

South 1st Street Bascule Bridge over the Kinnickinnic River
Bridge Option Review
April 24, 2015

During the presentation of the 2016 Capital Budget request for the Local Bridge Program at the Capital Improvement Committee's April 17, 2015 meeting, there were questions concerning the costs associated with the rehabilitation of the S. 1st Bascule Bridge over the Kinnickinnic River and if other options were considered. While different options were briefly discussed at the committee meeting, we have provided some further details and explanation of those options below.

Option 1 – Do Nothing:

The existing structure was constructed in 1958 and has National Bridge Inventory (NBI) condition rating of 4 for both the superstructure and substructure which means the bridge is in poor condition experiencing advanced section loss, deterioration and concrete spalling. Limited repairs were completed on the structure in 2014 by the City Bridge Maintenance Section to ensure the bridge is safe until the planned rehabilitation project in 2017. The deteriorated condition of the structural elements and the uncertainty of the reliability of the original 57 year old machinery and electrical components require it to be rehabilitated within the next few years.

Option 2 – Remove Bridge:

South 1st Street was recently reconstructed as part of a Federally funded ARRA project from East Maple Street to East Lincoln Street and has a daily weekday traffic volume of 9,000 vehicles. Closing South 1st Street to through traffic would likely cause operational impacts to adjacent north/south streets, such as, South Kinnickinnic Avenue and South 6th Street. Both South Kinnickinnic Avenue and South 6th Street are two-lane arterial streets that carry 12,000 – 15,000 vehicles per weekday and both streets, which serve many Southside and Bay View neighborhoods, have their own set of existing traffic safety concerns through this corridor. Diverting high levels of additional traffic volume, as would be the case with a South 1st Street closure, to these adjacent north/south streets could further compound these concerns.

Option 3 – Remove existing bridge and replace with a fixed bridge:

The existing bridge opens over 700 times a year to accommodate river traffic going to the upstream properties which include two boat marine storage yards, a restaurant, and a former industrial property. The required vertical clearance under a fixed bridge to accommodate the river traffic is not achievable within the limited space of the South 1st Street Right of Way.

In order to provide a structure with limited vertical clearance the City would need to file for a federal permit with the US Coast Guard, Army Corp of Engineers, and get federal legislative approval. The City has recently started discussions with these federal agencies to decommission the 16th Street Viaduct Bascule Bridge based on the fact that the bridge has not opened for navigation in the past ten years. As part of this coordination, the US Coast Guard has informed the City that if any of the upstream property owners/stakeholders raise concerns or “push-back”

against the plans to limit the vertical clearance they would not approve decommissioning the structure. Based on the current level of openings at the South 1st Street Bascule Bridge it is highly unlikely that the upstream property owners would accept a limited vertical clearance. The City's only option would be to purchase the properties at fair market value which would be a lengthy legal process that would probably not be resolved in time before major repairs were needed for the bridge structure.

In 2009, the Army Corp of Engineers and the Environmental Protection Agency funded and contracted a dredging project to increase the water depth in the Kinnickinnic River downstream from the Becher Street Bridge and this work included both the South 1st Street and Kinnickinnic Avenue Bridges to allow increased navigation access. It is unlikely that federal approval from these agencies would be granted to limit navigation to only small pleasure boats if the South 1st Street Bridge was replaced with a fixed bridge.

Option 4 – Rehabilitate existing bridge:

In order to extend the service life of the existing structure, a bridge rehabilitation project is needed to address the deficiencies including repairing the substructure, replacing the superstructure steel except the main girders on the bascule span, replacing the existing bridge decks at the approaches and the steel grating on the bascule span, and replacing the bridge mechanical and electrical systems. This option will address all major deficiencies of the structure and extend the service life for approximately 40 years. This option also maintains the historic defining features of the bridge which has been determined to be eligible for listing in the National Register of Historic Places due to the defining characteristics of a post-World War II “Milwaukee Type” simple trunnion, double-leaf bascule bridge and is currently being reviewed by the State Historical Preservation Office. Removal of this historic eligible bridge, which is the last remaining City bascule bridge built in the post World War II era, and replacing it with a fixed bridge would likely be met with major objection.

Summary:

Due to the numerous challenges, lengthy timeframe, and real estate costs associated with pursuing a different option we believe that we should continue with the rehabilitation of the existing bridge. Rehabilitation of the existing bridge satisfies all public safety requirements, provides unlimited vertical clearance for marine traffic at the structure, and maintains the historic defining features of the bridge structure.