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Sent: Sun 11/30/2008 7:25 PM

To: [tzbsite@dot.state.ny.us](mailto:tzbsite@dot.state.ny.us)

Cc:

Subject: Comments on September 2008 Drafts, Alternatives Analysis and Transit Mode Selection Report, Tappan Zee Bridge

Attachments:

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November 29, 2008

Michael P. Anderson, P.E.

New York State Department of Transportation

Tappan Zee Bridge/I-287 Corridor Project Director

660 White Plains Road, Suite 340

Tarrytown, NY 10591

RE: Tappan Zee Bridge/I-287 Environmental Review

Dear Mr. Anderson,

I am writing to provide you with comments by the closing date of December 1, 2008 on the following two documents:

1. Alternatives Analysis for Rehabilitation or Replacement of the Tappan Zee Bridge, September 2008 Draft.
2. Transit Mode Selection Report, September 2008 Draft

The major comments are:

## 1. Alternatives Analysis.

(a) Section 2.3.4, Table 2-1, Design Criteria:

(1) Element 9 Vertical Clearances:

The proposed condition on the TZB states: "17' 9" over CRT (TOFC) Min"

In order to accommodate potential future rail freight in this corridor, which will be built to last 100 years, I recommend that the design criteria be changed to at least 23'-0", which is the recommended standard in the Manual for Railway Engineering of the American Railway Engineering and Maintenance of Way Association (AREMA).

(2) Element 12 Structural Capacity:

The proposed condition on the TZB states: "Rail – 65,000 lb axle load"

The proposed condition would only support movement of 263,000 pound gross weight railcars, and it is insufficient to carry the current industry standard railcar of 286,000 pounds gross weight.

This bridge will be built to last 100 years. In order to accommodate future potential rail freight in this corridor, I recommend that the design criteria be changed to Cooper E-80 loading, which is the AREMA recommended standard. The Cooper E-80 loading will accommodate both the current industry standard 286,000 pound gross weight railcar as well as the new 315,000 pound gross weight railcar.

(3) Element 16 Navigation Clearance:

The proposed condition on the TZB states: "139 ft minimum, 155 ft desirable"

The navigation clearance element refers to the vertical clearance ("air draft") at the shipping channel in the Hudson River, above Mean High Water, 8 foot Stage, as measured at Albany, NY. As this bridge structure will be over the Hudson River for 100 years, I recommend that the design criteria be changed to 155 foot minimum, which is the Bridge Guide Clearance for the Hudson River from Irvington to Newburg, as established by the United States Coast Guard. In addition, I recommend that an Element be added for Horizontal Navigation Clearance, and that the horizontal clearance of 1500 feet, as contained in the USCG Bridge Guide Clearance, be added to the design criteria.

## 2. Transit Mode Selection Report

(a) Section 4.1 East-of-Hudson and West-of-Hudson Commuter Rail Service

Metro North Railroad's Commuter Rail Service does not exist in a vacuum, as generally depicted in the map and the text of this section. I recommend that modifications to the map and text be made to acknowledge the freight operating rights of CSXT and NS, as well as the trackage rights of NYSW, CPR and PW on MNR Commuter Rail Lines, as well as to show the connectivity of MNR's East and West of Hudson Commuter Rail Lines to the interstate rail freight network beyond Port Jervis, Poughkeepsie and New Haven and to the Amtrak rail passenger network beyond Poughkeepsie and New Haven. The suggested map and text modifications should show the regional and interstate nature of a new railroad crossing of the Hudson River, just 25 miles north of New York City.

(b) Section 4.1.2 Key Vehicle Concepts

(1) The following statement in the report is false: "For example, double-stack freight rail cannot operate with EMUs [Electric Multiple Unit commuter rail vehicles] because clearance is not feasible under the catenary."

In the AREMA Manual for Railway Engineering, there is no clearance restriction against operation of double-stack container cars, or any freight cars, under catenary. The ability to operate freight cars under catenary depends upon the voltage of the

catenary wire and the distance from the top of the freight car to the catenary wire. AREMA provides design guidance for vertical clearance under catenary for up to 50,000 volts AC. I recommend that the proposed design criteria for the TZB be changed to provide sufficient vertical clearance to allow future electrification of the rail line with overhead catenary.

(2) With respect to the discussion of dual-mode locomotives, the following statement in the report is misleading at best and false at worst: "...the combination of diesel with overhead catenary is not proven technology at this time."

Both New Jersey Transit and AMT, the commuter rail agency in Montreal, Quebec, have dual-mode (diesel and electric catenary) locomotives on-order from Bombardier. This dual-mode locomotive will be used by NJT to operate commuter trains through the new ARC tunnel into the new 34<sup>th</sup> Street Station.

(3) With respect to the discussion of electric locomotives, the following statement in the report is false: "...they are not mixed with freight rail because the catenary wire would interfere with double –stack freight cars (not a problem with third rail)."

With respect to the first part of this statement, see the discussion concerning AREMA standards above. With respect to the second part of the statement, the Transportation Technology Center, Inc. (TTCI), in Pueblo, Colorado, a subsidiary of the Association of American Railroads (AAR) will confirm that AAR Clearance Plate "H" for double-stack container cars does not clear third rail electrification.

(c) Section 4.2.1 Technology:

The report makes the statement: "There is a possibility that bi-level passenger cars can be developed that are compatible with the Park Avenue tunnel; if this possibility is realized, such cars would then be usable in this corridor as well."

Amtrak P32AC-DM dual-mode locomotives, MNR P32AC-DM dual-mode locomotives, and the NJT Bombardier multi-level commuter cars are all Amtrak Equipment Dimension Code "1". As MNR allows operation of both Amtrak and MNR P32AC-DM locomotives through the Park Avenue Tunnel into Grand Central Terminal, then NJT Bombardier multi-level cars should also be able to be operated through the Park Avenue Tunnel into Grand Central Terminal. Accordingly, the use of the bi-level Bombardier commuter coaches into GCT should be investigated and a test movement requested through the MNR VP-Operations.

(d) Section 4.3.1 Alternative 4A:

The report makes the statement: "The track would be electrified from Suffern to Port Chester and to the Hudson Line via third rail."

Electrification with third rail will impose a clearance restriction which would not otherwise exist. As a result, it would restrict the potential future movement of freight across the Hudson River. Double-stack railcars (AAR Plate "H") and high-capacity multilevel auto rack cars (AAR Plate "K") would be prohibited for movement because of interference with the third rail in the lower quadrant of the clearance envelope. As the Tappan Zee Line will be a connection to the national rail network and will be a crossing of the Hudson River, a major impediment to east-west movement between New York State and New England, NYSDOT should not intentionally create a mobility obstruction to the future movement of freight.

The line could be electrified with catenary and Metro North Railroad could operate the line with the new M-8 commuter rail cars, which can draw power from either catenary or third rail. Track maintenance under catenary is significantly less complicated than track maintenance in third rail electrified territory. If the line is not electrified, MNR could operate the service with their existing design dual-mode locomotives and coaches, as they do on the Hudson Line to Poughkeepsie.

Finally, I recommend that NYSDOT retain ownership of the Tappan Zee Rail Line, including the new bridge over the Hudson River. NYSDOT can lease the line to MNR for operation and maintenance of the track and signal system (and electric power system, if constructed). This would preserve the right of NYSDOT at some point in the future to select a designated freight operator, in conjunction with the Surface Transportation Board, to provide rail freight service from the Southern Tier across the new Tappan Zee Bridge and into New York City and Long Island.

If you have any questions, please feel free to contact me by phone or email as listed above.

Very truly yours,

/s/

John V. Madden, P.E.

Lieutenant Colonel, Transportation Corps, US Army (Retired)

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CC: Distribution List Attached

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