

MEMORANDUM

To: Elaine Ramesh, Roads & Bridges Chairman
Village of Barrington Hills

From: Daniel J. Strahan, P.E., CFM
Assistant Village Engineer

Date: March 23, 2011

Re: Cuba Road Bridge
Maintenance History and Anticipated Costs

850 Forest Edge Drive, Vernon Hills, IL 60061
TEL 847.478.9700 ■ FAX 847.478.9701

820 Lakeside Drive, Suite 5, Gurnee, IL 60031
TEL 847.855.1100 ■ FAX 847.855.1115

www.gha-engineers.com

As you know recent structural inspections of the Cuba Road Bridge have indicated a condition rate of “4-Minimum Adequacy to be Left in Place.” Based on subsequent discussions with Wiss, Janney, Elstner (WJE), the Village’s designated program manager for the bridge inspections, the expected life of the bridge structure is approximately ten years, at which time it is expected that the structure will need to be reconstructed. The following includes a summary of maintenance history to date, as well as a strategy recommendation and conceptual costs for the eventual replacement of the Cuba Road Bridge.

Maintenance History

The existing bridge deck and approach was constructed in 1974 through a joint project between the Lake County Highway Department (now Lake County Division of Transportation) and the Village of Barrington Hills. The IDOT permit for the project was titled “Replace Bridge Deck”, so it is likely that the existing bridge abutment predates the existing bridge deck. The project was awarded to E.M. Melahn Construction Co. of Algonquin in the amount of \$40,381.83, and project costs were shared equally between the Village and Lake County.

In 1995 the Village was working with Lake County DOT to make a joint application for federal funding (HBRRP funds) to replace the bridge, using both county and Village funds. Conceptual cost estimates were prepared for engineering, right-of-way acquisition, and construction costs for the proposed structure. The project ultimately was not completed, but a summary of the costs anticipated at that time is included below:

Engineering- Phase 1-	\$18,000
Engineering- Phase 2-	\$22,000
ROW Acquisition-	\$20,000
Engineering- Phase 3-	\$23,000
Construction-	<u>\$230,000</u>
Total:	\$313,000

In 2006 the Village completed a structural resurfacing intended to reduce the amount of seepage into the deck beams from the existing bridge surface. The repairs were designed by WJE and were intended to sustain the life of the structure and delay the need for a complete replacement. Upon removal of the existing surface the condition of the deck beams was worse than initially believed, and the project included additional work to add structural reinforcement to the deck beams. The total cost of repairs was

\$83,278.05. Upon review of the repairs, IDOT added the requirement of an annual bridge deck survey to the existing required bi-annual inspection.

Bridge Replacement Approach

Based on the projected lifespan of ten years, it is anticipated that the Cuba Road Bridge will require replacement by the year 2020. Permitting requirements and construction costs have changed substantially since the initial construction and even since the contemplation of replacement in 1995. WJE has indicated a ballpark figure of \$500,000-\$750,000 to replace the structure, but further study would be needed to prepare a detailed estimate. Typically this is done through a phase one study, which would identify a proposed scope of work, required permits, preliminary design documents, and a more precise estimate of project costs. As the conceptual costs are significant, similar in size to the costs of the annual road program, it is recommended that consideration be given to funding a portion of the project costs each year, or pursuing other funding.

One potential avenue to address the costs of replacement of the structure would be to apply for Surface Transportation Program funding which is administered through the McHenry County Council of Mayors. The Council of Mayors reviews applications and prioritizes projects over a five-year program. Cuba Road is a STP eligible route as it is a designated Federal Aid Urban highway. The program requires the local agency to fund 100% of the phase one and phase two engineering costs and right-of-way acquisition, but only 20% of construction costs and phase three engineering. All engineering plans and reports would be required to meet federal and state standards.

cc: Robert Kosin, Village Administrator