

April 7, 2017

Marybeth Richardson, Presiding Officer  
Department of Environmental Protection  
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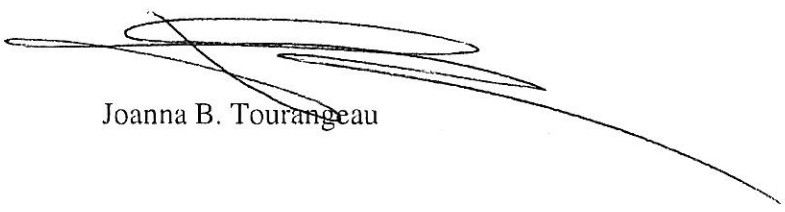
Hearing Officer Richardson:

In accord with paragraphs 15, 16, and 17 of your March 14, 2017 Second Procedural Order, please find enclosed two hard copies of the Maine Turnpike Authority (“MTA”) pre-filed testimony and associated exhibits.

Given that several of the four MTA witnesses (Mills, Quinlin, Lavalley and Davidson) each reference certain parts of the exhibits, we compiled the testimony and exhibits into a single packet referencing a single set of exhibits A-BB. It is our hope that this approach enhances the readability and cross-referencing efficiency while also reducing the overall volume of our filing.

An identical hard copy of the testimony and exhibits will be delivered to Attorney Anderson for the Coalition for Responsible Toll Collection. The entire package of testimony and exhibits will also be delivered by electronic mail to all entities identified on the service list maintained by the Maine Department of Environmental Protection website under “Major Projects before DEP.”

Sincerely,



Joanna B. Tourangeau

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

PRE-FILED TESTIMONY OF PETER MILLS  
EXECUTIVE DIRECTOR OF THE MAINE TURNPIKE AUTHORITY

1. Since March 17, 2011, I have served as Executive Director of the Maine Turnpike Authority (“Turnpike”). As will be evident from this pre-filed testimony, a principal concern for much of my tenure has been the question of whether the Turnpike should continue to collect cash at its 19 toll sites along the highway. The best summary of our perspective is contained in my staff report to the Board of Directors on April 30, 2014, attached as Exhibit B. The purpose of this pre-filed testimony is to provide additional narrative background and to cover in greater depth the issues surrounding that decision considered by the Board of Directors for the Turnpike in making their decision to continue collecting cash as that decision applies both to the York Plaza and to the entirety of the Turnpike.
2. To address the cash collection question required my extensive study of technical matters with help from experts in many and diverse fields, including electronics, finance, traffic engineering, and toll business management. I met with the interveners including Marshall and Joan Jarvis, Peter Smith, Dick Bilden and Dean Lessard who were helpful, and their hired consultant, Daryl Fleming. I have attended Think Again meetings and several meetings with the York Board of Selectmen.
3. In conjunction with my appointment in March of 2011, the Turnpike retained as my consultant Roger Mallar, a former DOT Commissioner under three Maine governors and one of Maine’s most experienced highway engineers. For the initial six months of my employment, Mallar worked with me to address a number of Turnpike issues including this one. Our resumes are attached as Exhibits V and W.
4. In 2011, the Turnpike needed to begin replacing its electronic toll systems in all 19 plazas where tolls are collected. The legacy system of older technology had reached a point where it could no longer be supported. Newer systems were available that would increase the reliability of collection while functioning at lower cost. On pages 11 and 12 of Exhibit T, my letter to the Army Corps of Engineers, I have prepared a summary of differences between the old system and the new and why replacement is necessary.
5. Upgrading the Turnpike's electronic controls brought with it the opportunity to utilize six barrier tolls to toll E-ZPass customers at highway speeds. These barrier tolls are locations where motorists are tolled in each direction through plazas on the open road at York, South Portland (Exit 44), the Falmouth spur, New Gloucester, West Gardiner on the mainline, and West Gardiner/I-295. The remaining 13 plazas are “side tolls” where the motorist is already at reduced speed on an entrance ramp preparing to enter the Turnpike.

## **AET versus ORT**

6. In advance of replacing its electronic systems, the Turnpike Board carefully considered how to collect tolls from its cash customers, whether by "Open Road Tolling" (ORT) or by "All Electronic Tolling" (AET). Both methods allow E-ZPass motorists to be tolled at highway speeds with exceptional reliability. The electronics behind E-ZPass are identical under each. The difference is that ORT preserves collection from cash customers at the side of the highway whereas AET eliminates cash collection and replaces it with a back office function whereby license plate photos are examined in order to attempt to collect tolls by mail.
7. ORT has the advantage of secure cash collections at the time of Turnpike use. Plate photos are used only as a backup either to bill violators (i.e. vehicles using the Turnpike without stopping to pay the toll) or to post tolls to the accounts of E-ZPass customers whose transponders fail to register a transaction at the time of passage through the toll plaza. The Maine Turnpike violations department has been using plate photos for these purposes for twenty years, ever since electronic tolls were first installed. We are thoroughly familiar with the process (and limitations) of examining photos, looking for addresses and attempting collections by mail from many jurisdictions.
8. Maine's automobile cash toll rates are low by national standards, only \$1 at 14 sites, \$1.50 at Wells and Gray, \$1.75 at the West Gardiner mainline barrier, \$2.25 at New Gloucester and \$3 at York. By contrast, it costs \$15 to pay cash for crossing under the Hudson River into Manhattan.
9. One consequence of this low toll rate is that in Maine it is not viable to collect tolls by mail from a violator until we can match three unpaid tolls to the same plate within a six month period. Toll by mail is not financially viable, even for Maine residents, until this point due to the costs associated with looking up the address and sending out mail for only a few dollars in lost tolls. For out-of-state motorists, the costs of pursuit, including look-up fees, are much higher with a much lower likelihood of collection by mail.
10. With AET, all motorists who formerly paid cash are treated as customers who need to be tolled by mail. A new account is created for each unique license plate photo. The scale of back office operations is substantially greater under AET as exemplified by the recent Massachusetts conversion.
11. At a single moment in the evening of October 28, 2016, Massachusetts changed its entire integrated turnpike system from cash collections to AET. Within the ensuing four months, their new system created over two million toll-by-mail accounts based on license plates. The number of plate accounts now exceeds the number of E-ZPass accounts even though these former cash receipts represent only 14% of their toll transactions.
12. Maine had 22.3 million cash transactions last year, including 4.4 million at York. 27% of all transactions on the Maine Turnpike for 2016 were in cash. Cash collected at York was 11.34% of all revenue for the Turnpike last year.
13. For a continuous limited access highway like the turnpikes in Maine and western Massachusetts, it is important to adopt one system or the other, either cash (ORT) or toll-by-mail (AET), for the entire contiguous road. If York were converted to AET but the other (in some instances brand new Turnpike facilities) were left ORT then the same motorist could be a toll by mail customer at York but then a violator at New Gloucester if they failed to pay cash at that ORT location.

14. When Roger Mallar and I came to the Turnpike in 2011, the Turnpike Board had previously decided to continue collecting cash at highway sites. This decision was based on the recommendation of the engineering firm HNTB whose analysis supporting that decision is contained in Exhibit A. Although HNTB's report was written in 2009, the factors identified as underpinning the conclusions in that analysis remain unchanged today.

15. Upon our arrival, Mallar and I immediately decided to obtain a second opinion on whether to continue collecting cash tolls. On June 13, 2011, we submitted a Request for Proposals to five national consulting firms to obtain an Independent Financial Risk Analysis. Our purpose was not to obtain another recommendation but to obtain a full description of how to implement AET, what financial adjustments might be needed, and what risks encountered so that a policy decision could be made about whether to adopt AET. After evaluating responses from leading firms, we selected Wilbur Smith Associates (now CDM Smith) to create an AET model specific to our tolling environment. Reports resulting from their work are attached as Exhibits B (4/14/14), , G (1/12/17), P (9/9/15) Q (7/22/16) and AA (7/22/16),

16. The immediate focus was to create an AET model for York; but because of our larger concern for the road as a whole, we commissioned a separate AET study for the toll at West Gardiner/I-295. We chose that site because it is functionally a separate turnpike with its own barrier toll on a spur where trips need not be matched to electronic tolls on the mainline. Thus, it would be suitable as a pilot site. It is also more representative of the rest of the road in that it is one of 14 sites with a \$1 cash toll. Thus, West Gardiner/1-295 presented a potential pilot site for the Turnpike to consider as a test for AET. This is what Massachusetts later did on the Tobin Bridge.

#### **E-ZPass Initiatives**

17. When Mallar and I came on at the Turnpike in 2011, we immediately recognized that regardless of whether the Turnpike Board opted to use AET or ORT, expansion of E-ZPass would improve the Turnpike's tolling environment. A high E-ZPass penetration rate is a prerequisite for AET. For ORT, a high penetration rate reduces the number of cash lanes necessary and lowers the overall costs of toll collection. In 2011, Maine collected 60.5% of its revenue from E-ZPass transactions. We have since raised that rate to 71.5% through numerous initiatives summarized here.

18. As part of a Turnpike reform bill in the spring of 2011, I obtained legislative authority to form reciprocity contracts with other jurisdictions to collect tolls. By August of 2011, we had negotiated agreements with New Hampshire and Massachusetts. We became the first three states to enforce collection against each other's citizens by suspending or withholding vehicle registrations. Based on a plate survey in 2012-13, we estimate that only 23% of traffic in Maine's cash lanes comes from these two neighboring states.

19. Actual collection under this reciprocity program has been modest. None of the three states pursues every motorist who fails to pay. New Hampshire charges \$3 to look up an address and will not attempt enforcement until there are at least ten unpaid tolls under the same plate within one year. With Massachusetts, we agree not to forward a violation account for collection with less than \$25 at issue. While reciprocal collections have been modest, the program does help persuade the small number of serious evaders to conform.

20. In 2012, the Inter Agency Group (the "IAG") that coordinates 36 E-ZPass agencies in 16 states switched to a new transponder that enabled us to drop the price from \$25 to \$10 beginning on February 1, 2012.

21. Later in the spring of 2012, the Legislature granted our request to eliminate a cumbersome commuter discount program that had been mandated by law since 1982 under the paper ticket system. So long as the Turnpike was required to administer this program, it was nearly impossible to sell E-ZPass transponders over the Internet. On November 1, 2012, the Turnpike did away with the old program, adopted a new volume discount, and began selling transponders on-line. The Internet has since accounted for more than half of all E-ZPass transponder sales. Since November of 2012, we have been selling between 3000 and 5000 transponders per month.

22. Also in 2012, we obtained legislative approval to permit the Turnpike to send notices to violators by ordinary mail rather than certified, reducing the costs of toll by mail collection by \$5.79 per attempt. This has saved the Turnpike over \$50,000 per year within its present violation enforcement system. The added cost of certified mail alone would likely have been fatal to a high volume toll by mail system required by AET.

23. On November 1, 2012, the Turnpike passed a 20% toll increase that greatly favors Maine E-ZPass account holders in two respects: (1) Rates for cash were raised higher than rates for E-ZPass, and (2) a new volume discount program was introduced to all Maine E-ZPass auto customers based on the number of trips per month. The Turnpike also continues to provide to business customers a volume discount that is one of the few remaining in the nation. My summary of Maine's toll protocols is attached as Exhibit E.

24. To promote these incentives for adopting E-ZPass, the Turnpike launched a series of successful sales campaigns, with a focus on drive-time radio. The Turnpike also set up E-ZPass sales booths for busy periods at the service plazas, but this experiment was not productive.

25. Because Massachusetts and New Hampshire are prominent contributors to out-of-state traffic on Maine highways, their efforts have helped to raise the percentage of E-ZPass revenue in Maine; and Maine's efforts have helped them as well.

26. In summary, the Turnpike has aggressively promoted E-ZPass by:

1. adopting reciprocal toll enforcement with two neighboring states,
2. lowering the transponder price from \$25 to \$10,
3. increasing transponder sales to greater than 3000 per month for the past 53 months;
4. selling more than half of its transponders over the Internet,
5. providing accounts without service fees,
6. creating a family discount for E-ZPass subscribers that returns \$8.5 million per year,
7. continuing to pay business customers an E-ZPass discount that returns \$2 million per year,
8. raising tolls by applying higher rates on those without a Maine E-ZPass,
9. conducting E-ZPass promotions on radio and social media,
10. installing modern electronic lane equipment to reduce costs and increase reliability, and
11. reaping the collateral benefit of E-ZPass promotions in neighboring states.

#### **Limitations of the E-ZPass Initiatives**

27. In 2006, the percentage of Turnpike toll revenue paid via E-ZPass was 40%. By 2010, it was 59%. As a product of recent initiatives, it has risen to 71.5%. It will likely continue rising, but more slowly and with diminishing returns since commuters and other regular users benefitting from E-ZPass have already entered the program. Many of our travelers, even from Maine, use the Turnpike infrequently.

28. While the percentage of E-ZPass transactions has risen slowly, we continue to rely on substantial revenue from cash, particularly as overall traffic has grown in recent years. The

Turnpike collected \$38.24 million in cash last year, \$39.23 the year before, and \$40.11 the year before that. At the York toll, 4.39 million motorists paid cash last year, 4.48 million the year before, and 4.6 million the year before that.

29. When we convert a frequent cash customer to E-ZPass, it reduces future collection costs. But that is not true for a customer who uses the turnpike only a few times a year. There are costs, either to the customer or to the turnpike, for opening and maintaining an account. Many agencies charge a monthly fee for open accounts. Maine does not. To encourage the use of E-ZPass, Maine carries all accounts at no charge, even those with little or no activity. For many years, Massachusetts has given away transponders. However, giving them to infrequent users and carrying their open accounts can cost more than any tolls collected. Consequently, the Turnpike loses revenue when an infrequent cash customer converts to E-ZPass.

30. At the end of 2016, Maine had 216,414 open personal E-ZPass accounts, but:

- 76,180 of them had no activity in December 2016 and
- 33,634 had no transactions for more than 120 days.

31. Associated with these open accounts, Maine had 327,568 outstanding auto transponders, of which:

- 96,818 had no activity during December 2016 and
- 40,072 had not been used for at least four months.

Since 2012, the Maine Turnpike has been increasing the number of outstanding transponders at a rate of about 17% per year. However, the rate of growth in E-ZPass transactions has been less than half that, even while overall traffic has increased by 5% in each of the past two years.

### **The 2014 Decision**

32. As the work of CDM Smith progressed in 2012 and 2013, we conducted an all season survey of license plates in representative cash lanes to better understand where cash payers come from at different tolls and at different times of year. The survey was conducted at intervals from August of 2012 through June of 2013 and revealed that within a sample of 407,332 plates, people who pay cash in Maine come from all 50 states, the District of Columbia and all 10 provinces. This is consistent with attracting 36 million visitors each year. 90% of the plates in the cash lanes were seen only once during any given period of the survey. These findings were integrated into the consultant's work.

33. In April of 2014, CDM Smith had completed its Financial Risk Analysis for AET (Exhibit B) at each of two locations, Gardiner/I-295 and York. The analysis was supported by detailed financial models that were tailored to the costs, traffic and tolling profiles specific to the Maine Turnpike and supported by the license plate survey of cash customers. The model and its predictions were developed from the firm's extensive experience in advising agencies throughout the United States on similar questions and assisting many of them in making the transition to cashless tolling.

34. On April 30, 2014, I submitted a consensus staff report (Exhibit C) to the Maine Turnpike Board concluding that to abandon cash collections at York was not a feasible choice. Of even greater significance was the model's disclosure that AET at Gardiner/I-295 was less feasible than at York.

35. In short, the study revealed that AET doesn't work to replace a high volume, one dollar cash toll frequented by occasional visitors from diverse locations—conditions that are common at most locations on the Maine Turnpike.

36. On May 20, 2014, the Selectmen of the Town of York, having read the studies and recommendations, wrote a letter to the Turnpike Board (Exhibit H). In pertinent part, it reads as follows:

“1) The York BOS [Board of Selectmen] recognizes that all electronic tolling (AET) is and should be the ultimate policy goal for an integrated interstate toll collection system. However, we recognize that certain technical and political impediments make adoption of this AET system unfeasible at present.

2) The York BOS recognizes that 34% of MTA toll revenues consist of cash payments, indicating that Open Road Tolling is the next most desirable collection format.

3) The York BOS remains steadfast in its belief that the current toll booth location is suitable for the location of an ORT system.”

The letter goes on to encourage the Turnpike to design an ORT plaza at or near the location of the existing plaza at mile 7.3 in order to determine its viability. The Turnpike and its consultants later developed and thoroughly studied plans for an ORT plaza at mile 7.3 but ultimately this alternative was rejected when it failed to measure up to other alternatives.

37. On June 19, 2014, the Turnpike Board held a well publicized hearing on whether to adopt AET or continue collecting cash at York and other toll sites. Attached as Exhibit D are extracts of minutes from the ensuing meeting of July 24, when the board voted unanimously not to adopt AET in language as follows:

“After consideration of a report commissioned by the Authority from CDM Smith, recommendations of MTA staff and comments received from members of the public the board has determined that All Electronic Tolling (AET) is not feasible on the Maine Turnpike or in the best interest of the Maine Turnpike or Turnpike users at this time or for the foreseeable future. MTA staff is directed to continue to analyze other options for modernization of the Maine Turnpike Authority’s toll collection system.”

38. Following this Turnpike Board decision with the issue of cash collection resolved, the Turnpike retained Jacobs Engineering to perform the necessary design work. The first task was to determine plaza size in light of projected traffic and other current assumptions, most notably the assumption about how many transactions can be managed per hour by each toll attendant. My predecessor had directed that the figure should be limited to 275 vehicles per hour. However, experience had proven that attendants were capable of handling 325 per hour. Therefore, Jacobs was directed to size the plaza with this new standard in place. This and other considerations led to reducing the number of required cash lanes from 11 to 9.

39. The second task was for Jacobs to complete the preliminary design of an optimal plan for an ORT plaza at or near the existing site. This work was commissioned to honor the request of the York Board of Selectmen. Our consultant, our staff and the Turnpike Board devoted a great deal of time and attention to this possibility with participation from representatives designated by the Town to follow our progress in personal meetings.

40. The Town’s original opposition to the plaza in 2006 and 2007 stemmed entirely from a desire to retain the plaza at its existing location and avoid what was then a major outcry over the prospect of homes being taken by eminent domain, a concern that does not apply, given the selection of the site at mile 8.8 that requires no use of eminent domain.

41. As Jacobs proceeded with its site alternatives analysis (summarized in Exhibit I), it became apparent that constructing an ORT plaza at mile 7.3 was less safe, more expensive, and of greater detriment to the environment than any other alternative.

42. On November 16, 2015, Turnpike staff recommended to the Board that mile 8.8 be selected as the preferred site for building a new ORT plaza. The recommendation is attached as Exhibit J. On November 19, 2015, the Board voted unanimously to select the site at mile 8.8. Attached as Exhibit K are minutes of the Board's deliberations and order on this issue.

### **Implementation of Open Road Tolling**

43. The building of a new toll plaza at York is only one component of a complete overhaul of the 19 locations where tolls are collected. When the Turnpike Board made its decision in July of 2014 to continue collecting cash, the Turnpike had already converted a few of its toll sites to the new electronic system wherever it could do so most easily at modest cost. These included the mainline barrier at New Gloucester and several of the side tolls.

44. At the time of this writing, the Turnpike has converted two of the six barrier tolls, has two other barrier tolls under construction, and has converted nine of its 13 side tolls. Each of these sites preserves cash collection. The effectiveness of the new system has proven itself many times over in that it collects revenue more accurately and it does so with reduced operating costs.

45. Once the capital is invested to preserve or build cash booths on the road, the Turnpike's primary remaining cost is a variable one, that of paying toll collectors, whose staffing levels are adjusted to maintain efficient collection at all times of day during each season of the year. Lanes are staffed based on our experience that a single toll attendant can make 325 collections per hour. Their schedules are adjusted to meet the anticipated traffic.

46. At rush hour, we staff some collectors to work in four hour shifts so that we have just enough people during the busy times and can reduce staffing during mid-day lulls. At night in York, there is only one person to cover traffic in each direction. Yet even then, each collector will bring in \$800 to \$1200 during seven hours of nighttime duty. On busy summer Sunday afternoons, each of the five workers in the southbound cash lanes will easily collect several thousands of dollars per shift. A single attendant in the truck lane may collect as much as \$12,000.

47. The certainty of cash collection is as close to 100% as any system can provide. Its efficiency, its reliability, and its low operating cost cannot be matched by trying to toll by mail from an office building.

48. AET is appropriate for toll roads where:

- 90% of daily commuters can be persuaded to pay with a toll tag;
- a predominance of in-state traffic makes enforcement easier;
- tolls are high enough to justify the cost of postage and back office processing;
- lack of available real estate makes it cost prohibitive to build cash booths near the road;
- there is no room on bridges, tunnels or constrained highways for cars to stop;
- license-obscuring snow storms are rare;
- the capital cost for new cash plazas significantly outweighs the losses and costs for AET;
- motorists on the toll road have few alternative routes for diversion; and
- the agency's credit is not dependent on revenue bonding.

These criteria do not apply to York nor to other Maine Turnpike tolls.



## Massachusetts in Contrast to Maine

49. Massachusetts made its decision to convert to AET based on a 2012 study by the consulting firm AECOM. Extracts from the Executive Summary of that report are attached as Exhibit L with an accompanying news account in Exhibit M. AECOM observed that interchanges built on the Massachusetts Turnpike were functionally obsolete and not capable of hosting cash toll collections. They summarized this issue as follows:

“To economize construction on these early expressways, the limited-access interchanges were designed to funnel all movements, entry and exit, east-bound and west-bound, into a single toll collection point where staffed toll collection operations were conducted. These “trumpet” type interchanges – named for their resemblance to the bell and tubing of a trumpet – are functionally obsolete by today’s engineering standards and no longer employed in modern construction. In order to focus all traffic onto a single point, the trumpet interchange ramps are configured with tight-radius curves and short approaches into the toll plaza. Traffic movements are very circuitous and slow.”

See page ES-2 of Exhibit L.

50. Highway and interchange constraints made it almost impossible for Massachusetts to continue collecting cash within their legacy system. An October 2013 article from TollRoadsNews (Exhibit N) explains that Massachusetts was also motivated by development opportunities arising from abandoning cash tolls in places like Allston:

“The project called the Allston Interchange or Allston Straightening is a rebuild of an elevated half a mile of the Turnpike that sits on about 30 structurally deficient spans that go back to original construction in the 1960s. . . . The straightening of the mainline and elimination of the three toll plazas and complex ramps will free up some 60 acres of land for urban development, both housing and commercial.”

Deficiencies and opportunities at the Allston interchange exemplify conditions that are found elsewhere in Massachusetts and other metropolitan tolls.

51. The Massachusetts collection system depended on tickets until recent times. The amount collected at each toll varied based on the class of the vehicle and on the motorist’s point of origin. The toll collector had to examine each ticket and make change in an amount that differed from vehicle to vehicle. The process was time consuming and it backed up traffic. One of the reasons Massachusetts converted to AET was to replicate the ticket system through plate photos and vehicle classifications taken at each stage of the journey.

52. Maine did away with tickets 20 years ago. All cash tolls in Maine are paid in the same amount within each class at each location, regardless of where the trip originated. Maine’s six mainline barrier tolls have simple collection systems operating in each direction. Similarly, our side tolls are essentially barrier tolls paid in only one direction -- on entering the turnpike and not departure. Most of Maine’s interchanges have either been built or rebuilt since barrier tolls were adopted, thus avoiding traffic limitations of the sort that Massachusetts has needed to eliminate.

53. The simplicity of the Turnpike’s cash system makes it possible for a single collector to handle many transactions per hour and for shifts to be scheduled as appropriate to meet traffic demands.

54. AECOM presented Massachusetts with the choice of moving to AET to preserve their historic collection protocol or adopting a new barrier toll system with Open Road Tolling (ORT). Although AET was the preferred choice for Massachusetts, AECOM had the following to say about ORT on

the first page of their report:

“ORT is a tolling approach that has been successfully implemented by many toll agencies. It is a tolling strategy intended to provide maximum convenience and time savings to ETC [electronic] customers, the payment method exposing an agency to the lowest processing cost, highest accuracy and lowest payment risk to the operating agency. . . . The ‘ORT Plaza’ design concept has emerged as the best way to accommodate E-ZPass and cash toll collection at a given location. Drivers with E-ZPass are provided high-speed, multi-lane free-flow ORT lanes, and cash-paying drivers are provided adjacent cash toll plaza lanes.”

Other points in the AECOM report are included in Exhibits M and N and letters from Gary Quinlin of CDM Smith, Exhibits P & AA.

55. In the end, Massachusetts implemented AET by setting rates for its former cash customers that are between one and a half and three times higher than for holders of its in-state E-ZPass accounts and then added fees to reimburse for the process of collection, e.g., 60 cents for each letter sent and \$1 for each month’s delay in payment with heavy penalties after three months. The schedule and collection protocol are attached as Exhibit O. These policy decisions in Massachusetts were based on factors not applicable to the Maine Turnpike.

#### **The Elusive Nature of AET data**

56. There is little public information about how much money is lost when agencies convert to AET. To reveal such data is detrimental to the agency’s efforts to persuade motorists to open electronic accounts. If word gets out that nearly half the pay-by-plate motorists will not have to pay, or that the agency can’t read plates during significant storm events, or that motorists can’t or won’t be pursued if registered in certain other jurisdictions, then motorists may refuse or neglect to open an electronic account.

57. At a recent national conference, I heard a toll executive from another state describe the experience of converting a toll road to AET by announcing that the losses were only 5%. When I asked afterward whether it was 5% of the former cash traffic or 5% of gross revenue, the reply was 5% of gross, which turned out to be 50% of cash. The director explained that they had adopted AET for a commuter highway where the electronic penetration rate was at 90%. The authority actually lost half of its cash receipts, an experience similar to that of other agencies whose data is disclosed.

58. Last year, the North Texas Tollway Authority did release its AET revenue losses with unusual candor. Gary Quinlin of CDM Smith reviewed the data and provided the following analysis attached as Exhibit Q:

“In the end, our analysis of the revenue leakage at York and the recommended video surcharge is very similar to that for NTTA. We estimated that a total of 42.2 percent of York video tolls would be uncollected (versus 45 percent for NTTA facilities) and we recommended a 100 percent video toll surcharge to make up for revenue leakage (versus a 90 percent recommended video surcharge for NTTA facilities).

“Perhaps this is just a coincidence, but it does support the fact that the level of revenue leakage and associated video surcharge we are recommending are not outside the limits of what other facilities experience. There certainly are many AET facilities with less than 100 percent video surcharges, but I suspect that in many of those cases, the ETC rates are subsidizing losses incurred by the video transactions or they simply accept that there will be a net loss of revenue (in the case of facilities

that are converting to AET).”

59. Many toll agencies operate on accrual accounting. They include as current revenue the toll that is owed by every motorist who uses the road. In a later accounting period, after all efforts to collect have been exhausted, they prepare an entry to write off all the tolls that are then deemed uncollectible, but this occurs years after the trips that generated the write off. Thus, the losses and the costs are spread out and no longer associated with the period in which they occurred. However, such losses have a significant effect on bonding and loss of half of all cash revenue at the Turnpike would result in unacceptable impacts to the bond rating.

60. Because it is difficult to obtain figures for lost revenue and collection costs from public records of AET agencies when it is counter to their interests to reveal them, a responsible way to obtain good information is to hire a consultant like CDM Smith who is retained by agencies throughout the industry to track revenue and costs from internal data so that toll roads and their bond holders can make rational decisions tailored to the factual circumstances of each highway.

61. In parallel proceedings before the Army Corps of Engineers, the Turnpike has answered a number of questions on these issue posed by Jay Clement. Exhibit T is my letter of January 26, 2017, which contains additional relevant information.

### **Social Policy and Fairness**

62. Based on its biennial national survey of 36,000 households, the Federal Deposit Insurance Corporation (FDIC) estimates that 7% of American households are “unbanked” meaning that they have no account within an FDIC insured institution. An additional 20% are deemed “underbanked” meaning that they depend to some degree on financial products or services outside of the banking system even if they had at least one back account. The top reasons for avoiding banks are lack of enough money to keep an account, privacy concerns, lack of trust in banks, and high or unpredictable account fees. Many, but not all, are poor.

63. In the Summer and Fall of 2012, I oversaw the process by which the Turnpike raised its tolls by 20%, a move required to meet standards imposed by our bond resolutions. Because our capital needs are now being met from current revenue, it is not anticipated that any such increase will again be necessary for decades to come.

64. In preparation for the toll increase, I initiated a public process the scope of which was probably unprecedented in the history of the Turnpike. The need for significant public engagement was particularly pressing because tolls were being raised in the middle of the worst recession since the Great Depression. Both the Board and staff were highly sensitive to the impact of a toll increase on the Maine economy.

65. For public outreach, I presided over six evening hearings in Auburn, Portland, Saco, York, Wells, and Gardiner and participated in still others held by the Turnpike Board during its regular sessions. In the course of these hearings, I met hundreds of people who pay tolls and came to know many who pay cash. While it was our plan to raise rates across the board on E-ZPass as well as cash payers, it was the latter that caused the greatest public attention and vocal concern. Although we made the case that one may always pay cash into the E-ZPass system, that we charge nothing to maintain an account (unlike banks), and that the E-ZPass rate is cheaper, it was the cash rate at the toll plazas that garnered the most attention.

66. Although we had planned to raise barrier cash tolls at the West Gardiner mainline plaza to \$2 and at New Gloucester to \$2.50, in the end we set them at a quarter less, \$1.75 and \$2.25, respectively, in recognition of the socio-economic conditions that we witnessed. For similar

reasons, we held the planned increase at Wells northbound and Gray southbound to 50 cents when a greater increase was justified.

67. In order to achieve a 20% overall increase, we raised the York toll alone by 50% from \$2 to \$3, a move that increased the Turnpike's reliance on a single source for its revenue. It cast a greater burden on the 4.4 million motorists who pay cash at this location each year, including the "unbanked" and "underbanked" motorists who travel through daily. To now raise tolls on cash paying motorists even higher to accommodate AET would be contrary to good social policy.

68. Our Governor has recently proposed to dissolve all of the Turnpike's tolls except for those collected at York when entering and leaving Maine. While there are many impediments to such a plan--and reasons of social policy not to adopt it---it reemphasizes the need to retain at this plaza a full capacity to collect tolls in modes that accommodate all motorists including those who pay cash.

### **The Fleming Report**

69. After it became apparent in 2015 that an ORT site near the old plaza was not feasible, we were informed by the Town that they would mount a technical defense to the Turnpike's project through consulting with Daryl Fleming of eTrans. Throughout the fall and winter of 2015-2016, we pressed the Town to tell us when we might receive such technical information. On February 10, 2016, the Town emailed simultaneously to the Turnpike and to a local news reporter a draft report dated February 7 from Daryl Fleming (Exhibit U). The report was highly critical of the work done by CDM Smith and accused them in 21 separate places (by my count) of bias.

70. In order to contend with press attention to the report, I released the next day Exhibit V my response to a quick reading of the report in time for input to a news article (Exhibit W) written that evening.

71. Under date of March 30, 2016, we later received a final version of Fleming's report (Exhibit X) as re-drafted by Attorney Anderson. On April 1, I prepared notes toward a response attached as Exhibit Y and then released a public narrative response (Exhibit Z). Later on July 22, Gary Quinlin prepared Exhibit AA as the response of CDM Smith.

72. As we understand it, the sole basis for this Maine Department of Environmental Protection ("Department") discretionary public hearing is a finding, under Section 7(B) of Chapter 2 of the Department Rules that the eTrans report by Daryl Fleming constituted "credible conflicting technical information regarding a licensing criterion" such that it "is likely that a hearing will assist the Department in understanding the evidence." We hope that the Turnpike's exhibits and pre-filed testimony are sufficient to resolve this remaining issue.

### **In Closing**

73. We hired CDM Smith because of their access to data and their experience with assisting many agencies in converting to AET. At the outset of their work, we asked them specifically to assume that AET would be implemented at two sites, to create financial models on how it would work, and to provide our staff, our Board, and our bondholders their best judgment on the consequences.

74. Whether to incur those consequences raises significant issues of financial risk, traffic management and diversion, fairness, and public policy. CDM Smith's recent letters of July 22, 2016, and January 16, 2017, appended as Exhibits AA and G, describe the consultant's role and the current challenges being faced by agencies across the nation in making these complex decisions tailored to the special conditions of each road.

75. AET technology is not new, advanced or novel. For E-ZPass collections, it uses the same technology as ORT; but in lieu of cash receipts, it relies on a back office operation to view pictures of license plates, find addresses, and mail bills. These are processes that have been in use for many years in pursuing violators. We are well aware of its shortcomings. It is labor intensive, unreliable, and costly. It may be useful and sometimes necessary in metro settings like Dallas, Manhattan, or Massachusetts where there is no room to collect cash on the highway or where the road has a high volume of local commuters who can be compelled to convert to E-ZPass under sanction of high fines and surcharges; but it is not suitable for the Maine Turnpike as its Board unanimously decided on July 24, 2014.

76. The Turnpike has no plan to abandon cash toll collection, nor any prudent basis for proposing to our bondholders and the public that we do so. The primary goals for the York project are to:

- (1) replace obsolete electronics and toll control systems;
- (2) convert to high speed electronic tolling;
- (3) preserve cash revenue and reduce operating costs in a mode consistent with 18 other sites;
- (4) remedy safety deficiencies; and
- (5) minimize impacts to the state transportation system, abutters and the environment.

77. A modern ORT plaza at Mile 8.8 achieves these goals for the indefinite future. AET does not. Neither would it achieve them to repair the present site. To retrofit the old site by installing modern electronics a few lanes at a time can only be done at great expense; and it would not provide high speed tolling. It would still be the same 10 mph E-ZPass plaza that it is today. That said, in the event the proposed Mile 8.8 site is not permitted by the State of Maine, AET will not be constructed. The Turnpike Board decision to retain cash tolling will stand and be supported by an inefficient rebuild of the old site.

78. Over a ten year span, the Turnpike has carefully considered its options in an orderly process with the help of the best advice available on engineering, finance and the environment. In the past six years of my administration, we have engaged the public at every turn, first in taking a fresh look at whether cashless tolling was feasible and then in determining where best to locate an ORT plaza to meet the Turnpike's purpose and need. Attached as Exhibit S is a record of many of the Turnpike's public engagements on these issues.

79. Limited access highways and the affiliated structures required for their operation are inevitably intrusive. However, they serve an essential purpose in retaining through traffic on a road that is built to serve the needs and demands of a mobile society. In 2014, the average daily traffic volume through the York toll was 44,969 vehicles. In 2016, it rose by 10% to 49,746, a flow equal to 35 vehicles in every minute of every day.

80. The building of a new ORT plaza and closing of the old site will reduce noise and air emissions, increase fuel efficiency, and enhance the productivity of Maine citizens while preserving Turnpike revenue. The convenience and efficiency of paying cash will retain traffic on the Turnpike and reduce congestion on neighboring roadways.

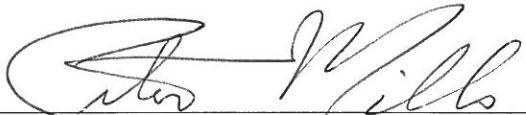
81. We have chosen a new toll site that best minimizes environmental impacts. It is also further from residential property than the present plaza at mile 7.3. We have honored mitigation concerns of the various agencies, including agreed payments to compensate for wetland losses and to enhance protection for wildlife, both near the Turnpike and in other areas of special concern. The timeline and costs associated with this work far exceed those associated with any other project in the Turnpike's recent history.

82. Much of the paved area around the site at mile 7.3 will be reclaimed and the highway recessed

from adjoining wetlands and further away from neighboring homes. Stormwater management for the York Water District above mile 9 and for the area around the present plaza will be improved. Adjacent to the proposed ORT site, we bought a 32.8 acre subdivision from owners who had planned to build eight new homes on a forested slope among wetlands and vernal pools. By taking this land out of residential development, the Turnpike will protect much of its habitat and preserve a backyard buffer welcomed by residential neighbors on Chases Pond Road.

83. The Maine Turnpike has approached this project to do what is necessary to fulfill our mission while balancing the impacts in ways that will leave the land, our neighbors, and the natural environment in a better state than we found it.

Dated April 7, 2017

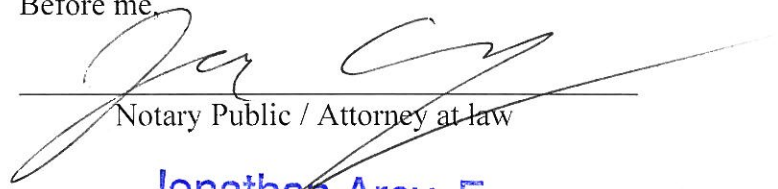
By:   
Peter Mills, Executive Director  
Maine Turnpike Authority

STATE OF MAINE  
CUMBERLAND, ss.

April 7, 2017

Personally appeared the above-named Peter Mills and made oath as to the truth of the foregoing pre-filed testimony.

Before me,

  
Notary Public / Attorney at law

**Jonathan Arey, Esq.**  
**Secretary**  
**Maine Turnpike Authority**

STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN THE MATTER OF

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

PRE-FILED TESTIMONY OF GARY T. QUINLIN  
SENIOR PROJECT MANAGER FOR CDM SMITH

1. I am a Senior Project Manager for CDM Smith with 27 years of experience in transportation finance and toll technology projects in virtually all types of traffic, revenue, and toll studies including traffic and toll revenue forecasting, investment grade studies, toll sensitivity, managed lane and high occupancy toll lane studies, and all electronic toll (AET) studies. CDM Smith and its predecessor firm, Wilbur Smith, have performed investment grade risk analyses in 46 of the 50 states and has supported over 100 billion dollars in toll financing with our reports and studies, more than any other firm doing such work. Exhibit BB includes a resume of my experience.

2. In a competitive selection process, we at CDM Smith were retained by the Maine Turnpike Authority ("Turnpike") to perform an independent impact assessment for possible conversion to Open Road Tolling (ORT) or All Electronic Tolling (AET) at two toll plazas, one at York and the other in Gardiner at the juncture with I-295. The process by which we performed this analysis and our conclusions are described in detail in our 50 page report (MTA Exhibit B) published in April of 2014.

3. Our role is not to make policy recommendations concerning what the client should do in response to our findings. Our undertaking was to prepare models that would allow us to predict the financial and traffic consequences of implementing AET, just as we had done, and have done since, for many clients contemplating a change in tolling protocols. Our Turnpike models prepared for Maine were based on the actual costs, tolling conditions, and traffic environment particular to the Turnpike. I am the author of the report and it contains my true opinions on the matters addressed.

4. In September of 2015, I was asked to review a report by AECOM, traffic engineers who were retained by Massachusetts DOT to address a statewide tolling strategy for the Massachusetts Turnpike. A pertinent portion of the report is contained in MTA Exhibit L. Because of my work, I follow closely developments in many toll agencies throughout the United States including the Massachusetts Turnpike. On the basis of that knowledge and of the report from AECOM, I prepared a brief analysis of the differences in tolling environments between Maine and Massachusetts. My analysis in Exhibit P contains my true opinions on the matters addressed. As reflected in my report, the differences are significant and material; and they are far more favorable for AET to be implemented in Massachusetts than in Maine.

5. In 2016, I was presented with a report from a consulting firm called eTrans that was highly critical of our 2014 report. My comments, which are self-explanatory, are contained in a letter of July 22, 2016, as Turnpike Exhibit AA. The letter contains my true opinions on the matters addressed.

6. In July of 2016, I reviewed an interesting set of reports from the agency known as North Texas Tolling Authority (NTTA) concerning their experience with AET conversion. My analysis of that information is contained in an email of July 22, 2016, as Turnpike Exhibit Q. The email contains my true opinions on the matters addressed.

7. This past winter, I was asked to comment more specifically on the differences in tolling environments between the Turnpike and agencies in other states with which I am familiar. Exhibit G is my letter of January 12, 2017, in which we addressed this question as follows:

“You contacted our firm (CDM Smith) to conduct an objective evaluation of the gross and net revenue impacts of converting the York mainline plaza to either All Electronic Tolling (AET) or Open Road Tolling (ORT). CDM Smith has conducted studies for numerous clients throughout the United States (in Florida, North Carolina, Pennsylvania, Colorado, and Texas, among others) where those studies have led to the successful implementation of AET. In fact, most studies in recent years have resulted in conversion to AET and not ORT.

Quite frankly, at the outset of this study, I assumed that AET would also provide a viable toll collection solution to the problems that currently exist at the York mainline plaza. It is also not surprising that others would have come to the same conclusion. MassPike recently converted to AET, New York City’s MTA bridges and tunnels are converting to AET, the Pennsylvania Turnpike is studying conversion to AET. It would only seem logical that AET would also be a viable alternative at the York mainline.

However, after having conducted our analysis at the York plaza, using the same approach we’ve used on other conversion studies, we estimated that a \$3.00 passenger car video surcharge would be required to offset projected net revenue losses at this location. The \$3.00 surcharge amounts to a doubling of the current passenger car cash toll rate. Based upon the impacts of these measures, previous professional tolling recommendations, and an MTA staff recommendation, the MTA Board of Directors selected ORT over AET at the York mainline.

Various groups and individuals have questioned the Board’s decision given the many benefits of AET (no stopping by any motorist, lower capital costs, etc.) and in light of the fact that AET is being implemented on numerous facilities throughout the United States. Upon analysis, it turns out that the York mainline operating characteristics are rather unique and set it apart from other toll facilities that have been converted to AET. In fact, these same unique factors have led the New Hampshire Department of Transportation to convert its Hampton mainline toll plaza (a 15-minute drive south of the York mainline) to ORT and not AET. In May of 2013, New Hampshire opened its second ORT plaza at Hooksett. Each facility must be evaluated in the context of its particular mix of patrons, operating characteristics, and the larger transportation system it operates in.”

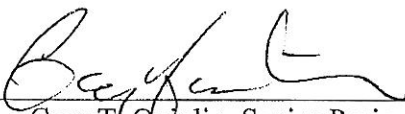
8. Our letter continues by identifying six factors that make it impractical for the Turnpike to adopt an AET system: (1) high cash market share; (2) high proportion of out-of-state cash motorists; (3) high proportion of low frequency users; (4) accessible parallel routes; (5) the



difficulty of converting only part of the integrated system to AET; and (6) greater difficulty in obtaining current addresses from the Maine DMV. The letter contains my true opinions on the matters addressed.

9. Although there is a trend toward converting to AET when it is feasible to do so, most toll road facilities in the United States still accept cash payment. Of the roughly 116 toll roads in the U.S. about 55 percent accept cash payment. About half of those that don't are in Texas, a state where most of the toll roads are short commuter routes with in-state traffic. In terms of toll road miles in the U.S., just under 20 percent operate in AET mode, with over 80 percent accepting cash payment. About half of the AET lane mileage is in Texas, with the remaining 10 percent distributed among the remaining states. Based on our national experience and the number of project-specific risk factors in Maine, it is our professional opinion that the MTA decision to retain cash collection is one that minimizes toll revenue loss and financial risk.

Dated April 7, 2017

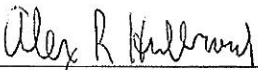
By:   
\_\_\_\_\_  
Gary T. Quinlin, Senior Project Manager  
CDM Smith

STATE OF CONNECTICUT  
NEW HAVEN, ss.

April 7, 2017

Personally appeared the above-named Gary T. Quinlin and made oath as to the truth of the foregoing pre-filed testimony.

Before me,

  
\_\_\_\_\_  
Notary Public / Attorney at law

STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
IN THE MATTER OF

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

PRE-FILED TESTIMONY OF ROLAND A. LAVALLEE, P.E.  
HNTB CORPORATION

**A. Introduction and Qualifications**

My name is Roland A. Lavallee. I hold a Bachelor of Science degree and a Master of Science degree in Civil Engineering. I am licensed as a Professional Engineer in Maine, New Hampshire, Vermont and Massachusetts and as a Professional Land Surveyor in Massachusetts. I have 40 years of professional civil engineering work experience.

I have worked for the HNTB Corporation for 37 years and am a Vice President. My professional work experience is focused in the areas of highway design, toll plaza design, and traffic consulting services to toll highways. I have been involved in general engineering consultant projects at the Maine Turnpike Authority ("Turnpike") for 34 years, and have directed all of HNTB's services for the Turnpike for 28 years.

HNTB Corporation has served as the Turnpike's Consulting Engineers since 1945, which was before the Turnpike was built. HNTB is a leading national toll consultant, having served as the General Engineering Consultant to 37 major toll agencies. HNTB has a team of toll industry experts who deliver a full range of bond resolution and general engineering consultant services. HNTB has planned, financed, designed and constructed half of the nation's toll mileage. This work includes the preparation of investment grade revenue studies and certificates that are relied upon by Wall Street rating agencies and bond houses to issue toll-supported revenue bonds. In all, HNTB has certified more than \$80 billion of bond sales, a figure unmatched by any other consultant. In summary, HNTB is universally recognized as a national expert in tolling, toll revenue projections, toll system design, toll administration, diversion analysis, and toll highway and toll plaza design.

**B. Basic AET Consequences**

Although the specifics of every tolling situation are different, the basic considerations associated with implementing All Electronic Tolling (“AET”) are:

- When roadside cash collection is eliminated with AET, there are a substantial number of former cash customers who do not pay (free riders). The percentage is usually about 50%.<sup>1</sup>
- To make up for the revenue loss from free riders, the fee charged to former cash customers (the pay-by-mail rate) is increased substantially in an attempt to achieve revenue neutrality.<sup>2</sup> Obviously, if the number of paying customers is cut in half but the remainder pay twice as much, the result is revenue neutral.
- Toll increases cause diversion from the toll highway onto other nearby roadways.<sup>3</sup>

While it is possible to argue at the margins about precisely how many free riders there will be, how high the surcharge needs to be, and how bad the impacts of diversion will be, these basic AET truisms are inevitable. In simplest terms, AET means more free riders, increased tolls, and diversion. Open Road Tolling (ORT) does not.

Turnpike Exhibit A, the HNTB study from 2009 elaborates further on these issues. The concerns and factors identified in that report remain valid.

As the Turnpike has demonstrated over years and at great cost, applying these AET truisms to the York toll plaza project is straightforward. Given the number of out-of-staters and occasional users, free riders will be 42% of all former cash customers, with the percentage of free riders from some states reaching an estimated 64%, according to the CDM Smith analysis. This will require a substantial toll surcharge, which will cause diversion to already busy roads in southern York County, negatively impacting ten York County towns.

The Turnpike’s proposed ORT plaza at Mile 8.8 has none of these drawbacks and still delivers the convenience of highway speed electronic tolling that customers now expect. It will be much safer and more efficient than the current plaza. It allows customers who must or want to pay cash to do so fairly and efficiently without a toll increase. And it has minimal environmental impacts, all of which can be appropriately mitigated.

### **C. Traffic Impacts from AET Diversion**

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<sup>1</sup> The precise percentage of free riders will vary depending upon where customers hail from, E-ZPass penetration rates, and other factors. Further, the reasons for nonpayment vary, but they include bad license plate images, collection protocols against seeking payment for small amounts, out-of-date DMV databases, fees and complications from chasing drivers from others states and countries, and people simply ignoring attempts to collect by mail.

<sup>2</sup> The fee increase to former cash customer can take many forms: a toll surcharge, additional processing fees, mailing costs, etc. But the overall effect on former cash customer is usually roughly about the same. Penalizing E-ZPass customers with higher tolls to make up for free riders is not fair and disincentives further E-ZPass penetration.

<sup>3</sup> The extent of diversion depends upon the specifics of area highway network and the amount of the toll.

For the reasons set forth below, and based upon our extensive knowledge of local traffic patterns, it is clear to me that AET would cause unwanted diversion onto already congested state highways in southern York County.

Intuitively, anyone who travels in the southern York County area knows that state roads near the Turnpike are already heavily traveled and that motorists experience congestion, poor levels of service, and gridlock in some places, especially during the peak tourism months of July and August. Obviously, more vehicles on these state roads would make bad traffic even worse.

To demonstrate the scope of this common-sense conclusion, in 2016 the MTA retained HNTB Corporation to quantify and more fully describe the regional traffic impacts that would result from the imposition of AET as a replacement for the York toll plaza. The result is the 20-page memo entitled "*Analysis of Traffic Impacts from AET in York*" by the HNTB Corporation (Elizabeth Roberts, P.E.) dated September 14, 2016, copy attached to the MaineDEP NRPA application as Appendix 2G (electronic page numbers 463-484 of 983), hereinafter referred to as the Traffic Impacts Memo. This work was performed under my charge, I am fully familiar with its contents and methodology, and I share all professional conclusions set forth therein.

This Traffic Impacts Memo was prepared in consultation with engineering experts at the Maine Department of Transportation (MaineDOT). In fact, HNTB based the analysis on the state's traffic model. MaineDOT has reviewed the Traffic Impacts Memo and considers it to be a reasonable engineering analysis of the traffic impacts that would occur from the estimated AET diversion levels.

Based upon their detailed study, CDM Smith estimated that if the York Toll Plaza were converted to AET with the toll surcharge necessary to make up for free riders and diversion, travelers looking to avoid the higher tolls would translate into 3,400 to 5,500 vehicles per day being diverted away from the Turnpike onto various state roads in York County. The HNTB Traffic Impacts Memo studied where this additional traffic will go depending upon the time of year and its impacts.

As set forth in Section 2.1.1 C (2) of the NRPA application (pages 2.9 – 2.11 and electronic page numbers 29-31 of 983), the Traffic Impacts memo include the following conclusions:

- a. Ten municipalities would experience significant impacts to key roadways and intersections: Ogunquit, York, Kittery, Eliot, Wells, South Berwick, Berwick, North Berwick, Sanford, and Kennebunk.
- b. Daily traffic volumes on some state highways in York County could increase by between 5% to 50%. In contrast, the decrease in traffic on the Turnpike would not benefit Turnpike operations but only negatively impact revenue.
- c. On the average weekday during the peak tourism months of July and August:
  - Some increase in traffic volume is expected on Route 1, but much higher increases are expected on other inland highways in York County including Route 236, Route

109/9, and Route 4. Several roadways would see increases of daily summer traffic volumes of between 5% to 50%.

- Travelers on these inland corridors will experience more delays at intersections already identified by MaineDOT as having a relatively poor level of service. Such intersections include the Rt. 236 / Depot Road intersection in Eliot and intersections in downtown South Berwick where Routes 4 and 236 overlap.
- d. In non-peak months:
- More travelers would divert to Route 1, causing more congestion and stop-and-go conditions.
  - Two intersections that already operate at LOS F would see expected delays double or triple. In York, delays at the intersection of the Turnpike Connector and the southbound Turnpike off ramp would increase from 2 minutes to 4.2 - 6.3 minutes. In Ogunquit, delays at the intersection of Route 1 and Shore Road and Beach Street would increase from 1.2 minutes to 3.4 - 5.4 minutes.
  - Summer traffic conditions on Route 1 that are currently experienced in July and August would occur in the shoulder seasons. Significant traffic volume growth will occur in the months of May, June, September, and October. Stated more simply, summer-like traffic will expand into the spring and fall.
- e. The need for signals and intersection improvements at several unsignalized intersections would be accelerated.
- f. Corresponding emissions would increase from the increased traffic volumes and congestion on these state highways.
- g. In short, AET will cause diversion and will make already congested roads worse. The proposed ORT plaza at mile 8.8 allows safe and modern high speed tolling without more free riders, toll increases, or diversion.

#### **D. Opinions as Consulting Engineer**

As noted in Section A above, HNTB Corporation has been the General Consulting Engineer for the Turnpike for over 70 years and has acted as the Turnpike's Traffic Consultant on numerous occasions. As such, HNTB has certain powers and duties that are set forth in the contractual terms by which Turnpike revenue bonds are issued, known as the Bond Resolution.<sup>4</sup> This section sets forth some applicable Bond Resolution requirements and opinions that HNTB would make if AET were pursued. HNTB, acting as the MTA's independent General Consulting Engineer, could not recommend AET given the facts of this case.

##### 1. Bond Resolution Basics

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<sup>4</sup> The General Turnpike Revenue Bond Resolution dated April 18, 1991 consists of thirteen Articles, about 100 Sections, and over 91 single spaced pages.

The Bond Resolution is designed to assure bond holders that the Turnpike revenue stream is secure, which in turn makes Turnpike bonds credit worthy and reduces borrowing costs. The Turnpike's Enabling Act provide that the Bond Resolution has the effect of law. Title 23 MRSA §1965(1)(H) and (M) provides that the Turnpike has the power to "charge and collect fees, fares and tolls for the use of the turnpike and other services made available in connection with the turnpike ... subject to and in accordance with such agreement with bondholders . . ."

The power of the Turnpike to assure revenue and issue bonds is fundamental. It is this power that distinguishes the Turnpike from many other toll agencies that rely on state funding and pledges. Unlike general obligation bonds that are backed by the full faith and credit of the State, Turnpike bonds are backed solely by a pledge of Turnpike revenue. In case of default, Turnpike bond holders have no right to petition the State of Maine or any other government, and have no claim against Turnpike assets. That is, they cannot "foreclose" and take possession of the road. Accordingly, this stream of pledged revenue is so important that it is monitored by an independent Trustee that represents the interests of bondholders. In case of default, the Trustee, now Bangor Savings Bank, can take over Turnpike operations, change toll rates, and take such other action as is necessary to protect the interest of bondholders.

Currently, the Turnpike has about \$385 million in outstanding bond indebtedness with 30 year terms. Simply put, complying with Bond Resolution obligations is a fundamental, long-term requirement for the Turnpike.

## 2. Specific Bond Resolution Provisions Relevant to AET

There are several specific sections of the Bond Resolution that would govern any adoption of AET. They are excerpted in MTA Exhibit F and include the following.

- Section 501. The Pledges Effected by this Resolution, subsection (a). This section pledges all revenues and cash of the Authority to the payment of the principal and interest to the bond holders. This is the fundamental pledge of collateral. It grants rights to the bond holders in all such revenue.
- Section 706. No Impairment of Bondholder Rights under Resolution. This section provides that "none of the Revenues will be used for any purpose other than as provided in this resolution and no . . . action taken by which the rights of Trustee or the Bondholders might be impaired or diminished." The implementation of AET, with its free riders, revenue and toll impacts, would clearly qualify as such an impairment.
- Section 802 Toll Schedules and Revisions, subsection (a) provides, among other things, that "no free vehicular passage will be permitted over the turnpike, or any portion thereof, . . ." with certain narrow and inapplicable exceptions. AET would result in many more free riders, so any implementation of AET would require a revision to the MTA tolling structure.
- Section 802. Toll Schedules and Revisions, subsection (b) spells out the steps that are required to alter toll rates, classifications, and structure. AET would be a major modification of the toll collection system. Accordingly, to implement AET, this section would require that the Turnpike deliver to the Trustee a Certificate based on the recommendations of the

Consulting Engineers and Traffic Consultant that shows any change would meet the “net revenue requirement”. Essentially, this mandates that toll changes will not lose money.

The Bond Resolution also requires that the Consulting Engineers be “an independent engineer or engineering firm or corporation having a nationwide and favorable reputation for skill and experience . . .”, Section 805(a) and that the Traffic Consultant be an “independent traffic consultant of nationally recognized standing or a firm or corporation of nationally recognized standing.” Section 101 Definitions. HNTB is the Consulting Engineer, and qualifies as a Traffic Consultant. Any firm giving a tolling opinion in this matter should be similarly qualified.

These requirements for independent reviews and certificates to the Trustee assure that tolling decisions will not result in a loss of pledged revenue, and that Turnpike tolling decisions are consistent with good tolling practice based on national standards.

### 3. The Consulting Engineers’ Opinion Regarding AET

The Bond Resolution imposes on the Consulting Engineer an independent fiduciary obligation when issuing revenue certificates relating to toll decisions. These certificates are relied upon by bond underwriters and bond investor throughout the nation. Certificates are to be distinguished from general opinions on toll options that are not used to support bond ratings or underwriting.

The Turnpike has made a prudent business and policy decision to implement ORT at York and elsewhere on the existing Turnpike. ORT implements safe and modern highway speed electronic tolling without increasing the number of free riders, without raising tolls, and without diverting traffic. It also has minimal impacts. Because ORT actually increases revenue and does not represent a change of tolling methodology (York will be the 5<sup>th</sup> ORT plaza on the Maine Turnpike), a bond revenue certificate is not required to build an ORT plaza in York.

If the Turnpike had decided to pursue AET at York and asked for a revenue certificate, HNTB would have been in an uncomfortable position. Based on the facts of this case, as demonstrated by HNTB’s previous work and later by CDM Smith as Traffic Consultant and the engineering work by Jacobs Engineering, HNTB in its role as independent Consulting Engineer would not have been able to recommend AET and issue a required revenue certificate without a substantial toll surcharge to compensate for free riders and diversion.

Due to these unnecessary negative impacts, ORT is the only practicable business alternative for the Turnpike to prudently implement modern highway speed tolling at York in compliance with its Bond Resolution. The Turnpike has determined that it must continue to collect cash at York for the foreseeable future, even if that means expending substantial sums –perhaps as much as the cost of the proposed ORT plaza-- to continue operating the existing plaza. In Turnpike Exhibit R, HNTB has estimated what contingent methods would be used and what costs incurred to keep the old plaza operating, as it does today, as a slow speed barrier toll.

The alternative to the proposed ORT plaza at mile 8.8 is not AET, as the Town suggests. The alternative is the continuation of a low-speed, substandard barrier plaza.

While the capital cost of constructing a new ORT plaza and the environmental impacts must be carefully considered, ORT is far more effective in collecting tolls than either AET or the present system. ORT offers the very best of customer service to all classes of traffic including those who pay cash; it encourages through traffic to stay where it belongs on a limited access highway; it operates at significantly reduced cost over any other method; and all the while, it both protects and enhances the Turnpike's revenue. It is not simply the most practicable alternative; it is the only prudent way to provide highway speed tolling.

Dated April 7, 2017

By: *Roland A. Lavallee*  
Roland A. Lavallee, PE

COMMONWEALTH OF MASSACHUSETTS

*Norfolk*, ss.

April 7, 2017

Personally appeared the above-named Roland A. Lavallee and made oath as to the truth of the foregoing pre-filed testimony.

Before me,

*Allen L. O'Connell*  
Notary Public / Attorney at law 4-7-17  
*ETP-15-28-2022*



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
IN THE MATTER OF

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

PRE-FILED TESTIMONY OF DOUGLAS DAVIDSON

CHIEF FINANCIAL OFFICER OF THE MAINE TURNPIKE AUTHORITY

My name is Douglas Davidson. I am the Chief Financial Officer and Treasurer of the Maine Turnpike Authority ("MTA"). I have been employed by the MTA for approximately twenty-three years. I was appointed as Treasurer in 2006 and have been the Chief Financial Officer since 2011. Prior to becoming the CFO, I was Director of Finance and Information Services for ten years; before that, I was the Controller and IT Manager for seven years.

I have a Masters Degree in Business Administration, a Bachelors Degree in Public Accounting, and a Bachelors Degree in Business Administration with a concentration in computer science.

As the Chief Financial Officer, I am required to monitor the financial condition of the Turnpike and externally disclose issues that have a significant potential impact on Turnpike finances. I have been involved in over 15 bond issuances. Annually, I work with all three of the bond rating agencies, who monitor the Turnpike's financial condition and assess its financial risks for investors. The Turnpike is subject to multiple layers of financial oversight including reviews by the Turnpike Board and staff, the General Engineering Consultant, the bond Trustee, bond rating agencies, auditors, the U.S. Securities and Exchange Commission, and the Maine Legislature.

My testimony will outline the legal and financial structure that governs Turnpike financial decision making and to set forth the immediate and broader financial impacts of requiring the Turnpike to implement AET.

As documented in our permit applications, the July 24, 2014 decision by the Turnpike Board of Directors to pursue Open Road Tolling (ORT) after determining that All Electronic Tolling (AET) is not feasible was made after many years of detailed project-specific analyses by multiple experts, extensive public input, and careful consideration. This decision is consistent with two previous votes by two other MTA Boards in 2006 and 2010. In accordance with those votes, ORT is operating on about half of the Maine Turnpike system and is under development on the remainder.

AET cannot be implemented at the York toll plaza without converting the entire Turnpike to AET. The Turnpike cannot treat a non-payment at one toll plaza as a violation and a non-payment at York as a billable transaction. If AET was implemented at York alone, confused drivers would slow or stop in high-speed lanes at York looking for a place to pay cash. This would obviously be very dangerous.

Further, if the entire Turnpike were to be converted to AET, the problems associated are much greater than what is set forth in studies of the York toll plaza. The York cash toll is only \$3.00, and the majority of the cash tolls elsewhere on the Turnpike are \$1.00 side tolls. To collect these relatively small amounts when cash is not paid at the point of service, the MTA has to pay to look up the license plate information from the various state departments of motor vehicles. Many states and all Maritime provinces will not release license plate data for toll collection purposes, meaning the toll is lost. States that will provide addresses often charge a look-up fee. (New Hampshire charges \$3.00). When you add in the cost of printing and mailing the letter to the patron, the cost can be more than \$4.68 to try to collect a \$3 or \$1 toll. Obviously, this makes no financial sense.

As such, AET would cause substantial and unacceptable near-term financial impacts at York and on the entire Turnpike, including reduced revenue or significant toll increases and high rates of uncollectable transactions, especially by out-of-staters and out of country drivers. More broadly, these near-term impacts would undermine confidence in the Turnpike's toll collection system, jeopardize bond ratings, increase borrowing costs, and increase tolls throughout the Turnpike.

## **I. The Legal and Financial Structure That Governs MTA Finances**

### **A. Statutory Framework**

The Turnpike was created by the Maine legislature as an independent toll agency solely funded from its own revenue. Unlike New Hampshire and Massachusetts, the Turnpike is not part of state government and receives no state or federal support. 23 MRSA §1965(1)(H) and (M) grants the Turnpike power to "charge and collect fees, fares and tolls for the use of the turnpike and other services made available in connection with the turnpike ... subject to and in accordance with such agreement with bondholders" and to "issue ... bonds and other evidences of indebtedness or obligations of the authority ... and secure the payment ... by pledge of ... operating revenues of the turnpike."

### **B. Bond Requirements**

The Bond Resolution that protects Turnpike investors, is designated to assure bond holders that the MTA revenue stream is secure, which in turn makes Turnpike bonds credit worthy and govern borrowing costs. Currently, the MTA has about \$386 million in outstanding bond indebtedness, most with 30-year terms. Complying with these investor obligations is a fundamental, long-term requirement for the Turnpike.

There are several sections of the Bond Resolution that would govern any requirement that the MTA adopt AET in York.

- Bond Resolution Section 501 A. "The pledges effected by this resolution". This section pledges all revenues and cash of the Authority to the payment of the principal and interest to the bond holders.
- Bond Resolution Section 706. "No impairment of bond holder rights under the resolution". This section requires that the MTA can only use its revenues in accordance with the resolution and may not take actions that might impair bond holders' rights.
- Bond Resolution Section 802 A provides that "no free vehicular passage will be permitted over the turnpike, or any portion thereof. . . ." with narrow exceptions.
- Bond Resolution Section 802 A thru F. "Toll schedules and revisions". This section spells out the steps that the MTA must follow when changing toll rates, schedules, classifications, and methodologies. The MTA must have a traffic consultant perform a study and present a report that shows that the Authority will meet the "net revenue requirement" in the fiscal year of the requested toll change and in the subsequent five years. Approvals by the General Engineer Consultant and Bond Trustee are required. This section also covers ramifications if toll revenues and/or fee revenues are insufficient to meet the requirements.

## **II. Financial Consequences of AET**

### **A. Near-term Impacts from AET at York**

From 2011-2014, the Turnpike worked with CDM Smith to take another look at the consequences of implementing AET at the York toll plaza. The resulting report (Exhibit B) identified numerous financial impacts most of them arising from the percentage of former cash transactions that will become uncollectable.

- Overall, 42% of all non EZPass transactions will be uncollectable.
- The uncollectable rate for Maine vehicles is lowest at 29%.
- The uncollectable rate for NH and MA vehicles is 39%, due to reciprocity agreements.
- The uncollectable rates for all other states and countries is 64%.
- Even when one adds EZPass customers back into the analysis, the percentage of uncollectable transactions is substantial - almost 10%. That is, 1 in 10 of all transactions in York will be uncollectable.

If implemented, these uncollectable rates would have substantial policy implications including the eventual erosion of public trust in the Turnpike's toll system. As the CDM Smith report sets forth, to avoid such losses, the Turnpike would need to raise tolls by including a surcharge on non EZPass

customers at York. To mitigate most of the financial hit from AET, the Turnpike would need to impose service charges, fees, and fines.

It is difficult to learn what tolling entities are actually losing to uncollectable plate tolls due to Governmental Accrual accounting and financial reporting employed. Most tolling entities include as current revenue the toll that is owed by every motorist who uses the road. In a later accounting period, after all efforts to collect have been exhausted, they prepare an entry to write off all the tolls that are then deemed uncollectible; but this occurs years after the trips that generated the write off. Thus, the losses and the costs are spread out and are no longer associated with the period in which they occurred.

It is difficult to obtain figures for lost revenue and collection costs from public records of AET agencies because it is so contrary to their interests to reveal them. A responsible way to obtain good information is to hire a consultant like CDM Smith, which has experience with agencies throughout the industry and has access to track revenue and costs from internal data. This allows toll agencies to make rational decisions tailored to their specific circumstances.

#### B. Broader Financial Consequences

The Turnpike simply cannot accept toll revenue losses. As noted above, Turnpike revenue is pledged, and AET losses would trigger financial disclosures, the need to redesign the toll system, traffic and revenue analysis, a downgrade of Turnpike bond rating, higher future borrowing costs, higher tolls, and, depending upon the result of the new toll structure, a scaling back of capital projects in the Turnpike's 30-year plan. More specifically, these broader financial consequences include the following:

- AET would require an extensive and expensive traffic and revenue analysis. All investment grade analyses cost over \$100,000, even when there is no change in the toll rates or structure. Analyses that include changes to toll rates often cost in the \$250,000 range. An analysis that includes a dramatic change to toll methodology, like AET, would need to be implemented throughout the existing Turnpike (not just at York) and has inherently higher risk. It would likely cost in the range of \$500,000 to \$750,000.
- AET carries inherently higher risk, which would likely trigger a downgrade of the ratings on Turnpike bonds. A downgrade of two levels could reasonably be expected. Bond rating agencies have specifically inquired about these permitting proceedings and asked specifically whether the MTA has any plans to implement AET.
- A downgrade would increase interest costs by 1.25%
- The MTA's 30-year plan currently calls for \$410 million in proposed borrowing. The increase in interest rates estimated above could cost the MTA an estimated \$85 to \$125 million in additional costs over the life of those proposed bonds.
- These additional costs would need to be covered. Under the Bond Resolution, the Turnpike cannot simply stop maintaining its facilities, as doing so impacts revenue. Therefore, AET would drive future toll increases on all Turnpike customers, not just those in York. The

Turnpike's 30-year financial plan does not currently call for any toll increases until 2031. This would likely move that timetable up by several years, perhaps as early as 2022.

- This would increase transportation costs for Maine businesses and citizens, which would have a negative impact Maine's overall economy.

### **III. Conclusions**

For all the reasons that have been extensively documented previously, the MTA made a prudent business and policy decision to pursue Open Road Tolling (ORT). In fact, ORT is the only prudent way to implement highway speed tolling at York. The MTA is the entity that has the authority, responsibility, and expertise to make that decision, and we must live with its consequences.

The MTA and its customers need a single consistent tolling methodology on the entire Turnpike. Attempting to implement AET at York alone is not feasible. It would cause customer confusion, would be dangerous as drivers slow or stop looking for a way to pay cash, and makes no financial sense given the high costs of collection in comparison to the Turnpike's low toll amounts. Therefore, if our permits for the proposed ORT plaza are denied, we would be forced to continue to collect cash with a substandard, low speed barrier plaza at York.

All Turnpike customers and the State of Maine deserve and expect highway speed tolling. ORT is the only practicable and prudent way to provide it. ORT is being implemented throughout the entire Turnpike; York will be the MTA's fifth ORT plaza. The proposed York ORT plaza will have huge safety, mobility, financial, and environmental benefits, and has only minimal environmental impacts. I have not seen any credible conflicting technical information. The State, the MTA, and all Turnpike travelers will be better off after it is built.

Dated April 7, 2017

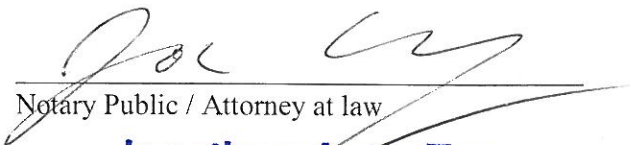
By:   
Douglass Davidson, Chief Financial Officer  
Maine Turnpike Authority

STATE OF MAINE  
CUMBERLAND, ss.

April 7, 2017

Personally appeared the above-named Peter Mills and made oath as to the truth of the foregoing pre-filed testimony.

Before me,

  
Notary Public / Attorney at law  
**Jonathan Arey, Esq.**  
**Secretary**  
**Maine Turnpike Authority**

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
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	)	PERMIT FOR CONSTRUCTION OF A NEW
	)	TOLL PLAZA LOCATED IN YORK, MAINE

LIST OF EXHIBITS SUBMITTED BY THE MAINE TURNPIKE AUTHORITY

- A. MTA Southern Toll Plaza Initial AET Feasibility Review, HNTB 2/20/2009
- B. ORT/AET Impact Analysis 4/14/14 CDM Smith (Quinlin) (pages are dated 3/18/14)
- C. MTA Staff Report (Mills) 4/30/14
- D. MTA Board Minutes & Order of 7/24/14 to retain cash
- E. Description of MTA's toll protocols (Mills) 3/3/17
  
- F. Extracts from Turnpike bond resolution
- G. Quinlin letter on AET v ORT Conversion Variables for York 1/12/17
  
- H. Letter from York Board of Selectmen 5/20/14
- I. Jacobs's alternatives matrix for siting
- J. MTA Staff's site recommendation (Mills) 11/16/15
- K. Board Minutes & Order of 11/19/15 for siting at mile 8.8
  
- L. AECOM Feasibility of a Statewide Tolling Strategy for MA (pages 1-5) July 2012
- M. TollRoadsNews article on Massachusetts AET conversion 8/19/13
- N. TollRoadsNews article on Allston interchange 10/23/13
- O. Massachusetts current toll schedules (March 2017)
- P. Quinlin comments on Massachusetts and AECOM report 9/9/15
- Q. Quinlin email comments on N. Texas Toll Authority AET data 7/22/16
  
- R. HNTB Tech memo on Conceptual Replacement Options for Existing Site (Lavallee) 1/26/17
- S. Record of MTA public engagement 11/8/16
- T. MTA (Mills) Answers to Questions from ACOE 1/26/17
  
- U. Fleming (eTrans) draft report of 2/7/16
- V. Turnpike Comments of 2/11/16 on the Fleming draft of 2/7/16
- W. Seacoast On-line article of 2/11/16
- X. Fleming report final draft of 3/30/16
- Y. Mills 4/1/16 review of Fleming report of 3/30/16
- Z. Mills 4/2/16 narrative response to Fleming report
- AA. Quinlin response to Fleming Report 7/22/16
  
- BB. Resumes of Mills, Mallar and Quinlin