

# MEMORANDUM

December 15, 2017  
Mr. Joe Angelo, P.Eng.  
Project Manager  
The Corporation of the County of Prince Edward  
Engineering Services  
280 Picton Main Street  
Picton, Ontario K0K 2T0

File No. 17553-1

Ref: **Rehabilitation Recommendations Memorandum**  
**Rehabilitation of Black River Bridge Site # CPE-022**  
**County of Prince Edward**

Dear Sir,

Ainley Group has been engaged to undertake Detailed Bridge Deck Condition Survey for the Black River Bridge, Site # CPE-022. This memorandum summarizes recommendations for the rehabilitation of the bridge based on the findings of the Detailed Condition Surveys.

## Anticipated Scope of Work for Rehabilitation

### **Black River Bridge**

The following presents an itemized scope of rehabilitation work recommended for the Black River Bridge. The finalized scope of work (including all site/structure specific construction details) would be established during detailed design subsequent to the outcome of the structural analysis, utilities circulation and environmental assessment.

- Implement environmental protection measures (to be determined)
- Implement traffic staging to single lane
  - Remove asphalt from topping slab and partial area on approaches
  - Mill 60mm from existing topping slab
  - Remove remaining areas of deteriorated concrete from existing topping slab

- Install 100mm galvanized steel mesh reinforced concrete overlay\*
- Remove and reconstruct top portion of ballast wall
- Carry out partial depth concrete removals and repairs to hollow-core slab ends
- Remove existing safety curb, parapet wall, and end posts. Install new barrier system (Test Level to be determined)\*\*
- Remove (/salvage) and replace (/upgrade) guide rail on approaches
- Replace expansion joint systems
- Carry out crack injection and localized partial depth concrete removals and repairs to abutment walls, wingwalls, and pier caps
- Carry out crack injection and localized partial depth concrete removals and repairs to soffit and fascia
- Waterproof and pave deck surface
- Restore paved sections of approaches
- Switch traffic staging and repeat scope above for alternate side of bridge
- Remove traffic staging and reinstate two-lane traffic

\*A review of structural capacity will be required for the increased dead load due to concrete overlay.

\*\*Curb height would be reduced below 150mm upon introduction of the 100mm concrete overlay. In addition, the existing safety curb and parapet wall railing system does not meet current CHBDC standards – the replacement of this component would be subject to decision by the owner.

The preliminary (Class “C”) cost estimate for the rehabilitation work as recommended for this bridge would be \$750,000. The estimated cost includes 25% contingency.

If you have any questions or require further assistance with these recommendations, please feel free to contact the Ainley Group, Kingston office.

Yours truly,




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Ramin Rameshni, Ph.D. (Civil Eng), P.Eng.  
Senior Structural Engineer

AINLEY & ASSOCIATES LIMITED