



**TO:** Mayor Shaun Sipma  
Members of the City Council

**FROM:** Lance Meyer, P.E., City Engineer

**DATE:** June 17, 2019

**SUBJECT:** ANNE STREET BRIDGE ENGINEERING REPORT AND PRESENTATION (4385)

**I. RECOMMENDED ACTION**

1. Recommend council accept and file the report.
2. Recommend council close Anne Street Bridge until such time that the necessary repairs are completed to bring the bridge into a safe working condition.

**II. DEPARTMENT CONTACT PERSONS**

Lance Meyer, City Engineer	701-857-4100
Emily Huettl, Assistant City Engineer	701-857-4100

**III. DESCRIPTION**

A. Background

Late last year, council authorized the engineering department to study the condition of the Anne Street Pedestrian Bridge and report findings to the council.

Council selected EAPC teamed with AE2S to complete the analysis.

B. Proposed Project

The engineering team was asked to review these main tasks:

1. Perform a structural analysis of the bridge to determine feasibility of repairs, ADA requirements, access and egress improvements
2. Develop cost estimates of the repairs needed
3. Coordinate with SHPO to ensure the anticipated repairs would be acceptable in meeting historical requirements
4. Coordinate with BNSF to ensure the required repairs would be allowed in the easement and determine the permitting requirements

In summary of the submitted report (full report attached), the engineering team made these findings:

- The overall condition of the bridge has continued to deteriorate and become more extensive since the last analysis completed in 2001
- The fundamental nature and condition of the bridge and ramps are such that extensive repairs are needed to bring it into a serviceable condition
- The structural framing assemblies are all capable of being repaired
- Wood stringers that support the deck planks in several spans of the south ramp are in such poor condition that **public access should be immediately restricted**

- The entire length of the south ramp superstructure needs to be replaced
- The entire extent of the existing guardrail for the bridge and ramps is diminished by any one of several concerns listed in the full report
- The wood framed bents have occurrences of rotted members which need to be replaced. However, each pier bent as an entire assembly is in acceptable condition
- The steel beams and steel trusses are in excellent condition and need no obvious repairs
- The wood nailer board that is bolted to the steel beams is rotted along its entire length and must be replaced
- The concrete piers do need surface repairs to correct spalling. Once repairs are made, longevity and service life are not a reasonable concern
- The east ramp is set to a 14% slope. The ramp over the river is set at a 9.33% slope. Both slopes do not comply with the 1:12 (8.33%) ADA slope limits and the requirement for intermediate refuge landings. However, the slopes are an inherent historic feature and cannot be reasonably changed without fundamentally changing the layout of the ramps. Handrails are required.
- The stair rise: run nearly complies with current code. Stair stringers are in good condition. Landing joists and deck planking are in acceptable condition. Handrails are required.
- The columns, beams, and connection components of the steel piers near and within the river are in good alignment, with only minimal amounts of misalignment and minimal corrosion and can remain in service without correction
- The piers below the water are in good condition. However, the protective coating near and below the water line is fully removed and needs to be replaced
- No scour along the piers is present
- The base runners on the east ramp are consistently in poor condition and need to be replaced
- The base runners under the bents of the main bridge are in better condition with no repairs required
- A minority of the concrete piers under the pier bents have settled where the base runner is not in contact with all three piers. This can cause lateral instability. Corrections are needed to some pier bents.

The scope of work to correct the issues listed above are found in the full report along with the cost estimate to perform this work.

Recoating the steel piers within the river is very expensive and is detailed in the cost estimate. A potential alternative to coat the steel piers is shown in the cost estimate which would provide a significant cost reduction.

Staff feels at this time; it would be better to estimate the cost of the project with the higher base alternative until such time that the necessary engineering work can be completed to determine if a lower cost alternative is achievable.

#### C. Consultant Selection

A RFQ was issued for this project following HUD guidelines. EAPC was the only firm that submitted a statement of qualifications. They were qualified to perform the work.

### IV. **IMPACT:**

#### A. Strategic Impact:

The Anne Street Bridge is a historically significant structure in Minot.

**B. Service/Delivery Impact:**

The recommendation from the engineering team is that the bridge be closed until repairs can be made. Staff supports this recommendation.

Also, the bridge is currently closed due to flood control construction at the north end of the bridge. Thus, the bridge is already out of service. During this time, council could analyze the data from the report and provide further direction to city staff regarding the future intentions of the bridge.

**C. Fiscal Impact:**

The engineering team provided a detailed estimate of cost based on preliminary engineering study. If design of a repair project is authorized, a refined cost estimate will be provided once the actual design takes place.

**Project Costs**

Currently, with the base alternate, the estimated repair cost to bring the bridge to a safe working condition and correct all deficiencies is \$1,651,158 with a 15% upper and lower bound cost of \$1,898,832 and \$1,403,484 respectively.

If using an epoxy encasement on the steel piles in the river is feasible, the cost estimate decreases significantly to \$1,248,261 with a 15% upper and lower bound cost of \$1,435,500 and \$1,061,022 respectively.

**Project Funding**

At this time, a funding source has not been identified. If council wishes to initiate a project in the future, staff would work to find an appropriate funding source.

**V. ALTERNATIVES**

At this time, staff is not providing alternatives for council's decision. Staff is merely providing the findings of the report. Further discussion will need to take place at some point in the near future how to proceed forward with the Anne Street Bridge.

**VI. TIME CONSTRAINTS**

N/A

**VII. LIST OF ATTACHMENTS**

- A. Anne Street Bridge Assessment Final Report