

Maine Turnpike Authority responses to questions posed by the York Board of Selectmen regarding the Existing Site Evaluation Report and other related issues.

August 26, 2009

1. In the last year, has the percentage of electronic toll use increased and, if so, by how much?

ETC usage on the Maine Turnpike System increased in 2008 over 2007 by approximately 4.7 percent. This increase is not a reliable predictor of future annual growth, because it was distorted by two significant and one-time events: (1) the New Hampshire Turnpike implemented a toll increase which caused many additional New Hampshire residents to sign up for E-ZPass to receive toll discounts and (2) the Maine Turnpike experienced temporary growth in E-ZPass transactions as a result of the I-295 rehabilitation project. ETC Transactions accounted for 52.2 percent of all transactions in 2007 and were approximately 56.9 percent in 2008.

2. If you were to chart the last 5 years what is the average increase in electronic toll use?

As illustrated in the chart below, there have been several significant events over the last five years that have resulted in dramatic, but anomalous increases in E-ZPass transactions. These are one-time events that prevent the calculation of annual average E-ZPass transactions over the last five years from being an accurate or reliable predictor of future growth. For example, in 2005 the MTA converted to the E-ZPass system and became compatible with more than 40 E-ZPass facilities, operating in 8 states. The acceptance of out-of-state E-ZPass tags resulted in a large, one-time, spike in E-ZPass transactions. Also, between July and August of 2005, the New Hampshire Turnpike incrementally launched an E-ZPass system, which contributed to a surge in Maine E-ZPass transactions in the latter part of 2005 and throughout 2006. As mentioned above, in 2008, the increase was again inflated by a toll increase on the New Hampshire Turnpike which caused many additional New Hampshire residents to sign up for E-ZPass in order to obtain toll discounts. Also in 2008, the Maine Turnpike experienced temporary E-ZPass transaction gains due to the traffic diversion to the turnpike as a result of the I-295 rehabilitation project.

Maine Turnpike Authority - Transactions by Payment Class

	Increase	Percentage of Transactions	
		ETC	Cash
2008	4.70%	56.90	43.10
2007	2.61%	52.20	47.80
2006	7.42%	49.59	50.41
2005	17.63%	42.17	57.83
2004	-0.25%	24.54	75.46
2003		24.79	75.21

Chart Notes:

1. February 1, 2005, MTA implements E-ZPass, making Maine Turnpike's system comparable with all other E-ZPass states, which caused a surge in E-ZPass transactions
2. In mid-2005, the New Hampshire Turnpike implemented E-ZPass, which increased Maine E-ZPass transactions in late 2005 and throughout 2006.
3. In 2008, New Hampshire Turnpike implemented a toll increase which caused many additional New Hampshire residents to sign up for E-ZPass, thus inflating Maine transactions. Also in 2008, the Maine Turnpike experienced temporary E-ZPass transaction growth due to the southbound closure of I-295 for construction.

3. Based on statistical data what do you see as the estimated time frame for electronic tolling to be the norm?

It is not clear if this question is inquiring about the future of “**electronic toll collection (ETC)**,” meaning an E-ZPass-type system or similar automated vehicle identification technology, or “**all-electronic toll collection (AET)**” meaning a system in which cash toll collection is eliminated entirely and all tolls are collected through a dual system involving (1) an E-ZPass type system (2) video tolling system that would capture license plate images of all non E-ZPass users, match their license plates to a mailing address data base and mail them a bill for the toll. Therefore, we will provide information regarding the likely future of both methods on the Maine Turnpike. Also, the term “norm” is somewhat subjective, but we will attempt to provide you with information that should satisfy the substance of your question.

Electronic Toll Collection (ETC)

The use of “electronic tolling” (E-ZPass-type system) is already the industry norm as one of the standard methods of toll collection. Most toll agencies offer some form of “electronic tolling”.

The Maine Turnpike Authority estimates that ETC usage will continue to grow, but at a slower rate than has been the case since 2004. As noted in an earlier response, E-ZPass

transactions account for nearly 57 percent of all transactions. As noted in the Existing Site Evaluation, the growth in E-ZPass usage is predicted to be approximately 3 percent per year over the next few years, but it is expected to slow to about 1 percent per year thereafter. This is primarily due to the fact that over the past 12 years the market of frequent Turnpike users has been saturated by the E-ZPass product. This is strongly indicated by the fact that the majority of new E-ZPass accounts being opened today are by people who travel the Maine Turnpike less than once per week. For the most part, frequent users are already in the program. As a result, the E-ZPass tags issued today are generating a significantly smaller number of ETC trips than those issued several years ago. The MTA anticipates that ETC usage will reach approximately 65 percent of transactions by the end of 2014. Annual percentage growth beyond that date will be slight due to the maturity of the market.

All-Electronic Toll Collection (AET)

All-Electronic Tolling (AET) is a very recent approach that just three agencies have implemented on five toll roads and four more agencies are considering for four more roads. This is a small number considering that there are 85 toll highways across the United States. Further, no AET systems are currently operating or are being planned for the New England region, even by agencies that are upgrading their ETC capabilities. For example, the New Hampshire Turnpike is scheduled to implement an Open Road Tolling system at the Hampton Toll Plaza on I-95, much like the one proposed by the Maine Turnpike Authority. They will not be implementing an AET system at that location.

In addition to the small number of installations, there are a number of important factors (specific to each agency and toll road) that must be taken into account when evaluating the feasibility of AET for a particular facility. They include, but are not limited to the, percentage of electronic toll usage, concentration of commuter traffic, in-state vs. out of state traffic, ability to recover and enforce toll payment, financing and legislative restrictions. Because these factors vary widely between facilities, there is currently no clear indication that the industry will move to AET, as a “norm”, at any predictable point in the future.

With respect to AET on the Maine Turnpike, the MTA was initially intrigued by the concept of eliminating cash tolls and collecting all tolls electronically. As a result the MTA asked its General Engineering Consultant (GEC) to include an All-Electronic Tolling Feasibility Review (AET Review) as part of the Existing Site Evaluation Report (ESE Report). As stated on page 13 of the ESE Report: *“no existing cash-based agency has completed a total conversion to AET and therefore there is little to no available comparable information to assist other agencies with forecasting the applicability of AET for their own roadway.”*

The potential applicability of AET to the Maine Turnpike is discussed in detail in the AET Report. In summary however, the report indicated that AET may be feasible on a limited number of highways that serve (1) a high percentage of E-ZPass users, (2) a high percentage of commuters, and (3) a high percentage of users that reside with a common jurisdiction, making it possible to obtain accurate information to bill customers for video tolls and to enforce payment if necessary.

For example, the 407 ETR in Canada is a commuter-dominated artery serving the City of Toronto with ETC usage rates exceeding 80 percent. In the U.S., the Central Texas Turnpike operates AET on SH 183 A and SH 130, both of which are also commuter dominated highways that enjoy ETC usage rates of about 85 percent.

The AET report concluded that AET is not feasible for a facility like the Maine Turnpike that shares none of the above mentioned essential characteristics. The Maine Turnpike is not a commuter-dominated highway. It serves a widely diverse customer base, which includes a large percentage of infrequent users and visitors from out-of-state.

Today, about 43 percent of the vehicles traveling through the York Toll Plaza pay tolls in cash. Under an AET system those tolls would have to be collected by obtaining a video image of each license plate, matching that license plate to a Maine or out-of-state mailing address, and mailing the owner of the vehicle a bill for the toll. The process itself would be expensive and highly unreliable and largely unenforceable, particularly given the fact that no effective reciprocity and enforcement system between states exists. The report estimates that the adoption of AET could put at risk as much as \$17 million per year in uncollectable revenue.

Failure to effectively collect video tolls from Maine's diverse customer base would result in higher tolls for those frequent, in-state users who depend on the Maine Turnpike. The GEC concluded that there is no reason to expect that reciprocity and enforcement agreements or the Maine Turnpike's diverse customer base will change to such an extent that all-electronic toll collection will become a viable option during the next 20 year period.

Open Road Tolling (ORT)

While AET may not be a feasible or financially responsible option for the Maine Turnpike in the foreseeable future, the MTA is planning to introduce Open Road Tolling (ORT) at the York Toll Plaza and at other suitable mainline toll plazas. ORT, also known as Highway Speed Tolling, will enable E-ZPass users to pay their tolls by simply passing beneath a sensor at normal highway speeds. The system would continue to accommodate cash paying customers, who would briefly depart the mainline of the highway to pay at a traditional toll plaza. ORT is discussed on pages 14 and 15 of the ESE Report.

4. Do you have a preferred site for the toll plaza and, if so, where is it?

The MTA does not have and will not have a preferred site for a new toll plaza until it has completed the multi-phased, evaluation process, referred to as “The Highway Methodology”. This process is prescribed by the United States Army Corps of Engineers (USACE) and considers engineering criteria, environmental impacts, public input, cost and regulatory agency review.

A brief explanation of where we stand today and what must be accomplished before the MTA can settle on a preferred alternative may improve understanding of this issue.

The established process referenced above began in 2005 with the definition of the Purpose and Need statement. By the spring of 2008, it had progressed to the site screening and selection stage. The process was suspended, however, in April of 2008 due to concerns raised by the public, which prompted the York Board of Selectmen to request that the MTA redirect the GEC to conduct a more detailed study of the existing toll plaza location to determine “what it would take” to construct a safe and efficient toll plaza there. The GEC had previously eliminated the existing site from consideration early in the process because its location near an interchange, on a curve, at the bottom of hill and other physical deficiencies violated the basic engineering guidelines set out by the Federal Highway Administration for the construction of safe and efficient toll plazas.

On June 16, 2009 the GEC presented its conclusions and recommendations of the Existing Site Evaluation to the MTA Board and York Board of Selectmen. The GEC recommended the advancement of a “no build” option and two additional options at the existing location for further consideration. The GEC also recommended that the MTA resume its investigation of alternative locations beyond the existing location, emphasizing that the environmental permitting agencies would require such an investigation, particularly in light of the potential environmental impacts and the considerable costs of the options recommended for advancement at the existing location. Furthermore, the Federal Clean Water Act Section 404 (b)(1) Guidelines requires all practicable alternatives be considered, which in this instance must include alternative site locations.

The GEC also reported that the advanced engineering conducted as part of the existing location study, particularly the reduction in size of the plaza from 23 to 15 lanes, may significantly reduce the environmental and community impacts at alternative sites. The GEC indicated that the smaller plaza footprint may now allow a new plaza to be built at an alternative location without displacing any homes and while meeting the engineering and safety guidelines, minimizing environmental and private property impacts and reducing project costs.

The process going forward will include the following:

- A) Following the USACE Highway Methodology (HWM), the GEC will complete the Site Identification and Screening Study for alternative locations, using the new, smaller plaza size. (Much of this work was accomplished during the initial Site Identification and Screening Study that began in 2007 and was suspended in spring of 2008 in order to conduct a more detailed evaluation of the existing site, as requested by the York Selectmen.)
- B) The GEC will prepare a comparison of the best of the existing site locations and the best of the alternative site locations, based on satisfying the project purpose and need, avoidance and minimization of environmental and community impacts and practicable costs.
- C) The York Select Board will be invited to participate in a MTA meeting, during which the GEC will present the comparison of the best sites at both the existing site location and the alternative site locations, as well as a recommended short list of sites to be advanced for further consideration.
- D) The MTA staff will hold a public meeting in York to present and receive comment on the GEC's comparison of the best sites at both the existing site location and the alternative site locations and the GEC's recommended short list of sites to be advanced for further consideration.
- E) The MTA will finalize and submit a Phase 1 Study Report to the USACE, which will include the recommended short list of sites, as well as the process used to comply with the Highway Methodology to select those sites.
- F) The USACE and other permitting agencies will review the Phase 1 Study Report and must confirm that the Highway Methodology was properly followed and that the short list of sites is appropriate.
- G) The GEC begins Phase 2 of the USACE Highway Methodology by refining designs and conducting additional field investigation for the short list of sites.
- H) The GEC will prepare a comparison of the short list of sites, as well as a recommended preferred alternative based on additional engineering, avoidance and minimization of environmental and community impacts and practicable costs.
- I) The York Select Board will be invited to participate in a MTA meeting, during which the GEC will present the comparison of the short list of sites, as well as a recommended preferred alternative.

J) The MTA Board will hold a public hearing in York to present and receive comment on the GEC's comparison of the short list of sites, as well as the recommended preferred alternative.

K) The MTA will finalize and **submit Phase 2 Report containing the preferred alternative.**

It is important to note that once a preferred site is submitted by the MTA, the U.S. Army Corp of Engineers must certify that the preferred site is also the Least Environmentally Damaging Practicable Alternative (LEDPA). The MTA may not submit applications for environmental permits until this certification is received from the USACE

5. If the York toll booth was all electronic tolling how large would it have to be?

For initial conversation, an (AET) toll plaza may consist of an overhead frame capable of holding AET sensors and cameras, and a small utility building to house related infrastructure necessary to run the AET system. Given the nature of AET, additional lanes beyond mainline lanes are not necessary. However, there would need to be room for potential mainline lane widening, clear zone width to the overhead frame foundation, the foundation itself and the utility building. For conceptual purposes, this could fit within the MTA's existing Right-of-Way

6. According to the FHWA's recommended guidelines for plaza location and design, "proposed plaza construction and modifications should be designed with anticipation of increasing ETC utilization, and eventual removal of conventional plazas" (P. 15, State of the Practice and Recommendations on Traffic Control Strategies at Toll Plazas)

This is why the MTA is planning a plaza with Open Road Tolling (ORT) and the minimal number of cash lanes to ensure the safe and efficient flow of traffic. Additionally, as ETC penetration grows, justifying additional ORT lanes, cash lanes will be removed to make way for the additional ORT lanes. In this manner, the MTA is using the same space twice – first as a cash lane and then as an ORT lane when appropriate. The new plaza will be designed to accommodate a relatively simple and inexpensive removal of manual cash lanes and the installation of ORT lanes when necessary.

The FHWA's State of the Practice and Recommendations on Traffic Control Strategies at Toll Plazas goes on to say the following: *"Economical conventional plaza design and construction is desirable where there is no existing regional use of ETC, cash collection metering affectively improves facility operations, and relatively low commuter traffic volumes are forecasted."*

The operative phrase above is “relatively low commuter traffic volumes are forecasted”. Currently about 11% of the traffic passing through the York Toll Plaza is commuter traffic, with 7% enrolled in the MTA’s commuter discount program. About 51 percent of the vehicles passing through York Toll Plaza are from out-of-state. The low percentage of commuter customers combined with the high percentage of out-of-state travelers add to the already considerable future uncertainty about effectiveness of collecting tolls and enforcing payment through the use of AET. This uncertainty translates into significant financial risk.

7. *How does the MTA reconcile its reliance on FHWA guidelines with its intention to spend tens of millions of dollars and uproot York citizens to build a new toll plaza incorporating conventional tolling?*

This question raises a number of separate, but related issues which we will attempt to address individually below. As an introduction to our responses, however, it may be useful to cite language contained in the original legislation that created the Maine Turnpike Authority in 1941:

“The economic and social well-being of the citizens of the State requires that the transportation system be developed in a comprehensive manner and depends upon the safety, efficiency and modern functional state of the turnpike.”

To fulfill this statutory charge, the MTA is required to undertake capital improvements to ensure the safety, efficiency and modern functional state of the highway, its bridges, toll plazas and other critical components of the infrastructure. In doing so the MTA must carefully consider and attempt to properly balance the interest of Maine citizens, our state’s economy, the environment, our customers, neighboring communities, nearby landowners and a myriad of other concerns in an effort to serve the public good. This is often a difficult and challenging responsibility, but the MTA has a long and documented history of meeting this responsibility successfully.

Federal Highway Administration guidelines

The purpose of Federal Highway Administration guidelines is to promote safety, consistency and the use of best practices with respect to the construction, rehabilitation and repair of the nation’s highways. Just as cities and towns throughout Maine utilize nationally recognized building codes to ensure the long term security and safety of their citizens, the Maine Turnpike Authority utilizes Federal Highway Administration Safety guidelines to ensure the safety of the more than 100 million people who travel the highway every year.

Costs

The York Toll plaza is a vital piece of Maine's transportation infrastructure. It currently serves more than 16 million vehicles per year and generates more than \$37 million per year, which is used to maintain the state's most important highway.

The York Toll Plaza was constructed in 1969 with an expected structural lifespan of 25 years. It is now approaching its 41st year of operation. The deteriorating condition of the plaza has become a significant and increasing concern with respect to the safety of both motorists and employees. As stated in the Existing Site Evaluation Report, Section 3, Project Purpose and Need, "Based on the York Toll Plaza's crash rate history and operational performance, it is clear that the present plaza cannot deliver, today or in the future, as safe, efficient and modern operation as required of the turnpike."

A significant investment will be required to replace the plaza, whether it is replaced at the existing location or elsewhere. It is the MTA's obligation to Maine citizens, toll payers and bondholders to ensure that the end result of that investment is a safe, efficient and modern toll plaza that not only addresses the deficiencies of the existing plaza, but is capable of performing safely well into the future.

Home Displacement

It has never been the intention of the MTA to "uproot York citizens." On the contrary, it has always been the intention of the MTA to build a safe, efficient and modern toll plaza while minimizing and if possible eliminating the need to displace homes or impact private property. As we have explained from the beginning of this study, the US Army Corps of Engineers' site selection process begins by identifying all possible sites that meet basic engineering criteria and by considering the largest potential impacts (worst case scenarios) at each of those locations. From that point, the process is primarily devoted to the avoidance or minimization of those impacts, with the goal of meeting the requirement of the environmental permitting agencies to advance the Least Environmentally Damaging Practicable Alternative.

This commitment to impact avoidance and minimization is evident in the progress that has been made to date with respect to the York Toll Plaza Study. The recommendations included in the GEC's Existing Site Evaluation Report not only called for the advancement of three options at the existing toll plaza site, none of which require the displacement of homes, but also calls for the resumption of the alternative site investigation based on the GEC's confidence that the revised, minimized toll plaza could be constructed at an alternative location while achieving FHWA guidelines and without displacing any homes.

Cash Toll Collection

While the MTA looks forward to the introduction of Open Road Tolling at the York Toll Plaza, which will allow E-ZPass users to pay their tolls by simply passing beneath a sensor at normal highway speed, we also recognize that the need to offer the option of cash toll payments will continue well into the foreseeable future. The MTA's position on this issue is supported in considerable detail by the GEC in the AET Report. This issue was also addressed at some length in response to Question #3. In short, the GEC concluded that the Maine Turnpike's highly diverse customer base, which is largely made up of infrequent users and out-of-state travelers who may originate from states that do not have E-ZPass, demands that the Maine Turnpike continue to offer cash toll collection in order to effectively and fairly collect revenue from all Turnpike users.

8. Why is the MTA applying dimensional standards for the location of new toll plazas to an existing plaza?

The existing toll plaza needs to be replaced. This will require a significant expenditure of funds whether at the existing location or at a new location. It is the MTA's goal to develop a replacement plan that is most prudent, which includes meeting as many of the appropriate standards for good operation and safety as possible, avoiding and minimizing impacts to community and environmental resources and doing so with the least expenditure of funds.

In developing a comprehensive replacement plan, a number of problems or deficiencies can be identified (and subsequently addressed) without reference to any specific standards, e.g. rusting support columns, leaking roof, corroding electrical wiring, etc. There are also a number of symptoms that require more in-depth investigation to understand the underlying problem or deficiency. These deficiencies often require a standard against which to be compared to determine acceptability. It is these standards, e.g. sight distance, distance from an interchange, proximity to a curve or hill that forms the basis of a comprehensive evaluation and recommended resolution. Whether a toll plaza exists or is proposed, its merit and consequences are still measured against these standards. The existing York Toll Plaza, in order to function according to "best practices" and national guidelines, must be evaluated against these same practices and guidelines.

9. If, as the MTA argues, the York toll plaza is in such a conspicuously deficient location, why did HNTB build it in a mire on a curve at the bottom of a hill to begin with?

The location of the existing York plaza was not selected by HNTB or the MTA, nor was its location based on engineering criteria or best practices. Its location was primarily determined by political negotiations between state and federal transportation officials surrounding the construction of the Piscataqua River Bridge and the new section of

highway connecting the bridge with the Maine Turnpike. Both HNTB and the MTA opposed the decision at the time. Knowledge of this history and its long term consequences, with which we are now dealing, serve as a reminder as to why engineering and environmental best practices should factor heavily into long term transportation investment decisions. Fortunately, the strengthening of the environmental permitting process over the last 40 years, in particular the USACE Highway Methodology, combined with the recent development of FHWA guidelines for toll plazas, requires a more deliberative and accountable decision making process for today's significant capital projects.

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