

## Office of the City Engineer

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January 14, 2013

Legistar Item: 12-8412

To: Sandy Weidner, Chairman  
Public Works and Services Committee

From: John Rooney   
Assistant Commissioner of Public Works/City Engineer

Re: W. 6<sup>th</sup> Street Bridge Rehabilitation Report P-51-709

The City of Racine contracted with Bloom Companies (Contract 65-12 (K2-076) – W. 6<sup>th</sup> Street and Memorial Drive Bridge Rehabilitation Reports) to inspect and evaluate the W. 6<sup>th</sup> Street Bridge. Bloom Companies inspected the two-span concrete open spandrel deck arch bridge over the Root River and Horlick Drive. The intent of the report was to evaluate the structural integrity and functionality of the existing bridge and also evaluate the bridge's historical significance and the necessity and cost effectiveness of rehabilitating the existing bridge and the cost effectiveness of a complete bridge replacement. The report also addresses funding eligibility requirements in accordance with Wisconsin Administrative Code Trans 213. Trans 213 addresses county, city, village or township State and Federal funding eligibility for local bridges. Bridges are candidates for rehabilitation funding when their sufficiency rating is less than 80 but greater than 50. When the sufficiency rate falls below 50, the bridge is eligible for replacement funding. Candidate bridges are eligible for rehabilitation funding if an independent criteria study determines if the proposed rehabilitation satisfies the following three criteria:

1. Proposed rehabilitation is cost effective.
2. Proposed rehabilitation will extend the life of the bridge at least 10 years.
3. Proposed rehabilitation will correct all deficiencies.

The intent of this requirement is that after rehabilitation work is complete, the bridge should not be structurally deficient or functionally obsolete.

The sufficiency rating on the W. 6<sup>th</sup> Street Bridge is 24.6. This rating identified in the report makes the bridge eligible for replacement funding. It is recommended the bridge built in 1929 be rehabilitated with a deck overlay. It has the lowest life cycle cost of the four alternatives looked at in the Bridge Study Report. This alternate comprises of a new deck overlay that is constructed on the bridge with other minor repairs to the sub-structure and arch. The bridge has significant life remaining if it is adequately maintained after the overlay. The initial cost estimate for these repairs is \$420,500. However, it is believed that pier settlement has resulted in significant diagonal cracking of the pier. The bridge has

several problems related to functional obsolescence. Correcting functional obsolescence and structural deficiencies can be completely addressed with bridge replacement. This bridge qualifies for Trans 213 replacement funding because of the sufficiency rating at less than 50. The spandrel bent columns and portions of the sub-structure warrant bridge replacement. It is highly likely the bridge will be deemed "historic" through the Section 106 process, and funding to mitigate the replication or acknowledgement of the historic nature must be budgeted for. The initial cost estimate for "historic" bridge replacement is estimated at \$2,788,600.

The City Engineer will submit the reports to the local program manager for WisDOT and WisDOT Central Office so the bridge may become eligible for bridge funding and be placed on the National Bridge Inventory (NBI) List registered with the State of Wisconsin. The next local program funding cycle is from 2013 to 2018. The City Engineer will submit applications for replacement funding for this bridge.

The cost to replace the bridge, along with Engineering and construction related professional services would be placed in the 5-year Capital Improvement Program.

It is my recommendation the Committee receive and files the report.

JCR:njp

Cc: File