



Monday, February 07, 2011

Mr. Bimal Devkota
Division Chief
Baltimore City Department of Transportation
7 East Redwood Street – 2nd Floor
Baltimore, Maryland 21202

Attention: Mr. Omar Davis

Reference: Bridge No. BC 8022
Fort Avenue over CSXT

Dear Mr. Davis

STV Incorporated (STV) has performed the visual, hands-on inspections of the referenced bridge for the City during the last two (2) NBIP cycles – 2007 thru 2009 and 2009 thru 2011. Our most recent inspection of the structure was performed on September 28, 2010. The observed and reported overall condition of the bridge is rated "serious". The rating of "serious" condition indicates findings of advanced deterioration of main load carrying members. The majority of the structural elements are rated "3" (loss of section, spalling, deterioration, including cracking of concrete or steel elements with local failures possible) or "4" (advanced section loss, deterioration, spalling or scour). The ratings represent conditions with advanced deterioration which reduce the capacity and safety of the structure.

There is significant concrete, steel and timber deterioration observed and documented during the recent inspections. In addition, the structure is weight restricted for both single unit vehicles and combination unit vehicles. All of the major components of the structure; the deck, the substructure, and the superstructure, exhibit significant deterioration and section loss for multiple NBIP inspections.

The bridge sufficiency rating, which is an overall condition and functionality score of the bridge, is 36.4 based on a possible 100 scale. This composite score places this bridge as the number two (2) priority in the City.

In addition to the condition assessment report provided by STV, three (3) other consulting firms have evaluated the structure and reported identical findings. Based on the inspections by STV as well as the reports by others, a clear consensus of total replacement of the bridge has been documented. The safety and condition of the structure is a significant concern.

STV, as the bridge inspection consultant for the past 5 years, recommends the following concerning the impacts of replacing the bridge in a single or in two (2) stages of construction. Replacing the bridge in two (2) stages will allow traffic to be maintained during construction. The two construction approaches being considered are (1) full closure of the bridge with pedestrian traffic maintained, and (2) staged construction with traffic maintained on half of the existing bridge during the first phase while half of the bridge is reconstructed, followed by shifting traffic to the newly constructed half while the remainder of the bridge is replaced. Pedestrian traffic will be maintained during both construction phases in the staged approach.

There are multiple risk factors and considerations that impact the construction staging decision.

- Safety of the portion of the existing deteriorated structure which must remain open to traffic during the first phase of the two (2) phase approach.
- Demolition of a portion of the existing bridge for reconstruction will potentially introduce a reduction in capacity. Currently the loads carried by traffic are distributed to all members of the structure. Removal of half of the existing bridge may detrimentally change the

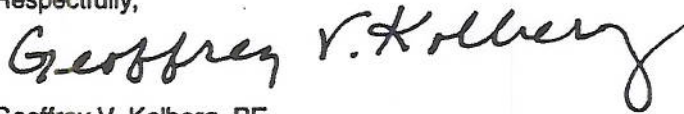
distribution of the loads and impact the capacity of the bridge to carry traffic during reconstruction.

- Traffic impacts during the full closure approach.
- Doubled construction duration risks from potential durability issues during the two (2) phase approach to the portion of the structure which remains open to traffic during the first phase.
- Significant increases in Construction Costs resulting from the two (2) phase approach.
- Extended duration of risks to train traffic and train delays from the longer construction period where the contractor is working over the CSXT tracks for two construction seasons if the two (2) phase approach is selected.
- Potential vehicular peak period traffic delays resulting from the need for alternating signalized single lane traffic across the bridge if the two (2) phase approach is selected.
- Significant constructability complexities resulting since during the first phase of replacement, the new portion of the structure will have a four (4) ft higher profile immediately adjacent to the existing deteriorated structure. The constructability complexities will not exist if the full closure approach is adopted.
- Required replacement reconstruction of multiple utilities (including BGE electric and gas, DOT communications, commercial fiber optics, DPW water, and numerous commercial conduits) which are currently located under and hung from the existing bridge.
- Increased speed and construction efficiency if complete structure replacement can occur in the single phase scenario.

As noted in the CSXT correspondence provided to STV, the railroad has agreed to closely monitor and adjust schedules in order to preclude traffic delays at the two at-grade crossings which will be used by traffic should the existing bridge be replaced in a single phase of construction.

In conclusion, considering safety to the vehicular, pedestrian and train traffic as first priority, cost and convenience secondarily, and targeting a reduced construction duration third, the full closure approach is an overall better solution and in the best interest of the City to pursue.

Respectfully,



Geoffrey V. Kolberg, PE
Senior Associate
STV Incorporated.

Cc James M. Good, PE
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