...for ORT...], the forecasts for the greater than $0.00 surcharges [...for ORT...] were not included in this report." "If ORT is implemented, total toll transactions are estimated to increase by 19,000 compared to the existing condition."). What this means is that across its entirety, whether in 2015 or 2019, the model indicates that with ORT traffic will divert to the Turnpike from side roads. As Executive Director Mills testified at the public hearing, the Legislature created the Turnpike in 1941 with the express purpose of reducing congestion on adjacent roadways and consolidating it on the Turnpike. ORT achieves this directive. AET does not.

2. Updating the 2014 CDM Smith Model to 2019 will not Eliminate Toll Increases Or Traffic Diversion Associated with AET that will not be Experienced with ORT.

The Department asks and the MTA has carefully considered several questions regarding the Intervenor request to update the 2014 CDM Smith model with a start date of 2019. Upon conclusion of the public hearing, Executive Director Mills directed MTA Staff to turn to the data collection required to update the CDM Smith model to expedite this process as much as possible in the event the Department ordered an update of the model and to evaluate whether any update would prove useful.

As of the date of this brief, much of that work concerning changes to the significant variables has been done and the results are summarized in narrative form in Attachment 1. In sum, the data generated since 2013 runs counter to the feasibility of AET. We have not attempted to estimate the internal costs of this work. From this point forward, to complete data extraction, build the model, and perform the related diversion analysis will require three to four months and will cost approximately $125,000.

As discussed further in the June 5, 2017 Statement from Mr. Gary Quinlin, Mr. Roland Lavallee and Mr. Richard Gobeille that is Attachment 2 to this Brief, building a new model to start in 2019 or 2020 will not eliminate the need for increased tolls and traffic diversion associated with AET. These three tollway experts from CDM Smith, HNTB and Jacobs Engineering, respectively, have experience with AET and ORT that is without parallel or question. Their credentials are each paired with their pre-filed testimony already presented in the record. They all agree on the following principle findings:

1. The unique traffic profile and tolling environment of the Maine Turnpike renders it comparatively unsuitable for adopting All Electronic Tolling as a substitute for cash collections.

2. Abandoning cash collection in favor of AET will, with reasonable probability, cause the Turnpike to lose more than 40% of its cash revenue from York.

3. Recovering this loss of cash revenue at York alone would require imposing on cash customers an additional toll equal to a multiple of the $1 toll increase imposed by the Turnpike on November 1, 2012.

4. Traffic diversion resulting from a toll increase would significantly disrupt regional road systems and undermine a basic function of any limited access highway: to relieve traffic burdens from local roads.

To build a new model to project the differences in cost and impact between AET and ORT for a period beginning in either 2019 or 2020 would not materially improve the consideration of AET as a practicable alternative for deployment at the York Toll. Increased tolls and resulting traffic diversion would not be eliminated.

Attachment 2 at 1. Three of the top experts in the country agree that AET has negative financial and logistical consequences in comparison to ORT, no matter the date of implementation of AET at York. Given this result, the MTA respectfully posits that the Department's question whether updating the model has "meaningful results" has been answered. No. AET is not practicable in comparison to ORT.

3. The Costs of Additional Delay Far Outweigh any Benefit.

As noted above, updating the model will take several months and will have a significant price tag in terms of hard costs. But there are many more costly impacts to the MTA.

First, the current already-rescheduled advertised date for bids for the proposed ORT project is August 1, 2017. This date was set to allow the use of the critical shoulder seasons to perform work out of peak tourism season. The York toll plaza is a very high traffic area, and maintaining traffic flow requires careful planning and execution. Further delay associated with updating a model would result in the loss of a construction season, and would delay the project for another year. Of course, delay also means higher capital construction costs. This is a $40 million project, consequently a relatively small percentage increase will result in significant additional costs.

Second, every year that the MTA must continue to utilize the current, outdated barrier plaza at York bears significant operational costs and revenue impacts. Repair and maintenance at the current plaza means more consultant cost and diverted staff time. For example, extending the timeline by directing the MTA to update the CDM Smith model will mean that MTA information technology staff

will be redirected to work this issue again, which means that they will not be available to work on other important projects.

Finally, and more broadly, further delay also means that the public will be denied the safety, convenience, air quality and other benefits of highway speed tolling that the proposed ORT project provides. Despite the passionate opinions of those focused on preventing any relocation of the York plaza, the reality is that the proposed plaza will provide huge public benefits. The fundamental point is that the cost of delay is much more than a few months and $125,000.

CONCLUSION

In closing, it is important to keep an eye on the bigger picture as one responds to the Intervenor request. Virtually everyone agrees that the current plaza desperately needs replacing and that Turnpike customers and the State deserve highway speed tolling at the gateway to Maine. If the Department requires the MTA to update the CDM Smith model, a requirement that we are confident will result only in further evidence supporting the already clear conclusion that AET is not a practicable alternative to ORT, the MTA will lose a construction season. Further, if, at the end of the day, the Department determines that AET is a practicable alternative, the result will not be MTA implementation of AET at York. The MTA will not implement AET at this time. Instead, the MTA will continue to make repairs to the existing, substandard, barrier plaza at the gateway to Maine.

We respectfully submit that the record is clear. AET is not a practicable alternative to ORT. Additional modelling to further prove an established point is unnecessary.

Dated: June 5, 2017

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Attorney for Maine Turnpike Authority

Attachment 1

Maine Turnpike Authority

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Daniel E. Wathen, Augusta, Chairman
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Karen S. Doyle, Chief Financial Officer MaineDOT, Ex-Officio

Peter Mills, Executive Director
Douglas Davidson, Chief Financial Officer & Treasurer
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June 5, 2017

Attorney Joanna Tourangeau
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Re: Considerations for a new model

Attorney Tourangeau:

This letter answers the questions posed by the DEP on May 24 and describes the effects of new data generated or examined since 2013.

Answers to Questions Relating to Model Data

(1) What types of data inputs are necessary to bring the model up to date?

Attached is a partial list of variables recently provided to us by CDM Smith as samples of inputs to the existing model.

When possible, the value assigned to each variable is derived from data collected from and stored in Maine Turnpike Authority (Turnpike) electronic files. If the function for which a cost is calculated is one that the Turnpike does not presently perform, then data is derived from an analogous function. Otherwise, the variable may be an input based on CDM Smith's experience with other agencies.

For example, the Turnpike does not presently conduct a toll-by-plate customer operation; but it does operate a violations office and an E-ZPass customer service department with parallel costs.

In addition to variables, the model requires the direct input of large quantities of fundamental data. for example, traffic totals in various categories.

(2) Does that data already exist?

The data exists; but the question is how to extract it from electronic files in a form responsive to the model. This takes a great deal of work by Turnpike IT staff who must prepare coded inquiries and then interpret and refine the results to match what the model requires.

(3) How long would it take to re-run the model with the new data?
(4) If new data needs to be collected, how long will it take to collect the data?

Since the hearing on May 22, Turnpike Staff has extracted new data to update and refine some of the variables that appear to be most significant to the building of a model. The results are described below in a narrative explanation.

To fully develop the data for building a new model would require many hours of further work by Turnpike staff who would need to be pulled away from existing duties essential to Turnpike operations.

After discussions with CDM Smith, we estimate that a total of three to four months would be required to extract remaining data from Turnpike files, build a new model, and perform associated diversion studies that are integral to the model.

(5) How much would it cost to complete an updated model that yields meaningful results?

A fee of $125K is estimated for building the model and performing diversion studies. This does not include the value of time allocated to the project by Turnpike Staff.

Variations from the 2014 Model

The model upon which decisions were based in 2014 was created from data collected in 2012 and 2013. Here are brief observations of how some of the significant variables have changed or would need to be reconsidered since the model was created.

Cash Collections

Any new model created on the basis of three more years of data recorded through 2016 would reflect more cash collections at York than the former model predicted:

Calendar year	2015	2016
Cash transactions predicted by the model	4,213,000	3,935,000
Actual cash transactions recorded at York	4,479,997	4,387,488
Diversion from the model	+236,997	+452,488
Percent diversion from the model	+5.6%	+11.5%

While York cash transactions are still diminishing each year, they are attenuating less rapidly than predicted and the rate of attenuation is itself diminishing. Turnpike Exhibit FF charts the data from 2011 through 2016.

E-ZPass penetration rate at York

The model predicted E-ZPass growth that would yield an 80% penetration rate by 2020 and a ceiling of 85.8% in the year 2025. It is unlikely that Maine Turnpike will reach either benchmark.

Calendar year	2015	2016	2017	2018	2019	2020
Predicted by the 2014 model	69.8%	72.2%	74.4%	76.4%	78.2%	79.9%
Actual rate recorded at York	68.9%	71.0%				
Diversion from the model	-.9%	-1.2%				

While E-ZPass penetration is growing each year, it is growing less than the model predicted and the rate of growth is itself dropping away from model projections.

The Ceiling or Plateau for Electronic Toll Collection (ETC)

Under no model does ETC reach 100%. Within Massachusetts, Richard Gobeille predicts that the Boston Extension, a 15-mile segment with intense commuter traffic, will plateau at 90% by 2019 (see page 96 of Turnpike Exhibit CC). For the Boston tunnels, he predicts a peak of 88% by 2022. For the Maine Turnpike, CDM Smith predicted 85.8% by the year 2025, a number that now seems high for reasons stated above.

When electronic collections reach their saturation point, receipts from cash start increasing again along with general increases in traffic. *See* Table 5 of Turnpike Exhibit B (CDM Smith Report).

The point here is that the need for cash collection on the highway does not taper off to zero. It tapers to a point but persists and then begins to grow. The 2014 model predicts there will still be 2.256 million cash transactions at York at the low point in 2025 and that this will rise to 2.377 million by 2030, the last year of the model run. Based on the data above, we now know that these cash transactions will be higher than those predicted by the 2014 model.

Accounting for Capital Costs

A cash facility can last for decades. The current plazas at York and West Gardiner/I-295 have been in continuous use for 45 years. The mainline cash plazas at New Gloucester and West Gardiner were 20 years old when recently converted to ORT. They still have decades left of useful life.

Yet under the CDM Smith "bottom line" analysis on page 49 of its report, 100% of the ORT investment is amortized in only ten years. *See* Turnpike Exhibit B at 49. While a ten year useful life may be appropriate for electronic systems, it is not valid for the civil structures, for the tollbooths, for the cash collection lanes, and for the building and access tunnel for housing computers and equipment. These will continue in productive use for decades after they are paid for.

In the bottom line analysis of the CDM Smith report, AET with a $3 surcharge (toll increase) is predicted to turn a "profit" of either $24 million or $8 million depending on whether the confidence level is 50% or 90%. Both of these "profit" figures associated with AET are statistically insignificant--meaning that they are the equivalent of a rounding error when one considers their

derivation from $600 million in collections over a ten year span. However, if the civil structures for ORT are amortized over 30 years, rather than ten, this AET profit disappears. At the 90% confidence level, ORT becomes distinctly more profitable and far less risky.

The $4.8 million in capital cost assumed for AET does not include the substantial cost of developing the software necessary to run an AET system nor the cost of a building to house the 150 customer service representatives, image reviewers, and account collectors needed to support AET.

Advantages of Cash

Every morning, a Loomis armored truck picks up cash from the Turnpike's 19 toll sites. Within hours the cash is counted, deposited and credited to the Turnpike's bank account for immediate use or investment.

AET would interpose a delay of one to four months for the collection of most tolls, fees and surcharges. For York, this would be tantamount to tying up without interest between one and two million dollars of working capital in perpetuity.

Ninety five percent of motorists with E-ZPass pay by credit card. Last year, the Turnpike paid over $2 million in credit card fees at rates ranging between 2% and 4% depending on the agency from which remittances were received. Toll attendants at York collect between $1500 and $6000 per shift. On a busy shift, the amount saved on credit card fees alone can exceed half the collector's salary.

In 2014, it was predicted that the cost of the volume discount for Maine E-ZPass customers would peak out at about $5 million. This year, it will come close to $11 million. As an additional incentive, Maine E-Z customers are charged by the mile at a rate that is often far less than the rate charged to customers who pay cash. From York to Wells for example, the car toll is only 90 cents rather than $3. While these incentives are certainly worthwhile in persuading motorists to switch to electronic tolling, the costs need to be accounted for when comparing cash collections with alternative systems.

Back Office Costs

The array of costs for operating an AET system are concentrated in an enormous back office operation. If AET were to be adopted, these costs would scale up from costs that the Turnpike already incurs from operating a violations office and an E-ZPass customer service department.

In the past two weeks, our staff has reviewed these costs against those that were fed into the model in 2013. It appears that labor costs for mail processing, plate lookups, image processing, collections, and customer service would be higher than those upon which the 2014 CDM Smith model was based. Conversely, the rates for image capture and usability, successful lookups, and violation collections are worse than those entered into the 2014 CDM Smith model..

Conclusion

The purpose of a model is to provide a reasonable guidepost for policy makers and investors; and it does that well when the user is willing and able to accept the unavoidable uncertainties of multi-variable statistical analysis.

When the Maine Turnpike decided to retain cash collection on the highway in 2014, it did so with the benefit of independent studies from two of the nation's leading experts, an HNTB analysis from 2009 and a freshly produced quantitative model from CDM Smith. The authors of both reports have testified in these proceedings and submitted to cross examination. Each author and the other national experts with whom the Turnpike consulted on the AET option unanimously agree that updates to the model will not change their conclusion that AET will require increased tolls, unacceptable traffic diversion, financial uncertainties, and other adverse consequences that are all avoided by ORT.

Since making its decision to adopt Open Road Tolling, the Turnpike has issued $212,145,000 in par value of special obligation and refunded bonds secured by a toll model that depends on collecting cash. The Turnpike has also outfitted with new electronics more than half of its cash lanes including most of its 13 side tolls. It has converted two of the mainline barrier plazas to ORT and has two others under construction in Falmouth and South Portland. York, the fifth and largest of six barrier tolls, is designed and ready for bidding. Every year that goes by without building an ORT plaza at York costs the Turnpike one million dollars in lost revenue and costly inefficiencies inherent to its legacy system.

Since 2014, the Turnpike has been committed to collecting cash at highway sites while providing high speed tolling on the mainline for those who pay electronically. That's our business model. It is essential to the "logistics" of our business operation, to borrow a phrase from the Army Corps' Guidelines on defining "practicable."

The Turnpike is certainly capable of commissioning still another model to project the differences in cost between AET and ORT; but doing so would not make AET a practicable alternative.

Yours truly,

Peter Mills
Executive Director

and

Douglas Davidson
Chief Financial Officer and Treasurer

Enclosure: A list of inputs to the CDM Smith AET model for York

Maine Turnpike AET - York Plaza

Transactions

Model Year
2015

		Autos	Trucks	
% Technology Diversion	11	3.00%	3.00%	
% In-state Cash	12	37.00%	37.74%	
% IN-State Shift to E-ZPass from Cash	13	15.00%	15.00%	
% IN-State Toll Increase (Surcharge)	14	$3.00	$12.00	
IN-State Elasticity Factor	15	0.66	0.66	
% OUT-of-State Shift to E-ZPass From Cash	16	7.50%	7.50%	
% OUT-of-State Toll Increase (Surcharge)	17	$3.00	$12.00	
OUT-of-State Elasticity Factor	18	0.66	0.66	
Home E-ZPass Toll Increase	19	$0.00	$0.00	
E-ZPass Elasticity	20	1	1	
Mass/NH E-ZPass Toll Increase	21	$0.00	$0.00	
Other OUT-of-State E-ZPass Toll Increase	22	$0.00	$0.00	
Commuter E-ZPass Toll Increase	23	$0.00	$0.00	
% V Tolls	24	1.76%	1.76%	Applies to E-ZPass after shift from cash and any E-ZPass toll diversion
% HOME E-ZPass (Calculated)	25	36.21%	25.24%	
% Mass/NH E-ZPass	26	35.00%	24.49%	
% Other OUT-of-STATE E-ZPass (Calc.)	27	28.79%	50.27%	
% Home ID'd in intial process	28	70.00%	70.00%	
% HOME ID'd in second manual process	29	95.00%	95.00%	
% OUT-of-State ID'd	30	85.00%	85.00%	
% OUT-of-State Mass/NH	31	56.50%	57.60%	
RVA Surcharge	32	$1.50	$6.00	
RVA Toll Elasticity	33	0.87	0.87	
% Registered Video (RVA)	34	5.00%	5.00%	
% Canadian Cash	35	4.80%	4.30%	
Canadian Info Available?		0.00	0.00	Note a "1.00" means they are treated as out of state UVA while a "0.00" means the 100 percent of UVA is lost revenue.
Revenue	36			
E-ZPass	37			
% Invalid E-ZPass	38	0.50%	0.50%	
% Pay HOME 1st Notice (30 Days)	39	60.00%	60.00%	
Administrative Fee for 1st Notice	40	$0.00	$0.00	
% Pay NOV HOME Inv. E-ZPass	41	60.00%	60.00%	
NOV Fee within 30 days (mailing cost)	42	$0.00	$0.00	
% Pay NOL HOME within 18 Months	43	40.00%	40.00%	
NOL Fee within 18 Months	44	$70.00	$70.00	
% IN-State Resolved (guideline, not used)	45	87.03%	87.03%	
% Fees Waived	46	70.00%	70.00%	
% Pay Mass/NH 1st Notice (30 Days)	47	60.00%	60.00%	
Administrative Fee for 1st Notice	48	$0.00	$0.00	
% Pay NOV Mass/NH Inv. E-ZPass	49	60.00%	60.00%	
NOV Fee within 30 days	50	$0.00	$0.00	
% Pay NOL Mass/NH within 18 Months	51	40.00%	40.00%	
NOL Fee within 18 Months	52	$70.00	$70.00	
% OUT-of-State Resolved (guideline, not used)	53	64.0%	64.0%	
Not Used	54			
% Pay Other OUT 1st Notice (30 Days)	55	60.00%	60.00%	
Administrative Fee for 1st Notice	56	$0.00	$0.00	
% Pay NOV Other OUT Inv. E-ZPass	57	60.00%	60.00%	
NOV Fee within 30 days	58	$0.00	$0.00	
% Pay NOL Other OUT within 18 Months	59	40.00%	40.00%	
NOL Fee within 18 Months	60	$70.00	$70.00	
% OUT-of-State Resolved (guideline, not used)	61	64.00%	64.00%	
Not Used	62			
% Pay COMMUTER 1st Notice (30 Days)	63	60.00%	60.00%	
Administrative Fee for 1st Notice	64	$0.00	$0.00	
% Pay NOV COMMUTER Inv. E-ZPass	65	60.00%	60.00%	
NOV Fee within 30 days	66	$0.00	$0.00	
% Pay NOL COMMUTER within 18 Months	67	40.00%	40.00%	
RVA NOL Fee	68	$70.00	$70.00	
% COMMUTER Resolved (guideline, not used)	69	87.03%	87.03%	
Not Used	70			

ENCLOSURE TO MTA LETTER OF 6.5.17

Registered Video Accounts	71			
% Paid Automatically	72	95.00%	95.00%	
% Pay 1st reminder	73	80.00%	80.00%	
% NOV (30 Days) Paid	74	75.00%	75.00%	
Administrative Fee for 1st Notice and NOV	75	$0.00	$0.00	
% Pay NOL (18 Months)	76	50.00%	50.00%	
Unregistered Video Acct. In-State	77			
(not used)	78			
% Return Mail	79	17.2%	17.2%	
% Paid w/1st Invoice	80	55.00%	55.00%	
Administrative Cost of Mailing 1st Invoice	81	$0.00	$0.00	
% Paid w/2nd Invoice	82	55.00%	55.00%	
Administrative Cost of Mailing 2nd Invoice	83	$0.00	$0.00	
% NOV Paid (18 Months)	84	35.00%	35.00%	
NOV Fee within 18 Months	85	$70.00	$70.00	
Not Used	86			
Not Used	87			
Unregistered Video Acct. Mass/NH	88			
Not Used	89			
Not Used	90			
Not Used	91			
% Return Mail	92	5.10%	5.10%	Originally 2.6%. Additional 2.5% added to reflect unavailable data from 3rd party
% Paid w/1st Invoice	93	50.00%	50.00%	
% Paid w/NOV (30 Days)	94	40.00%	40.00%	
% NOL Paid in 18 Months	95	20.00%	20.00%	
% Paid from NOL (18 Months) (not used)	96			
NOL Fee within 18 Months	97	$70.00	$70.00	
Unregistered Video Acct. Other OUT-of-State	98			
Surcharge over Cash Toll Rate (not used)	99			
Av. # Transactions/Invoice (not used)	100			
% Return Mail	101	8.50%	8.50%	Originally 6.0%. Additional 2.5% added to reflect unavailable data from 3rd party
% Paid w/1st Invoice	102	25.00%	25.00%	
% Paid w/NOL (18 Months)	103	20.00%	20.00%	
NOL Fee 18 Month	104	$70.00	$70.00	
% Paid from NOL (18 Month)	105	10.00%	10.00%	
Collection Fee (not used)	106			
	107			

COST INFORMATION

Average Annual Transactions per:	109		
Home E-ZPass Account	110	200	180
Mass/NH E-ZPass Account	111	160	140
Other OUT-of-State E-ZPass Account	112	40	30
Registered Video Accounts	113	20	10
Home UVA Account	114	12	10
Mass/NH UVA Account	115	8	6
Other OUT-of-State UVA Account	116	4	4
Number of E-ZPass COMMUTER Accounts	117	0	0

ENCLOSURE TO MTA LETTER OF 6-5-17

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
IN THE MATTER OF

MAINE TURNPIKE AUTHORITY	)	APPLICATION FOR A NATURAL
	)	RESOURCES PROTECTION ACT PERMIT
DEP #L-27241-TG-A-N	)	and NOTICE OF INTENT FOR SITE
DEP #L-27275-TP-A-N	)	LOCATION OF DEVELOPMENT GENERAL
	)	PERMIT FOR CONSTRUCTION OF A NEW
	)	TOLL PLAZA LOCATED IN YORK, MAINE

STATEMENT CONCERNING THE UTILITY OF A NEW MODEL FOR EVALUATING ALL ELECTRONIC TOLLING AT THE YORK TOLL PLAZA

The purpose of a model is to provide a reasonable guidepost for policy makers and investors; and it does that well when the user is willing and able to accept the unavoidable uncertainties of multi-variable statistical analysis.

When the Maine Turnpike decided to retain cash collection on the highway in 2014, it did so with the benefit of independent studies from two of the nation's leading experts, an HNTB analysis from 2009 and a freshly produced quantitative model from CDM Smith. Though five years apart, both analyses were consistent in predicting significant toll increases and traffic diversion from the Maine Turnpike associated with All Electronic Tolling (AET) and increased traffic to the Turnpike and no toll increases associated with Open Road Tolling (ORT). The authors of both reports have testified in these proceedings and submitted to cross examination.

The following principles emerge from these two studies:

1. The unique traffic profile and tolling environment of the Maine Turnpike renders it comparatively unsuitable for adopting AET as a substitute for cash collections.

2. Abandoning cash collection in favor of AET will, with reasonable probability, cause the Turnpike to lose more than 40% of its cash revenue from York.

3. Recovering this loss of cash revenue at York alone would require imposing on cash customers an additional toll equal to a multiple of the $1 toll increase imposed by the Turnpike on November 1, 2012.

4. Traffic diversion resulting from a toll increase would significantly disrupt regional road systems and undermine a basic function of any limited access highway: to relieve traffic burdens from local roads.

To build a new model to project the differences in cost and impact between AET and ORT for a period beginning in either 2019 or 2020 would not materially improve the consideration of AET as a practicable alternative for deployment at the York Toll. Increased tolls and resulting traffic diversion would not be eliminated.

Dated: June 5, 2017

Gary T. Quinlin
Project Manager
CDM Smith, Inc.

STATE OF CONNECTICUT
NEW HAVEN, ss

June 5, 2017

Personally appeared before me, the above-named Gary T. Quinlin and made oath as to the truth of the foregoing statement.

Before me,

Notary Public/Attorney at Law

Alex R Hubbard
Printed Name

08/31/2020
My Commission Expires

Dated: June 5, 2017

Roland Lavallee
Vice President
HNTB Corporation

STATE OF Maine
Cumberland, ss

June 5, 2017

Personally appeared before me, the above-named Roland Lavallee and made oat as to the truth of the foregoing statement.

Before me,

Notary Public/Attorney at Law

Jonathan Arey, Esq
Secretary – MTA

Printed Name

My Commission Expires

Dated: June 5, 2017

Richard J. Gobeille
Infrastructure Consultancy Director
Jacobs Engineering Inc.

STATE OF New York
NEW YORK, ss

June 5, 2017

Personally appeared before me, the above-named Richard J. Gobeille and made oat as to the truth of the foregoing statement.

Before me,

Laura Jean Andres
Notary Public/Attorney at Law

LAURA JEAN ANDRES
Printed Name

09/19/2017
My Commission Expires

LAURA JEAN ANDRES
Notary Public, State of New York
No. 01AN6133775
Qualified in Nassau County
My Commission Expires 09/19/2017