Memorandum

To: Maine Turnpike Authority: Daniel Wathen, Chair, James Cloutier, Vice Chair, Gerard Conley, John Dority, Robert Stone, Freeman Goodrich, Karen Doyle, MaineDOT

From: MTA Staff: Peter Mills, Executive Director, Doug Davidson, Chief Financial Officer, Peter Merfeld, P.E., Chief Operating Officer, Bruce Van Note, PLS, Esq., Dir, Policy and Planning, Ralph Norwood, P.E., Project Manager, Sara Zografos, Planning and Permitting

Re: Staff Recommendation for the Preferred Site for the New Toll Plaza in York

Date: November 16, 2015

Before the Board is the question of choosing a preferred alternative for permitting and final design of a replacement toll plaza at York. Jacobs Engineering has recommended the site near Mile 8.8, a recommendation that is consistent with the previous analysis by HNTB, the MTA's General Engineering Consultant.

MTA staff recommends that the Board select the Mile 8.8 site as its preferred alternative. It is one of the safest sites; it meets all applicable design standards and guidelines; it has low environmental impacts. It has limited effect on very few abutters, except for those who will benefit from closing the existing plaza at Mile 7.3. It will be straightforward to construct and will impose few challenges for travelers or toll collectors. It will cost less to build and will minimize revenue losses during construction.

Background

The York Toll Plaza, the gateway to Maine, is one of the most important elements of transportation infrastructure in the State. It generates about $56 million in tolls per year (about 45% of all MTA revenue) and is a central reason why two-thirds of all MTA tolls are paid by out-of-staters.

The existing plaza is old and must be replaced. Originally designed in the 1960's as a temporary barrier plaza for all vehicles to stop, take tickets and pay tolls, its approaches are sinking into clay soils. It has a leaking tunnel full of electrical components. Its present suite of outdated toll equipment is held together with used parts. The plaza is located on a curve at the bottom of a hill near an interchange and an overpass. This raises safety concerns and contributes to an environment of unnecessary noise. It is located on poor soils, surrounded by wetlands. It does not provide highway speed electronic tolling that travelers and freight haulers now expect and deserve. The MTA has been seeking to deliver this project for over ten years.

In the early phase of MTA's studies, extensive expert analysis by HNTB supported replacing the current barrier plaza with a new open road toll at any of several locations north of the current plaza, including one at Mile 8.7.

In 2011, MTA decided to take a fresh look at critical project issues such as toll collection systems (ORT vs. AET), plaza sizing, and plaza locations. MTA retained CDM Smith, a nationally known toll consultant, to analyze the impact and consequences of implementing AET.

On July 24, 2014, after three years of study, the Board accepted the recommendation of staff that AET is not feasible on the Maine Turnpike. Nor would it be in the best interests of Turnpike users. Among other things, it would require non E-ZPass toll rates at York initially to double from $3 to $6 to compensate for lost revenue from toll violations and from diversion, estimated at 3,400 to 5,500 vehicles per day. This would further snarl already congested roads like Route 1.

In August 2014, MTA retained Jacobs, another experienced engineering consultant, to obtain more detailed environmental information, reconsider ORT plaza sizing, take a fresh look at options near the current plaza at Mile 7.3, and analyze other plaza locations. In June 2015, after a detailed look at the current plaza site, Jacobs recommended focusing on Mile 8.8 for further evaluation.

Throughout the years, MTA staff has fully engaged the Town of York and its residents. Since the project was first proposed over 10 years ago, MTA staff has met with York officials and residents dozens of times, including about 14 times since Jacobs was retained. On September 3, 2015, 21 York residents expressed concerns at the Board's regular meeting. In a separate Memorandum to the MTA Board, MTA staff has responded to each comment. MTA will continue to listen to concerns arising in York, including those who will benefit from closure of the old plaza at Mile 7.3.

Although local opinions are important, MTA's legal and fiduciary obligations extend to all 1.3 million residents of Maine and to Turnpike customers who make 62 million Turnpike trips each year. It is the Turnpike's obligation to seek a site that is safe, affordable, and least disruptive to travelers, abutters, toll collectors, and the environment.

Mile 8.8 is that site. MTA staff concur with previous expert analyses and recommendations by Jacobs and HNTB, and recommend that the Board do so as well.

Reasons for Recommending the Mile 8.8 Site

Voluminous technical memos, reports, maps, and charts support the selection of the Mile 8.8 site as a preferred alternative. Perhaps the most useful document is the final Evaluation Matrix and its supporting Technical Memorandum dated October 13, 2015, prepared by Jacobs.

MTA staff recommends the Mile 8.8 site because it will be safe and will have low environmental impact with negligible effect on abutters. It will be more straightforward to construct, will reduce impacts on travelers and toll collectors, and will cost less than other sites.

1. Overview of All Sites. The Evaluation Matrix and supporting Technical Memorandum describe commonly accepted criteria for such an alternatives analysis. The matrix identifies 25 evaluation criteria grouped in five categories: (a) Engineering/Safety, (b) Environmental, (c) Abutter Impacts, (d) Logistics During Construction, and (e) Cost/Financial. Each factor is defined. To provide a convenient comparison, relative ratings are color coded. Although not

determinative, a summary of these site suitability rankings for each of the five sites analyzed by Jacobs is illustrative.

York Toll Plaza Replacement Project
Summary of Site Suitability Rankings
From Jacobs matrix

Approximate Location	# Green Ratings	# Yellow Ratings	# Red Ratings	Comment
MM 7.3	4	13	8	Near existing plaza
MM 8.1	11	13	1	
MM 8.8	15	10	0	Recommended for further evaluation
MM 10.0	11	11	3	
MM 13.2	15	7	3	

Two observations are apparent from this chart. First, the Mile 8.8 site has the highest number of green ratings (tied with one other site) and has no red ratings. Second, the Mile 7.3 site – with 4 green and 8 red ratings – is inferior to any of the other four.

2. Engineering/Safety. Mile 8.8 is one of the safest sites for a new ORT plaza. It meets national engineering standards and guidelines and is consistent with the Turnpike's obligations under environmental rules. There will be less braking, weaving, and confusion at Mile 8.8, and thus fewer accidents and less noise. All lanes will be used more fully, thus easing congestion. Regarding engineering and safety considerations as a whole, the bottom line is this: Professional Civil Engineers having substantial experience with such facilities would all agree that an ORT plaza located on a straight section of highway at the crest of a hill away from interchanges and overpasses will be safer than an ORT plaza located on a curve, at the bottom of a hill, near an interchange and overpass, if all other factors are equal. Other sites also have favorable engineering or safety ratings, but they have other less desirable impacts - such as the displacement of a home.

3. Environmental. The Mile 8.8 site has low environmental impact. Applying the conceptual plaza design to field mapping of wetlands and other environmental features yields anticipated impacts to only one acre of wetland, two vernal pools, and 80 feet of stream. These are low for a project of this significance, and will likely be less after mitigation during final design. Environmental rules require regulators to select the least environmentally damaging practicable alternative (LEDPA). MTA staff firmly believe that Mile 8.8 is that site.

4. Abutter Impacts. Although questions from people who live near any site are to be expected, the reality is that impacts to abutters and nearby residents at the Mile 8.8 site are the lowest of

all the five sites examined. The site will not displace any homes. There are only four houses within 1,000 feet of the project limit lines and two of these are at the outer edge of this perimeter. There is one house to the east in the Whippoorwhill subdivision and three houses to the west on the Chase's Pond side.

Although questions from nearby residents are expected, it is important to consider net local impacts. Moving the plaza to Mile 8.8 will lead to demolition of the existing plaza at Mile 7.3. Vehicles will no longer need to brake for a plaza there, nor accelerate as they depart. An ORT plaza, by design, produces less noise and fewer emissions. The result will be fewer impacts overall and fewer residents affected.

5. Logistics During Construction. The project at Mile 8.8 will be straightforward to build and take less time. Like most of the sites considered – other than Mile 7.3 and possibly Mile 8.1 – construction phasing is easier and disruption to travelers and toll collectors will be less because the existing 3 lanes of highway will essentially become the ORT lanes. Soils are more favorable. Traffic from the existing toll booth will not interfere with construction.

6. Costs / Financial. Jacobs's current estimate of the capital cost for Mile 8.8 is $40.8 million, the second lowest of the five sites considered. That estimate includes the cost of demolishing the existing plaza and of narrowing the highway near Mile 7.3. But it does not include the cost of property acquisition to allow "apples-to-apples" comparisons among all sites. (The cost of acquiring the Morrison property was $925,000.) Although the Turnpike must develop all capital projects with a sensitivity to cost, cost alone is not a primary consideration in recommending the site at Mile 8.8. Even if the cost were significantly higher, its safety, environmental, logistical, and other benefits make it far superior to other choices.

   Mile 8.8 and all sites considered – other than Mile 7.3 - will cause minimal loss of toll revenue during construction. Mile 8.8 and all the alternative sites considered – other than Mile 7.3 – are estimated to have similar life cycle and operational costs going forward.

7. Mile 8.8 vs. Mile 7.3 Comparison. Despite the weight and depth of the information outlined above, certain York citizens continue to advocate for building at Mile 7.3 and argue that the MTA Board must evaluate how the two sites compare with each other. By any objective comparison Mile 7.3 is inferior to the Mile 8.8 site and to any of the other sites. More study will not alter that conclusion.

From Jacobs matrix

York Toll Plaza Replacement Project
Comparison of MM 8.8 and MM 7.3 Sites

Evaluation Factor	Jacobs Matrix Col. #	MM 8.8*	MM 7.3	Comments
Engineering / Safety				
Horizontal Alignment	1	On-straight	On curve	MM 8.8 is superior to MM 7.3 from an engineering/safety perspective.
Vertical Align. - Cash Plaza on Crest	2	Good	Average	
Vertical Align. - Approach Grades	2	Average	Poor	
Sight Distance	3	Good	Average	
Separation from Interchange (> 1 mile)	4	Yes	No	
Historical Crash Data	5	Non HCL	HCL	
Geotechnical (soils)	6	Ledge	Clay	
Environmental				
Total Wetland Impact (acres)	7	1.0	5.5	MM 7.3 would impact over 5 times more wetlands.
Wetland Relative Function and Value	9	Average	High	Wetlands at MM 7.3 are higher value.
Stream Impacts (feet)	10	80	360	
Vernal Pool Impact - #	11	2	1	
Vernal Pools of DEP Significance - #	12	1	0	
FEMA Floodplain Impacts (acres)	13	0.3	3.0	
# Potential E/T Species Habitat Impacts	15	3	1	Long-eared bat potentially at all sites.
Abutter Impacts				
Potential R/W Impacts (acres)	16	0.3	0.1	Either option requires minimal land acquisition.
Houses Within 1000 ft	18	4	47	No houses displaced by either option.
Logistics During Construction				
Constructability	19	Conventional	Difficult	MM 8.8 would take significantly less time to build.
Safety of Toll Collectors	20	No Impacts	Caution	Extra precautions required to assure safety.
Traveler Impacts	21	Minor	Intermediate	Substantial disruption to travelers at MM 7.3.
Cost / Financial				
Initial Capital Cost	22	$40.8	$60.4	MM 8.8 would cost almost $20M less.
Revenue Loss During Construction	23	Minimal	Significant	Diversion due to traveler disruption.
Life Cycle Cost / Operations	24	Typical	Not Typical	Settlement not eliminated, more frequent paving.

*Recommended for further design and analysis.

The Mile 7.3 site is inferior in every category.

a) Engineering/Safety. Mile 7.3 is located at the bottom of a hill, on a curve, near an interchange and an overpass on poor soils surrounded by wetland. It was built in the 1960's as a temporary barrier plaza at which all vehicles stopped to take tickets and pay tolls in cash. At that time, high speed tolling, current design standards, and today's environmental rules did not exist. If they had, it would not have been built where it is today.

   The new site selected should meet today's national engineering standards and guidelines, consistent with MTA's obligations under environmental rules. The Mile 7.3 site does not do so. The Mile 8.8 site will.

b) Environmental. Mile 7.3 would impact about 5 times more wetlands and streams. The wetlands at Mile 7.3 have higher function and value than those at Mile 8.8. Environmental rules require the selection of the least environmentally damaging practicable alternative (LEDPA).

c) Abutter Impacts. There are 47 houses within 1,000 feet of the project limit of the plaza at Mile 7.3. There are far fewer houses near other sites. There are only four houses within 1000' of the Mile 8.8 project limits and two of these are at the outer fringe of that perimeter.

d) Logistics During Construction. Construction phasing, maintaining toll collection, and shoring of potentially unstable soils at the Mile 7.3 site would make construction significantly more complicated there. It will take longer and cause more disruption of traffic and the surrounding terrain.

e) Costs/Financial. The estimated capital cost of construction at Mile 7.3 is $60.4 million, as much as 50% more than other alternatives. Mile 7.3 is projected to cause toll revenue losses due to diversion estimated at one to two million dollars per year. The long term cost of maintaining an ORT plaza at Mile 7.3 will be higher than other sites because some continued settlement is anticipated despite soil stabilization. This would likely require more frequent re-paving cycles.

8. All Factors Point Toward Mile 8.8. The site alternatives analysis does not present a significant conflict among the factor categories as sometimes happens with other projects. Mile 8.8 is one of the safest alternatives and has relatively low environmental impact. It is estimated to cost less and it compares well on other factors.

For these reasons, MTA staff recommends that the Board select the Mile 8.8 site for the replacement ORT plaza in York for the purpose of applying for permits and moving to final design.

Turnpike staff remain committed to working with all interested parties, including York officials and nearby residents, in a fair, open and respectful manner toward the goal of replacing the current deteriorating and outdated barrier toll with a modern ORT plaza that is safer, affordable, and less disruptive to travelers, abutters, toll collectors, and the environment.