

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 ELIZABETH ROBERTS, P.E.

HNTB CORPORATION

1. I graduated from Purdue University in 1995 with a Bachelor of Science degree in Civil Engineering and then obtained my Masters in Civil Engineering from Purdue in 1997. For the past 20 years I have been employed in the field of transportation planning and traffic analysis. I have designed, created and worked with traffic demand models, traffic signal designs, origin and destination surveys, GIS planning, diversion studies, traffic impact studies, traffic management projects, and other transportation studies of many and varied types.

2. I have worked for agencies and consulting engineers in Texas, Kentucky, Massachusetts, New Hampshire and Maine. For the past ten years, I have worked from the Westbrook office of HNTB on projects for the Departments of Transportation in Maine, New Hampshire and Massachusetts, for the Maine Turnpike Authority, and for various other regional agencies.

3. In 2016, I was asked to perform an impact analysis to determine how certain traffic if diverted from the Maine Turnpike would affect other nearby roads, streets and intersections. Our analysis was based on diversion estimates derived from a CDM Smith study published in April of 2014. I understand that it is marked in these proceedings as Turnpike Exhibit B.

4. One of the purposes of the CDM Smith study was to determine the effect of adopting All Electronic Tolling (AET) at York and Gardiner in the year 2015. In that year, the diversion caused by opening an AET toll system at York was estimated in a range between 3400 and 5500 vehicles per day. The two figures were based on the difference between the 50th and the 90th percentile confidence interval levels as projected by the model. In this context, a 50th percentile confidence interval level means that the level of diversion is as likely to be less than the estimate as it is to be more. A 90th percentile confidence interval level means that there is a 10% chance that the actual diversion could be greater than the estimate

5. Our study was not itself a diversion analysis. Our purpose was to assess the impact risks to non-interstate highways from the traffic diversions predicted to result from implementing AET. In our impact analysis we evaluated a range of estimates with a reasonable range of possible outcomes. Because the year 2015 had already passed when we were asked to perform the analysis, we used the CDM Smith traffic diversion tables to start with a range projected by the model for 2019. This yielded an estimated diversion range of between 2515 and 4700 vehicles per day, a lower and more conservative range than would have been used for an assessment in 2014 for a start year in 2015.

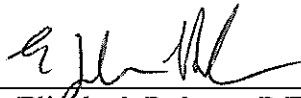
6. While the diversion numbers represent only between 3.7% and 6.9% of traffic on this section of the Maine Turnpike, they do represent both a substantial loss of toll revenue and a significant impact to nearby highways that have capacities much lower than that of the Turnpike. The traffic diverted onto non-interstate roads would cause traffic levels to rise between 5 and 50% in many locations on Routes 1, 236, 109/9, 4. The details of our impact analysis are contained in our report of September 14, 2016, that is attached and marked in these proceedings as Turnpike Exhibit GG.

7. Other key findings include:

- 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) On an average weekday during the peak tourism months of July and August, an increase in traffic volume is expected on Route 1, but the diversion would cause higher increases on other inland highways including Route 236, Route 109/9, and Route 4. Travelers would 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.
- c) In non-peak months, more travelers would divert to Route 1, causing more congestion and stop-and-go conditions.

- d) Two intersections that already operate at Level of Service F would see expected delays double or triple. These are the intersection of the Turnpike Connector and the southbound Turnpike off ramp in York, and the intersection of Route 1 with Shore Road and Beach Street in Ogunquit.
- e) Summer traffic conditions on Route 1 that are currently experienced in July and August would occur in the shoulder seasons during May, June, September, and October. Summer-like traffic will expand into the spring and fall.
- f) The need for signal and intersection improvements at several intersections would be accelerated.
- g) Increased vehicle emissions would result from the increased traffic volumes and congestion on these state and local highways.

Dated May 19, 2017

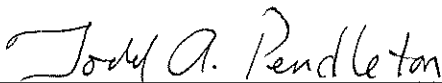
By:   
Elizabeth Roberts, P.E.  
HNTB Corporation

STATE OF MAINE  
CUMBERLAND, ss.

May 19, 2017

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

Before me,

  
Notary Public / Attorney at law  
Todd A. Pendleton  
Notary Public, State of Maine  
Commission Expires August 24, 2018