

Maine Turnpike Authority

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September 1, 2015

Jay L. Clement, Senior Project Manager, Maine Project Office
Department of the Army, New England District, Corps of Engineers
675 Western Avenue #3
Manchester, Maine 04351

Re: Southern Toll Plaza for Maine Turnpike Authority
USACE No: NAE-2007-01211

Dear Mr. Clement:

In March 2010, the Maine Turnpike Authority (MTA) submitted its Draft Phase One Report for a Southern Toll Plaza in York. On May 5, 2010, the U.S. Army Corps of Engineers (ACOE) replied with a request for additional information. Many of the ACOE questions focused on All Electronic Tolling (AET), a system that would eliminate the collection of cash tolls and substitute a back office effort to collect by mail after identifying motorists through photos of registration plates.

The purpose of this letter is to report on what has transpired since the 2010 filing, answer the questions posed by ACOE in 2010, provide recent information on AET, and request ACOE concurrence that AET is not a practicable alternative under the 404(b)(1) Guidelines. This ACOE determination will set the stage for submitting an updated alternatives analysis to include a reduced design footprint with relatively low environmental impacts that are field verified.

With assistance from its consultant, HNTB Corporation, MTA had prepared a full response to the ACOE request and was nearly ready to file it in February of 2011. At that juncture, however, the Turnpike's Executive Director left office under a cloud of allegations relating to theft and mismanagement. On March 17, 2011, the present director was hired along with former DOT Commissioner Roger Mallar who served for a time as a senior consultant to the MTA.



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In the spring of 2011, the Turnpike was faced with having to replace all of the electronic sensory equipment and data compilers in the 19 locations where tolls are collected. While York is by far the oldest and most decrepit of the toll plazas needing replacement, we resolved to keep it in service long enough to obtain a second opinion on the critical issues raised by the ACOE letter. MTA's management and its seven-member Board of Directors agreed to subject the AET issue to a period of patient study and evaluation under guidance from a consultant who could provide an alternative perspective.

MTA's new management viewed AET as a broader and more prominent issue than the question of whether it is suitable for the York Plaza alone. If it were feasible to abandon cash collections at York and substitute a back office mailing program, then why would it not be feasible to adopt AET for the entire road?

AET Analysis

To answer this broader question as well as to address the most significant portions of the ACOE information request, the Turnpike conducted a competitive search in the summer of 2011 for a highly credentialed toll consultant to review the entire AET question. As a product of this search, the Turnpike retained CDM Smith to perform a new study under different guidelines from those that applied to the work completed in 2011 by HNTB.

For the sake of the study, CDM Smith was asked to assume that AET would be implemented and to prepare mathematical models tailor-made for the MTA to show exactly what consequences would flow from adopting AET under a range of different protocols. CDM Smith was asked to perform this study not only for the Southern Toll at York but also for the toll at West Gardiner/I-295 which is more representative of plazas on other portions of the Maine Turnpike.

Survey of Cash Traffic

As the AET work progressed, MTA conducted a plate survey of cash lane traffic to provide CDM Smith with an enriched body of data from which to build a model for evaluating AET. The plate study sampled the registrations of 407,000 vehicles that paid cash at various locations on the Turnpike between August of 2012 and July of 2013. The results are incorporated in CDM Smith's analytical work. It was found that during the high volume summer months fewer than one-third of the vehicles paying cash at York were from Maine, a fact of significance when considering how to identify these motorists by their plates and attempt collections by mail.

Promotion of E-ZPass

AET is most feasible where the traffic is local and where the rate of electronic toll participation has been pushed as close to 100% as possible. Collecting tolls electronically also cuts costs, mitigates

traffic congestion, and reduces the physical size of toll plazas. Thus, for many reasons, increasing E-ZPass participation is important to the future of the Turnpike.

In 2011 and 2012, the MTA obtained significant cooperation from the Legislature to amend state laws that stood as impediments to electronic tolling. The MTA has since been able to:

1. pilot reciprocal toll enforcement with Massachusetts and New Hampshire,
2. lower the transponder price from \$25 to \$10,
3. begin selling most of its transponders over the Internet,
4. create a family discount for E-ZPass subscribers,
5. raise tolls primarily on non-E-ZPass customers,
6. conduct E-ZPass ad and promotion campaigns,
7. install new and more effective electronic lane equipment to replace outmoded systems, and
8. reap the collateral benefit of E-ZPass promotions in New Hampshire and Massachusetts.

Despite these efforts, the Turnpike has been able to raise its percentage of E-ZPass transactions to only 70%, as estimated for 2015, a gain of 9% since 2011. Recent gains have begun to attenuate as we reach diminishing returns and find that increasing numbers of people are buying transponders only for occasional or intermittent use.

Cash Transactions are Necessary at the York Toll Plaza

Since traffic has begun to rebound coming out of the recession, the MTA has found that the number of cash transactions is leveling off at about 23 million per year even as electronic participation keeps growing. While York has only 20% of the Turnpike's cash transactions, it accounts for about half of total cash revenue because the toll at York is up to three times higher than what is charged at other locations.

Vehicles paying cash originate in nearly all states and provinces of North America. Under an AET system for the whole road, if MTA were to mail even one letter for each transaction, it would cost over 11 million dollars just for stamps -- without beginning to account for back office staff, "look up" fees or data refusals from other jurisdictions, repeat mailings, and lost revenue from leakage, unreadable plates, traffic diversion, and collection failure.

Because cash customers pay at a higher rate per toll, these 23 million transactions represented 33% of total revenue in 2014, or about 40 million dollars. At York alone, 63% of the cash transactions are from out-of-state travelers, many of whom cannot be identified or reached by mail.

A cash toll attendant at York collects between 7 and 20 times his or her hourly cost, depending on traffic. On an operating basis, no other system can collect cash at this location so effectively. Any attempt to substitute a back office mailing system would require doubling the toll for former cash customers. This would divert thousands of cars per day onto Route 1 and other roads not equipped to handle an influx of traffic.

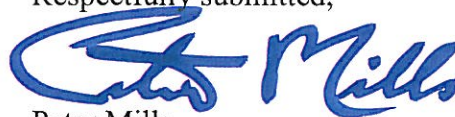
MTA has determined that to abandon cash tolls at the York Plaza in favor of an AET system is not practicable and would not meet the project purpose statement of July 24, 2015,

“to replace the existing barrier toll plaza on the Maine Turnpike at York, Maine with highway speed electronic tolling lanes and cash (non-EZPass) lanes to address safety deficiencies, settling/subsidence, facility deficiencies including substandard tolling equipment, existing and projected traffic volumes and traveler impacts and expectations.”

We invite the ACOE’s concurrence in that finding and enclose the following studies and information to support it:

1. A current report dated July 27, 2015, prepared by CDM Smith to answer ACOE’s questions on AET using the most recent information available from MTA’s tolling experience.
2. Excerpts from minutes of public meetings of June 19, 2014, and July 24, 2014, in which the MTA Board determined by unanimous vote that AET is not feasible to support Turnpike operations at the York Toll Plaza.
3. A report of April 30, 2014, from Turnpike staff providing background on the Turnpike’s tolling systems and presenting evidence for consideration by the Board and the public.
4. The CDM Smith report of March 18, 2014, that brought to fruition analytical studies performed during the preceding two years.
5. Under date of February 25, 2011, a supplement to the Phase 1 submission prepared by HNTB and MTA staff. While this report was prepared over four years ago, it addresses every one of the questions posed in the ACOE letter of May 10, 2010, and contains a wealth of analysis pertinent to these proceedings including answers to questions about AET. To the extent that the MTA’s recent AET findings depend on data generated since this report, our current analysis is supported by the studies performed by CDM Smith with input from MTA staff.

Respectfully submitted,



Peter Mills

Executive Director, Maine Turnpike Authority

Enclosures as stated

Maine Turnpike Authority

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September 29, 2016

Jay L. Clement, Senior Project Manager, Maine Project Office
Department of the Army, New England District, Corps of Engineers
675 Western Avenue #3
Manchester, Maine 04351

Re: Southern Toll Plaza for Maine Turnpike Authority
USACE No: NAE-2007-01211

Dear Mr. Clement:

On behalf of the Town of York, Verrill and Dana submitted a letter on June 16 arguing that All Electronic Tolling ("AET") should still be considered a practicable alternative to the Maine Turnpike Authority's ORT plaza, regardless of all evidence to the contrary.

This letter is our response. Among the important components of this letter are its first two enclosures.

- Enclosure 1 is a letter from Gary Quinlan of CDM Smith responding to adverse criticisms leveled by the Town's hired AET consultant. We selected CDM Smith over five years ago because new management at the Turnpike viewed the AET question as an opportunity to review the highway's fundamental business model. If cash collections were to be eliminated at York, or anywhere else on the road, we needed, above all else, a thorough analysis from a knowledgeable source with unimpeachable objectivity. The attached letter from Mr. Quinlan confirms the wisdom of their selection.
- Enclosure 2 is a study from traffic engineer Elizabeth Roberts to determine the impact on local roads if--as the Town proposes--AET were imposed and the toll were doubled for the 4.5 million annual users who pay cash at York. If a high speed, six lane interstate like the Turnpike diverts even a small percentage of its intense traffic onto low capacity streets and roads, it creates widespread (and environmentally damaging) impacts.

We first address some responses to the Town's letter itself.

1. The Legal Standard for Project Purpose

The legal standard for establishing the Basic Project Purpose is set by *Sylvester v. U.S. Army Corps of Engineers*, 882 F.2d 407 (9th Cir. 1989), as noted on page five of the Verrill and Dana letter. The only legal point in relation to AET is that the project purpose cannot be defined so narrowly as to make the alternatives analysis meaningless. All the cases cited support that general, and uncontroversial, position.

Sylvester, which involved a golf course being constructed on 11 acres of wetlands, does not stand for the proposition asserted in the Verrill and Dana letter. In *Sylvester*, the Corps' decision to defer to an applicant's economically driven project purpose was questioned but upheld. The quote that Verrill & Dana relies on is a statement by the court that simply tempers its holding in support of the Corps' decision to defer to the applicant's economic priorities. The quote in context is as follows:

In evaluating whether a given alternative site is practicable, the Corps may legitimately consider such facts as cost to the applicant and logistics. See *Friends of the Earth v. Hintz*, 800 F.2d 822, 833–34 (9th Cir.1986). In addition, the Corps has a duty to consider the applicant's purpose. As the Fifth Circuit observed: “[T]he Corps has a duty to take into account the objectives of the applicant's project. Indeed, it would be bizarre if the Corps were to ignore the purpose for which the applicant seeks a permit and to substitute a purpose it deems more suitable.” *Louisiana Wildlife Fed'n, Inc. v. York*, 761 F.2d 1044, 1048 (5th Cir.1985) (per curiam) (footnote omitted).

Obviously, an applicant cannot define a project in order to preclude the existence of any alternative sites and thus make what is practicable appear impracticable. This court in *Hintz* quite properly suggested that the applicant's purpose must be “legitimate.” *Id.* at 833. Yet, in determining whether an alternate site is practicable, the Corps is not entitled to reject Perini's genuine and legitimate conclusion that the type of golf course it wishes to construct is economically advantageous to its resort development.

By contrast, an alternative site does not have to accommodate components of a project that are merely incidental to the applicant's *basic* purpose. For example, in *Shoreline Assocs. v. Marsh*, 555 F.Supp. 169, 179 (D.Md.1983), *aff'd*, 725 F.2d 677 (4th Cir.1984), the Corps refused to issue a permit to a developer for building a number of waterfront town houses together with a boat storage and launching facility. The developer argued that the Corps' proposed alternative site for the town houses could not accommodate the boat storage and launch area. The court upheld the Corps' denial of the permit, observing that the boat facilities were merely “incidental” to the town house development. *Id.*
882 F.2d at 409.

The *Sylvester* case means that economic concerns are important and that the Corps should not reject the applicant's “genuine and legitimate conclusion that the type of golf course it wishes to construct is economically advantageous.”

From all of this, Verrill and Dana somehow asserts that it would be “unlawful” to remove AET from the alternatives analysis because collecting \$15.5 million in cash at York is merely “incidental to the overall purpose of the project and thus, should be excluded from the Basic Project Purpose.”

Turnpike bondholders would be shocked to hear that retaining and securing the annual collection of \$15.5 million in cash is merely “incidental” to the function of the Turnpike.

The Maine Turnpike Authority has a road to run and \$380 million in outstanding bonds to repay from its toll revenue. Following a ten-year review process including studies by some of the nation's leading experts, the Authority has reached a thoughtful and legitimate conclusion that ORT is the only practicable way to collect tolls at highway speeds, a conclusion that is consistent with good practice and experience elsewhere. Based on successive studies, the Army Corps of Engineers has reasonably and appropriately accepted this conclusion.

2. The Range of Alternatives

To suggest that other theoretical possibilities exist does not make them practicable or worthy to consider.

For example, it is possible for the state to dissolve the Turnpike, raise the gas tax for support and radically alter how Maine's busiest interstate highway is funded. Regardless of whether this is "possible" or "feasible," no one would suggest that this is an alternative that must be presented in a permit application.

An intervener might also suggest that the York toll be abandoned by shifting the toll burden to other portions of the highway. Although technically feasible, this suggestion is patently unfair and unsuitable. No one would regard it as "practicable."

Yet, the Town of York's present effort to tell the Turnpike how to shift costs and run its business is just as impracticable. Consider the converse: Should York selectmen be forced to spend money to prove to an outside citizens' group why the town office should not be closed in order that taxes, dog license fees, and car registrations be collected only on line?

3. Reasons for the Lapse of Time from 2010 to 2014

On page one, the attorney notes the lapse of time from 2010 until 2014 by stating: "For reasons unrelated to the Corps permitting process, the MTA then tabled the tollbooth replacement project for several years."

In fact, the delay was highly related to the permit process. When former DOT Commissioner Roger Mallar and I began managing the Turnpike in March of 2011, we immediately obtained approval from the Turnpike board to take a fresh look at AET, not just for York but for the highway as a whole. Among other initiatives, we:

- issued an RFP to search for the best consultant we could find to conduct a thorough and independent review;
- chose CDM Smith, a firm that has worked on toll issues with most of the agencies in North America and has helped many of them to implement AET at appropriate sites;
- broadened the scope to study not only York but also the toll at West Gardiner/I-295 to enable us to evaluate AET at a site more representative for the rest of the road; and
- did not ask the consultant to tell us what the Turnpike should or should not do but to explain thoroughly how AET could be implemented at either location and what the consequences would be.

As that work progressed, we commissioned an all season survey from August of 2012 through June of 2013 to better understand where cash payers come from at different locations and at different times of year. These findings were integrated into the consultant's work.

To expand the E-ZPass penetration rate, we:

- eliminated from Maine law a toll protocol that had prevented the Turnpike from selling transponders on line;
- dropped the price of transponders from \$25 to \$10;
- restructured tolls to favor E-ZPass;
- created a volume discount for Maine E-ZPass customers; and
- conducted sales campaigns to promote electronic tolling.

These efforts raised electronic receipts from \$62.5 million in 2011 to \$90.7 million in 2015. But over that same period, cash tolls at York still rose from \$13.5 million to \$15.5 million. A reduction in transactions was more than offset by the 2012 toll increase. CDM Smith concluded that to replace the cash revenue at York with collections by mail would require doubling the cash toll, a premise that is accepted by the Town's consultant.

4. The Town's Report by Mr. Darryl Fleming is Fundamentally Flawed

Diversion by motorists away from a doubled toll will cause periodic congestion on secondary roads of such consequence that the AET option can be ruled out for traffic reasons alone—quite aside from financial losses to the Turnpike.

Verrill and Dana suggests on page four that traffic diversion should simply be ignored because “neither CDM Smith nor the MTA has submitted any analysis or authority to support the diversion figures proposed.” [Emphasis in the original.]

The authority for diversion comes directly from CDM Smith, one of the nation's leading traffic analysts. On page six of their 2014 report, they state: “While estimates of traffic diversion under AET were calculated using well tested diversion techniques, the proportions of traffic that would actually be billable and collectable were based on reasonable assumptions based on experience at other AET facilities across the nation.” For such reasons, diversion to Route 1 “is an important factor to be taken into consideration.”

While it seems obvious that more traffic is bad for already congested roads, the Turnpike has recently commissioned a traffic analysis attached as Enclosure 2 to this letter. The purpose of the analysis was to determine just where this diverted traffic would go in response to a doubled toll for former cash payers and what effect it would have. As expected, roads through many municipalities will be significantly impacted, including State Routes 1, 4, 9, 109, and 236 as they pass through Ogunquit, South Berwick, Berwick, North Berwick, Kittery, Eliot, Wells, Sanford, Kennebunk, and York.

If a developer were to propose a shopping center imposing traffic burdens of such magnitude, the impact fees and remote intersection improvements would likely kill the project; and the increased local congestion would diminish air quality wherever it occurs.

The Turnpike's plan to adopt high speed Open Road Tolling (ORT) does the opposite. By improving the convenience of using the Turnpike, by giving motorists the choice of paying electronically at high speed or by paying cash at the current rate, it encourages even more motorists to stay on the interstate where through traffic belongs—for a host of good reasons including environmental impacts as well as equity in the imposition of tolls.

Mr. Fleming is certainly a vigorous advocate for All Electronic Tolling. But enthusiasm clouds his objectivity. Attached as Enclosures 1 and 3 are more detailed responses to his 20 page report.*

5. The Town Proposes an Unfair Cost Shift

On page three, the attorney suggests that a doubling of the toll will “minimize” loss of revenue and should even be regarded as a profit opportunity for the Turnpike.

The doubled toll surcharge doesn't “minimize” anything. It imposes a penalty on every cash motorist who travels north of York who is either willing to pay by mail or unlucky enough to be caught by a registration suspension. The new cash toll would be \$6 for a car and \$24 for a five axle truck. The burden of paying the double toll—or, indeed, the present toll—falls on people north of York and those who travel to do business north of mile 7.

Because so few residents of York are impacted by this unfair shift in costs, it is too easy for Think Again and York officials to say, “Go ahead and double it.”

While it is true that building only an electronic gantry array for AET is less expensive as a capital cost, there is nothing cheap about employing scores of back office clerks and their computer systems necessary to operate a toll-by-mail “boiler room” with associated violation supports.

The Turnpike does not contend that AET is impossible. In fact, the consultant we hired was tasked specifically to tell us how to do it. A fair evaluation of the consequences has led both Maine and New Hampshire independently to conclude that the only practicable way for our states to implement high speed tolling is to continue collecting cash in lanes that are safely off to the side of mainline traffic.

Massachusetts does not have that option. On the Tobin Bridge, for example, there is simply no room to continue collecting cash on their 65-year-old congested bridge. The same is true at a number of their other tolls located within or adjacent to densely developed metropolitan sites. Maine and New Hampshire have no such constraints. To impose them would unfairly shift costs to that portion of the population who might still pay under AET.

6. Need for High Penetration of Electronic Tolling

* As reflected in Enclosures 7 and 8, Mr. Fleming has a checkered career as a toll consultant; our purpose here is not to address his other failures but whether his current criticisms have merit.

The Verrill and Dana letter in footnote 15 argues against the assertion that a high electronic penetration rate is necessary to make AET succeed. They point out that Massachusetts plans to implement AET with current penetration rates of between 73 and 81%.

For reasons cited above, Massachusetts has little choice but to incur the inevitable losses. Because the Massachusetts Turnpike went insolvent and dissolved long ago while attempting to complete the "Big Dig," it is now owned by the state and has no independent bond rating to place at risk. The losses they are already incurring are further discussed in Enclosures 1 and 5.

In New York, the Metropolitan Transportation Authority owns seven bridges and two tunnels that cross the East River. Until recently, all nine were supported by electronic and cash tolls enforced by gates that can be raised only by the cash attendant or by a "fare paid" signal from an E-ZPass transponder.

When the Authority replaced the Henry Hudson Bridge in 2012, they omitted the cash tolls because traffic on the bridge was almost entirely from commuters and the electronic penetration rate was 94%. Even at that rate, they incurred substantial losses from the AET conversion as reported in the attached news account (Enclosure 6).

Such losses from AET are inevitable. Whether to incur them is a question of scale, financial tolerance and physical constraints specific to each site. For reasons that have now been studied thoroughly, an AET solution is not a practicable option for a state like Maine.

Conclusion

As the law requires, this project is being sited and designed to minimize its effect on wetlands. While AET could eliminate the few remaining wetland impacts, it would cause financial disruption to the Turnpike, produce unacceptable toll distortions for travelers, and increase congestion within adjoining communities.

The reasons why AET fails to meet the purpose and need of this project are summarized as follows in Enclosure 4 to this letter:

Maine Turnpike has 19 years of experience in using license plate photos to collect tolls from violators who pass through without paying. There is nothing new or novel about this process. Collecting from former cash customers by "All Electronic Tolling" or AET is not really so much "electronic" as it is an intense manual system for tolling by plate. It requires a large staff of back office clerks to confirm plate numbers, find addresses, prepare invoices, and track payments and penalties.

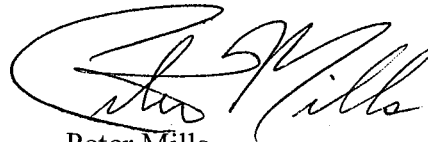
Experience with AET from other states reveals that at least 40% of former cash tolls will be lost for a variety of reasons including: traffic diversion, plates obscured by snow or dirt, unwillingness of states or provinces to supply an address, invalid addresses, customers' failure to respond to small invoices, and lack of enforcement reciprocity with other jurisdictions. When cash is collected, these impediments disappear.

Providing cash lanes on site is the only affordable, effective and reliable way for Maine to collect from its high volume of cash paying travelers, many of whom are from out of state. The capital cost of continuing to collect cash on site is a prudent and necessary investment:

- to preserve a significant portion of Turnpike revenue;
- to maintain the Turnpike's bond rating;
- to avoid doubling the toll and gouging cash paying motorists who travel north of York; and
- to prevent unwanted traffic diversions onto a number of secondary roads.

It is doubtful that any turnpike authority in the United States has spent quite so much time and effort as has the Maine Turnpike in evaluating and finally rejecting AET as a proposed business model for our region. The Town's letter of June 16 creates no legal, technical or practical reason to alter the project purpose or to change the ORT alternatives analysis.

The Corps has correctly concluded that AET is not a practicable alternative.



Peter Mills

Executive Director, Maine Turnpike Authority

Enclosures:

1. CDM Smith's response to the Fleming Report
2. Report on traffic diversion caused by doubling the toll under AET
3. Maine Turnpike's brief response to the Fleming Report
4. Maine Turnpike circular summarizing ORT versus AET issues
5. Article from masslive.com of August 10, 2016, on Massachusetts Turnpike losses
6. Article from USA Today of March 14, 2015, on losses at the Henry Hudson Bridge
7. Notice of Default by eTrans from Kentucky
8. Insider Louisville article on eTrans default

cc: Paul Mercer, Commissioner Maine DEP
 Melanie Loyzim, Deputy Commissioner Maine DEP
 Mark Bergeron, Maine DEP
 Attorney Scott D. Anderson of Verrill & Dana
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July 22, 2016

Mr. Peter Mills
Executive Director
Maine Turnpike Authority
2360 Congress Street
Portland, ME 04102

Subject: **Comments on Final eTrans Report "Shortfalls in MTA's Response to the Army Corp of Engineers (March 30, 2016)"**

Dear Peter:

As requested, CDM Smith has reviewed the final eTrans Report "Shortfalls in MTA's Response to the Army Corp of Engineers (March 30, 2016)". This report summarizes our findings in light of the specific work we did regarding the York Mainline conversion to either AET or ORT and in light of our experience on other similar work throughout the United States.

Introduction

CDM Smith was (and still is in most cases) the traffic engineering consultant to a number of the agencies mentioned in the eTrans report where AET has been implemented, including for the Pennsylvania Turnpike Commission, the Central Florida Expressway Authority, and for Highway 407 in Toronto (the first AET facility in North America). In addition, the Florida Turnpike, the Maryland Transportation Authority, the E-470 Public Highway Authority (Colorado), the Harris County Toll Road Authority (Texas), and many more have deployed AET based on CDM Smith traffic and revenue studies. The same approach and considerations for those studies were taken into account as part of our analysis of AET and ORT impacts at the York Toll Plaza.

The CDM Smith Study for the Maine Turnpike Authority (MTA) was conducted without bias for either AET or ORT, but rather on the mix of variables specific to the York (and Gardiner) toll plaza. These variables are unique for each and every toll facility. The mix of in-state versus out-of-state cash customers, overall cash market share, license plate successful read rate, valid department of motor vehicle address records, toll diversion, and more, are all location specific. They determine the potential levels of revenue leakage under AET and ORT, as well as the level of video or cash surcharges required to make up any toll revenue shortfalls.

In the end, we did not recommend either AET or ORT, but rather only the measures required to ensure net revenue neutrality for both. Based upon the impacts of these measures, previous professional tolling recommendations, and an MTA staff recommendation, the MTA Board of





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Directors selected ORT. Based on our national experience and a number of technical project-specific risk factors including the percentage of MTA income at risk at York, the mix of out-of-state and Canadian traffic, the cash market share, the toll surcharge, and traffic diversion, it is our professional opinion that the MTA decision was prudent and consistent with good tolling practice nationally.

Following are responses to each section of the eTrans report, as they apply to the work conducted by CDM Smith and summarized in our "Maine Turnpike ORT/AET Impact Analysis (March 18, 2014)".

Response to eTrans Report: Cover Page

The cover page of the eTrans report provides a table which contrasts ORT versus AET on several key elements. All ORT characteristics are labeled as "marginal" or "poor", while those for AET are all labeled as "best". It is odd that a "toll cost to customer" category has not been included since this is the aspect of any toll road that most directly affects all users. If "toll cost to customer" were to be considered, ORT would be labeled as "best" since no changes would be required for cash or E-ZPass customers (compared to existing rates). AET would likely merit a "worst" label since a substantial \$3.00 surcharge would be required for video (current cash) customers in order to maintain net toll revenue neutrality.

It is also misleading for the author to show the "Life-cycle Costs/Retained Revenue" to be "best" under AET and "poor" for ORT. The only reason for the net positive result under AET is due to the \$3.00 video surcharge needed to recover lost revenue. Later in the eTrans report (see Section 3.3.d, page 17) the author says the \$3.00 video surcharge is "significantly greater than those likely to occur". Without that level of video surcharge, net toll revenue losses would be significant under AET (based on our analysis).

While the CDM Smith study did not analyze the other components this table ranks, I would take exception to the "poor" ranking under ORT for "Safety" and "Customer Service". Numerous studies (including experience at MTA's converted ORT facilities, as well as those in neighboring New Hampshire) have shown that ORT dramatically reduces accidents compared to traditional mixed use (cash and E-ZPass) toll plazas. Regarding "Customer Service", some of the top focus group responses we have had for those opposing AET is the loss of customer service via the toll attendants. Those motorists indicated that they liked the option to pay cash and ask toll attendants for directions or for help in case of emergencies. These are certainly not reasons to maintain toll collectors, but it does provide ORT with a heightened customer service option not available with AET.



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Response to eTrans Report: Section 1.0 (Executive Summary)

In Section 1.0, the author takes issue with the level of traffic diversion CDM Smith estimated under AET. He makes two arguments. First, the CDM Smith estimates of 3,400 to 5,500 daily trips diverting to alternative routes is far too high. And, second, that these levels of diversion are “assumed to be realized over the long term.”

The 3,400 daily diversion value is CDM Smith’s base case estimate for diversion assuming AET was implemented in 2015. The 5,500 daily diversion level is based on CDM Smith’s financial risk analysis assuming a 90 percent confidence level. Risk analyses are often performed in order to provide the financial community (rating agencies, bond insurers, and investors) with some level of assurance that a toll authority’s financial obligations can be met. A detailed description of CDM Smith’s risk analysis is provided in our Study Report.

The eTrans author seems to imply that there is no alternative road way capacity to absorb this level of diversion. Travel in the southern coastline area of Maine is highly seasonal. As shown in the table below, July and August traffic levels greatly exceed those in other months. Traffic volumes and congestion can be severe during these two peak summer months. Relatively little diversion would occur during these two months (though not necessarily during off peak night time periods). However, for half the year, traffic volumes are about half those during the two peak summer months. During these periods the alternative routes would have ample capacity to absorb significant levels of diversion to avoid a doubling of the video toll at York.

Month	Monthly Variation
January	64.3 %
February	63.9
March	75.1
April	85.1
May	102.2
June	114.2
July	147.9
August	152.3
September	116.8
October	103.7
November	88.9
December	82.3
Average	100.0



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The eTrans author's second comment regarding diversion, that these levels of diversion are "assumed to be realized over the long term," is simply untrue. Table 5 (page 21) of the CDM Smith report provides the information summarized in the table below. As shown, CDM Smith base case diversion levels decrease from 3,449 per day in 2015 to less than half that level by 2025 (at 1,627 per day). These decreases in diversion are largely the result of the assumed continued shift from video transactions to E-ZPass (which has no AET toll surcharge) over time.

<u>Year</u>	<u>Estimated Annual Diversion</u>	<u>Estimated Daily Diversion</u>
2015	1,259,000	3,449
2016	1,164,000	3,189
2017	1,076,000	2,948
2018	994,000	2,723
2019	918,000	2,515
2020	847,000	2,321
2021	782,000	2,142
2022	721,000	1,975
2023	664,000	1,819
2024	611,000	1,674
2025	594,000	1,627

In an attempt to support his statements regarding CDM Smith's high diversion levels, the author then uses experience on the Tobin Bridge (formally known as the Mystic River Bridge), which recently converted to AET.

In an attempt to demonstrate that the diversion rates we estimated at the York Toll Plaza are too high when AET is assumed, the eTrans report cites the fact that traffic volumes on the Tobin Bridge actually increased for the five month period including August through December 2015 compared to the same five month period in 2014. Over this period, traffic increased by 7.4 percent. His conclusion, therefore, is that AET does not result in toll diversion.

This example does not make any sense for three reasons. First, conversion to AET at the Tobin Bridge took place in July 2014. Thus, AET was operational during both of the time periods they analyzed. So, the growth rate they show really only reflects normal background growth or growth



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from other non-AET related sources. For this comparison to be meaningful, they would need to have compared August through December 2013, when there was no AET, versus August through December 2014, when there was AET.

Secondly, the toll diversion rates developed in the CDM Smith report are based on the \$3.00 (passenger car) toll increase that would be incurred by video customers under AET. This would be double the current cash toll rates. Toll rates on the Tobin Bridge were \$3.00 for cash and \$2.50 for E-ZPass (car rates) prior to conversion to AET. Upon conversion to AET, the rates remained unchanged at \$3.00 for video (also referred to as toll-by-plate) and \$2.50 for E-ZPass. So, even if the author had chosen the correct time periods to compare, we would not have expected any toll diversion to occur at the Tobin Bridge because there was no additional video toll surcharge.

Thirdly, even if the author had selected the correct time periods to compare and a similar toll increase had occurred at the Tobin Bridge, it is impossible to know, without careful analysis, what level of toll diversion would be expected at this highly urban location. Simply using this as an example because it converted to AET is not sufficient to say that diversion rates should also be similar those in the York corridor.

What is most important regarding the AET conversion at the Tobin Bridge is the actual impact it has had on toll revenue collection. The eTrans report does not mention the fact that video payment violations rates have been very high at this location. An April 1, 2015 article in the New Salem News (http://www.salemnews.com/news/local_news/motorists-racking-up-hefty-fines-for-unpaid-cashless-tolls/article_23bb9of3-ed93-5940-ae1b-7ff8aeaed1.html) wrote the following:

“Figures from the state Department of Transportation reveal that from mid-July to Dec. 31 the state collected less than half of the \$2.7 million in pay-by-plate tolls billed to motorists crossing the Tobin during that time.

[M]otorists who didn't pay up after getting bills in the mail have been hit with more than \$3.2 million in late fees and other charges, with MassDOT collecting only \$600,000 of that by the end of the year.”

As a result of such high violation rates, MassDOT felt it necessary to forgive tolls through an amnesty program. Specifically, MassDOT issued the following notice on this subject: (<https://www.paybyplatema.com/pbp/Desktop/Default.aspx>):



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“Important Notice: Effective June 1st, 2015 all current delinquent customers will be offered an amnesty settlement. All Pay By Plate fees will be waived and all Registry of Motor Vehicles (RMV) holds will be removed. Only outstanding tolls will need to be paid in full. This amnesty program is for Tobin Bridge outstanding fees only.”

Violation fees are meant to both deter motorists from not paying the toll and to help make up for lost toll revenue from those who do violate and never pay. So, while this amnesty program may help in collecting some lost toll revenue, the loss of fee revenue will result in continued net revenue losses.

For comparative purposes, the total video uncollectible rate assumed by CDM Smith for the York Toll Plaza is 42.2 percent (Table 1, page 14). This includes losses from both unbillable transactions and uncollectible transactions. In spite of the slightly lower video collection assumptions CDM Smith developed for the York Toll Plaza, the revenue risk is much higher compared to that for the Tobin Bridge.

In the case of the Tobin Bridge, video transactions account for only about 15 percent of total transactions. This means that a 50 percent video loss rate results in revenue leakage of only about 7.5 percent. In addition, the Tobin Bridge only accounts for about 7.7 percent of total MassDOT Turnpike System toll revenue. The situation at York, however, is quite different. At York, about 30 percent of current transactions are cash (versus 15 percent at Tobin Bridge), thus putting twice the revenue at this location at risk. In addition, the York Toll Plaza is the single highest revenue generating location on the Maine Turnpike accounting for just over 40 percent of total system revenue in 2015 (versus 7.7 percent for Tobin Bridge).

It is also almost comical that the eTrans report uses an example 60 miles south of the York Toll Plaza (on an entirely different road and in a different type of area) when the closest example of a successful toll conversion can be found just a 15 minute drive south of the York Toll Plaza on I-95 in Hampton, New Hampshire. The New Hampshire DOT converted the traditional mixed use (cash and E-ZPass) barrier toll plaza in Hampton to ORT in 2010. Following its success, they converted the Hooksett Mainline Toll Plaza in 2013. Current plans are for the conversion of the Dover and Rochester plazas by the 2021-2022 time period.

In 2011 Hampton Toll Plaza on Interstate 95 was selected as one of the top ten transportation projects in the country in that year's competition based upon judging in three categories: "on time", "under budget", and "innovative management". The competition was sponsored by the American Association of State Highway and Transportation Officials (AASHTO), AAA, and the U.S. Chamber of Commerce (<https://www.nh.gov/dot/media/nr2011/nr09011195.htm>).



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And upon conversion of the Hooksett Toll Plaza, NHDOT Turnpikes Administrator Chris Waszczuk noted that the benefits of implementing ORT at the Hooksett Tolls include (<https://www.nh.gov/dot/media/nr2013/20130522-open-road-tolling.htm>):

- Improved customer convenience
- Reduced travel time – 270,000 hours annually
- No lines or stopping to pay tolls
- Reduced fuel consumption – 465,000 gallons annually
- Improved air quality – less vehicle idling and delays
- Safer – no lane changing or slowing down
- 30% discount for E-ZPass "passenger type" vehicles

The author of the eTrans report seems to be so focused on promoting AET at all costs, that he neglects to see (or look for) any benefits afforded by ORT. The New Hampshire example is but one of many successful ORT conversions throughout the country. Other examples include the New Jersey Turnpike and Garden State Parkway (NJ), Pennsylvania Turnpike, Central Florida Expressway, and many more.

Response to eTrans Report: Section 2.0 (U.S. Army Corps of Engineers Observations/Requests and MTA's Response)

In Section 2.2 of the eTrans report the author states that toll revenue leakage under ORT has been underestimated, thus making it look more favorable versus AET. It is true, that intentional toll cheats would be able to use the E-ZPass lanes under ORT. But, the same is true with conventional toll plazas with dedicated E-ZPass lanes (which there are at the York Toll Plaza). Thus, conversion to ORT would not result in any (or only minimally more for those who mistakenly get in the express E-ZPass ORT lanes) additional revenue leakage compared to conventional toll plazas. Under AET, revenue leakage occurs when cameras do not take a clear image of the plate, when the department of motor vehicles has incorrect address information, or when motorists do not pay invoices.

Regardless of what the author says on this point, actual experience of ORT revenue collection on the Maine Turnpike at the converted New Gloucester Toll Plaza has shown that there is negligible revenue loss. CDM Smith is the traffic engineering consultant to the Pennsylvania Turnpike, the New Jersey Turnpike, and the Garden State Parkway (NJ). Toll revenue leakage at locations where ORT has been implemented has not been an issue. The same can be said for experience at the Hampton and Hooksett Toll Plazas in New Hampshire.



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For some reason, the eTrans report notes the following, which is totally irrelevant to their argument regarding increased ORT revenue leakage (page 5):

“In addition, E-ZPass lane violations are not limited to just open road lanes in ORT operations. For example, the E-ZPass lanes on the Pennsylvania Turnpike (gate-free lanes in the toll plazas) have been subject to such fraud and abuse that:

“When the Pennsylvania Turnpike’s fiscal year ended in May (2015), there were \$33.3 million still outstanding in unpaid tolls.”^{xxi}

Therefore, for this study to assume only modest violations in ORT lanes at the York Toll Plaza is overly optimistic and biases the results against AET.”

Citing this experience in Pennsylvania is irrelevant and misleading for several reasons. First, if, as the author asserts, this \$33.3 million in revenue loss is not attributable to ORT, but rather to gate free E-ZPass only lanes (referred to as “slip ramps” by the Pennsylvania Turnpike Commission), then it is plainly clear this has nothing to do with ORT. Secondly, had the author correctly understood what the \$33.3 million outstanding tolls referred to, he would not have made this argument at all. In fact, the \$33.3 million referred to represents unpaid tolls for the entire system, including ORT plazas, slip ramps, and conventional toll plazas (which form the vast majority of the Pennsylvania Turnpike toll system). They also represent the cumulative two-year total in unpaid tolls. It should also be noted that while \$33.3 million sounds like a substantial amount, given the total two-year revenue collection on the Pennsylvania Turnpike, this amounts to only a little more than 1.5 percent of systemwide toll revenue. But, again, the bigger point here is that the \$33.3 million dollar unpaid tolls referenced has nothing to do with ORT revenue loss (either on the Pennsylvania Turnpike or on the Maine Turnpike).

Further, if eTrans had read down a little farther in the Pennsylvania Turnpike article from which it quoted, it would have seen that Turnpike Commission Chair Sean Logan said his “*concern is the level of unpaid and uncollected tolls will increase dramatically if the turnpike continues down the road to all electronic tolling without the authority to go after violators with an enforcement mechanism that gets drivers attention*”.

In Section 2.4 the eTrans report again uses incomplete and misleading information from another real world example of AET conversion to argue that AET is good and ORT is bad. Unfortunately, this fails as well. They cite the Central Florida Expressway (CFX) Authority as having “recently



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studied AET deployment throughout the U.S. and Canada and elected to move forward with AET deployment..." CDM Smith is the traffic engineering consultant to the CFX Authority and conducted the traffic and revenue studies leading to their recent decision to implement AET.

Based on the eTrans report, one would be forgiven for interpreting this statement to mean that the CFX Authority decided to convert its entire system to AET. In fact, that is not the case. AET, in this case, will be implemented on a new expansion project as part of a western beltway around Orlando, FL. Total toll revenue on the new AET segment is estimated to amount to \$1.2 million after one year of operation. Total CFX toll revenue in that same year is estimated to amount to \$451.5 million; thus, AET revenue will account for 0.3 percent of total system toll revenue (revenue forecasts for the AET segment and total system are from the Central Florida Expressway Authority FY 2015 General Traffic and Earnings Consultant's Annual Report, CDM Smith, February 2016).

This proposed toll segment is, in many ways, a good candidate for AET. It will serve a highly commuter oriented market and is expected to have more than 80 percent SunPass (Florida's equivalent to E-ZPass) participation. In addition, it will serve as an ideal pilot program for any further expansion projects since any losses at this location would not present a revenue risk to the CFX Authority. None of these conditions are true of the York Toll Plaza. Finally, the eTrans author does not mention that all of the current CFX Authority toll system was converted from traditional toll collection to ORT several years ago; they have no plans to convert any of the existing ORT plazas to AET.

Response to eTrans Report: Section 3.0 (Environmental, Safety and Financial Issues Not Properly Addressed in MTA's Analysis)

Section 3.3 specifically deals with "Shortfalls in the MTA's Financial Analyses". The eTrans assertions here fall into the following categories:

1. The CDM Smith report should have considered a life-cycle cost analysis instead of a net revenue analysis.
2. The CDM Smith report limited its analysis to a 10-year time frame.
3. The CDM Smith report focused on a worst case scenario instead of a most likely scenario.
4. The AET video surcharge amounts are higher than those for other AET facilities and inconsistent with "Good Industry Practices".
5. CDM Smith estimates of toll diversion are too high.
6. CDM Smith underestimated cash revenue leakage rates under ORT.
7. CDM Smith assumed different business rules for AET than they did for ORT.



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Items #1 and #2 – These two are related. We provided net AET and ORT traffic and revenue impacts over a 16-year period from 2015 through 2030 (see CDM Smith report Tables 5 and 6). We also conducted a net present value analysis of the revenue impacts along with estimated capital costs for both AET and ORT over a ten-year period. CDM Smith did not recommend either AET or ORT based on this analysis, but rather provided technical analysis and a professional measurement of impacts, and left that decision up to the MTA.

The structure of the analysis, however, is consistent with studies CDM Smith has conducted for numerous other toll authorities. Furthermore, this is the type of information that is requested by the financial industry (rating agencies, bond insurers, and investors). Maximum focus, from their point of view, is on the risk to toll revenue and the ability of a toll agency to maintain minimum debt service coverage ratios. In this case, AET introduces more revenue risk than does ORT, thus the need for the \$3.00 video surcharge. Capital costs related to construction of a new toll plaza (be it AET or ORT) is substantially less risky. Cost incurred in construction are well established and represent a one-time expenditure. Revenue losses, on the other hand, can occur on an annual basis. Consistent with other tolling agency practices nationally, I would think that the MTA would be much more concerned with preservation of its long term revenue stream, when compared to the one time capital cost to construct a new toll facility.

Item #3 – This is simply not the case. CDM Smith’s base case (see Tables 5 and 6 of the CDM Smith report) reflects “a most likely scenario”. We incorporated actual experience at MTA regarding nearly every variable considered in the analysis. Table 1 of CDM Smith’s report highlights several of the key assumptions in the model that MTA staff provided based on actual experience. The same is true on the cost side of the equation (image review costs, mailing costs, etc.). The author of the eTrans report may think these variables are too high or that they will change in the future. In order to maintain a strong bond rating, we must base our analysis on current operations. Rating agencies are not interested in “up-side” forecasts and do not rate toll agencies on what might happen in the future. If anything, they are much more interested in the “down-side”. Thus, the CDM Smith report also conducted a risk analysis at both a 90 percent and 95 percent confidence level in order to provide the MTA (as well as rating agencies and others, if needed) some measure of confidence that debt service coverage levels could be maintained with either 90 percent or 95 percent confidence.

Item #4 – This is an odd statement. No toll rates (whether cash, E-ZPass, or video) are set based on “Industry Standards”. Rates are set to meet operating, capital, and debt service needs. The video surcharges estimated for the York Toll Plaza are based on factors unique to this location, including a majority of out-of-state travelers (including a significant number of Canadian



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customers), high cash paying market share (which would be video under AET), a high number of invalid department of motor vehicle addresses, current violation payment experience, etc.

Item #5 – Diversion levels developed in the CDM Smith study were discussed above in detail.

Item #6 – The eTrans author again questions CDM Smith leakage rates for ORT, arguing they should be much higher. This, too, was discussed above in detail.

Item #7 – The CDM Smith analysis assumed the same business rules for both AET and ORT. The eTrans report does not give any examples of where different business rules were used, so it is difficult to respond beyond this. Perhaps they are conflating assumed cash leakage rate assumptions under ORT versus those assumed under AET as being based on business rules. Those types of assumptions are not business rules, but rather actual operating characteristics based on MTA's own experience and on the experience of other ORT facilities such as those in New Hampshire, New Jersey, Pennsylvania, and elsewhere.

Response to eTrans Report: Section 4.0 (Summary)

CDM Smith has no comments on this section.

To repeat what was said in the Introduction, CDM Smith entered into this assignment without a bias toward AET or ORT. We have conducted many studies where the preferred outcome was for conversion to, or the introduction of, AET. As clearly stated in our report, AET is not infeasible, but rather must be accompanied by a substantial video surcharge in order to maintain net toll revenue neutrality. ORT at York, on the other hand, would not require any additional toll surcharges to maintain revenue neutrality on MTA's system. The MTA selected ORT. Based on our national experience and a number of technical project-specific risk factors including the toll surcharge, the percentage of MTA income at risk at York, the mix of out-of-state and Canadian traffic, the cash market share, and traffic diversion, it is our professional opinion that the MTA decision was and remains prudent.

If you have any questions or comments, please do not hesitate to contact me at your convenience.

Very truly yours,

A handwritten signature in black ink, appearing to read "Gary T. Quinlin".

Gary T. Quinlin
Project Manager
CDM Smith, Inc.