



## MINNESOTA DEPARTMENT OF TRANSPORTATION (MnDOT) MEMORANDUM

To: Mr. Jon Huseby, MnDOT District 8 Engineer  
From: Phil Barnes, Milan Bridge Taskforce Facilitator  
Date: December 5, 2015

WSB Project No. 03186-000  
MNDOT Contract No. 1001368  
State Project No. 1209-22

**Request: Consideration of Milan Bridge Taskforce Recommendations**

### OVERALL TASKFORCE RECOMMENDATION

The Milan Bridge taskforce was formed on November 3, 2015 and adjourned after four workshops on November 19, 2015. The taskforce members were able to talk to MnDOT experts, learn information through dialogue with stakeholders, and discuss concerns in length. The identified concerns were assessed for both replacement and rehabilitation options. Concerns were often interrelated and complex, and can be synthesized into six-major prioritized recommendation elements:

1. Pedestrian Safety for Recreational Activities – Fishing, Hiking, Biking, and Snowmobile
2. Local Economic Impacts caused by Vehicle, Load and Bridge Size
3. Public Support
4. Public Safety
5. Loss of Historical Structure
6. Replacement Option Project Delivery Concerns
  - a. Load Capacity and Potential Closures for the Current Bridge
  - b. Losing Funding
  - c. Project Delivery Standard Process “Delays”

Based on the stakeholder engagement process, a reasonable recommendation is to move forward with a bridge replacement project. MnDOT is estimating it will cost \$3.4 million to rehabilitate the steel truss bridge, as compared to approximately \$6 million to replace it with an open concrete span. Local historical interest levels, pedestrian and vehicle safety, area recreational activities, and transporting large agricultural equipment weighs heavily on the taskforce’s vision of success. It is recommended that MnDOT re-evaluate the current purpose and need statement to include these community values. The re-evaluation of the purpose and need should also include assessing project scope that is considered cost prohibitive to moving forward with the replacement bridge option. The cost analysis

can also assess the potential impacts a bridge replacement project may have on other program priorities for District 8.

The taskforce understands that legally required project delivery processes may result in project delivery delays for the bridge replacement. The law requires that some standard project delivery processes will need to be reinitiated, and the taskforce understands that these processes can be time consuming. The taskforce also understands that time consuming project processes may result in a loss of Chapter 152 bonding funds that are expected to expire in 2018. While standard processes are moving forward, the taskforce is willing to accept the risk of new load restrictions, and potential bridge closures as a result of the expectations for construction scheduling.

### **TASKFORCE PROCESS INFORMATION**

The Milan Bridge Taskforce was a MnDOT effort to understand resident and agency stakeholder perceptions and attitudes toward all aspects of the Milan Bridge Project. The process was meant to create opportunities for MnDOT officials to engage in a productive dialogue with citizen and agency stakeholders. The taskforce's aim was to make reasonable recommendations that are transparent, more formal, and collaborative.

The residents of the Milan area have great affection and appreciation for their community interests. Some taskforce members have lived in the area their entire lives with multi-generational ties to the agricultural community. Working with passionate citizens and other stakeholders can be challenging work, especially when there is a perception of competing interests. Some stakeholders came to the table with firmly entrenched positions and partial information.

Despite the challenges associated with engaging residents and other stakeholders, MnDOT's goal of creating a collaborative community engagement process was met. Taskforce members had the opportunity to understand "*why*" others held diverse opinions and learn about required government processes. The process had the aim of defining mutual interests, major options and strategies associated with major options. The process and the identification of potential concerns occurred in an open and transparent manner to ensure awareness for all participants, stakeholders, and citizens.

Taskforce Participants included:

- Phil Barnes, WSB Taskforce Facilitator
- Lindsey Knutson, MnDOT District 8
- Judi Bohm, Resident
- Tim Miller, MN House
- Jim Haugen, Resident
- Luther Opjorden, Resident
- Chris Moates, MnDOT Central Office
- Barrett Voight, Upper Minnesota Valley Regional Development Commission (UMVRDC)
- Sam Muntean, Lac qui Parle County Engineer
- Gary Johnson, Yellow Medicine County Commissioner
- Ron Anderson, Resident
- Kristen Zschomler, MnDOT Central Office
- June Lynne, Chippewa County Historical Society

- Susann Karnowski, MnDOT District 8
- Mandi Schmidt, MnDOT District 8
- Tom Moe, Resident
- Chris Domeier, Minnesota Department of Natural Resources (DNR)
- Dawn Hegland, Upper Minnesota Valley Regional Development Commission
- Brad Moen, Resident
- Lyle Koenen, MN Senate
- Mike Hanson, Resident
- Sarah Beimers, State Historic Preservation Office
- Steve Kubista, Chippewa County Engineer
- Renae Tostenson, Lac qui Parle Valley School District
- Kent Kanten, Resident
- Andrew Sander, Yellow Medicine County Engineer
- Linda Pate, MnDOT Historian/Corps of Engineers Liaison
- John Tanquist, Resident
- Al Juhnke, Al Franken – US Senate
- Matt Gilbertson, Chippewa County Commissioner
- Doug Johnson, Resident
- Jeff Randall, Resident (Resort Owner)

### **TASKFORCE PROCESS RULES, ASSUMPTIONS, AND AGREEMENTS**

The taskforce made assumptions to create a common vision about the future of the Milan Bridge. Rules, assumptions, and agreements that were developed include:

1. The Milan Bridge would be a successful project if it:
  - Enhances public safety
  - Improves recreational opportunities
  - Addresses local historical and environmental concerns
  - Supports the local economy
  - Is delivered in a timely and collaborative manner
  - Meets the transportation needs of the local community, and
  - Efficiently uses public dollars
2. WSB & Associates' Phil Barnes will be a neutral facilitator. The facilitator's goal is to enhance public discussions and allow government and citizens to collaborate in a safe environment. The facilitator would consider the process successful if the taskforce could develop a "reasonable" recommendation that most others can accept.
3. Taskforce behavioral ground rules were developed and included:
  - Participants will Listen
  - Participants will Respect Each Other
  - Participants will Participate
  - Participants will Have an Open Mind

- Participants will Look for Common Goals
  - Participants will Respect Others Time
  - Participants will Not partake in “Name Calling”
  - Participants will Use a “Normal Voice”
4. The taskforce would assume that 1) MnDOT District 8 is interested in hearing different perspectives, 2) that no final decisions have been made by MnDOT, and 3) that the taskforce process will influence MnDOT’s decision. MnDOT use three major factors that influence project decisions: 1) public input, 2) data, and 3) process requirements (driven by policies, rules, laws, etc.).
5. The taskforce agreed that two main options should be evaluated. The goal of using options was to help the taskforce focus on potential “scenarios”. Developing scenarios helped keep discussions productive about potential concern levels. Concern levels were then used to develop focused recommendations. The two main options included:
- A “replacement” project is:
    - Proposed design change (Concrete Slab)
    - Wider bridge
    - No Load Postings
    - Safer from Structural Deterioration (75 years)
  - A “rehabilitation” project is:
    - New Bridge Deck
    - Safer from Structural Deterioration (25-30 years)
    - No Load Postings
6. Time will be given for an “open agenda”, and non-taskforce comments at the end of each workshop.

## **PROJECT BACKGROUND INFORMATION**

The original Bridge 5380 (Milan Bridge) was built in 1938, and is associated with a Depression-era economic relief flood control project. MnDOT agreed to rehabilitate the bridge in order to help preserve historic bridges in Minnesota. Milan area residents expressed concern regarding the decision to rehabilitate the bridge. After holding a public meeting and listening to feedback, MnDOT agreed to delay bidding of the bridge project until August of 2015. After re-examination of the project delivery process, the decision was made to delay the project decision (rehabilitation or replacement) further until the spring of 2016. WSB & Associates’ Phil Barnes was hired by MnDOT in August 2015 to perform a new stakeholder engagement process to discuss options for the Milan Bridge project.

## **CONCERN RANKING, ANALYSIS, AND TASKFORCE RECCOMENDATIONS**

### **1. Pedestrian Safety for Recreational Activities**

With both rehabilitation and replacement options, the taskforce is most concerned about the safety of current and future recreational and pedestrian usage. The current area is popular for fishing, snowmobiling, and trail use. Pedestrians tend to use the bridge for fishing and relaxing, and can be “hidden” behind the current truss structure. There is a “day use area” on the downstream side of the bridge that is complete with a fishing pier. However, many residents and visitors continue to fish from the bridge sidewalk or from the causeway. Other pedestrians have been known to jump from the structure into the Minnesota River.

With a wider bridge under the replacement option, vehicle speed may increase that can result in other pedestrian and safety concerns. Taskforce experts believe that these safety concerns can be managed efficiently with appropriate signing and speed reduction techniques. The rehabilitation option has a slightly higher concern level because of how the large abutments can conceal pedestrians. There is no data on pedestrian safety problems for the existing bridge, although a replacement bridge design can better take into account the current and future recreational context.

The rehabilitation option can mitigate some of the perceived risk to pedestrians. This could be accomplished with designing a rehabilitated bridge deck with extra cables that can impede pedestrian crossings. However, the rehabilitation option limits the potential safety and usage features that an updated design and bridge replacement project would likely include. The area is also popular for biking, hiking, and snowmobiling. If a rehabilitation project cannot be designed to include wider sidewalks, then the option would not offer robust accommodations for multi-modal usage, or accessibility to those with disabilities under the Americans with Disabilities Act (ADA). If the rehabilitation option could have wider sidewalks than today, it could provide a better, but not robust level of accommodations for multi-modal use and would meet minimum ADA standards. The rehabilitation option would not meet trail standards, and fulfilling this desire to have the bridge serve multi-modal interests would require a design exception. If needed, the Bridge Office could complete an analysis to see if the bridge can support wider sidewalks, or what other strengthening the bridge would need to support extra infrastructure and weight.

#### Recommendation(s) for MnDOT

To summarize, the Bridge replacement option better allows for a context sensitive solution and can account for recreational and pedestrian use in the area. The taskforce would like MnDOT to consider:

- A Context Sensitive Solution (CSS) process for a replacement bridge design.
- Use a multimodal design approach and consider a recreational trail extension on the replacement bridge. This can include a standard pedestrian design for the southern sidewalk facility (at least six-foot), and evaluating an enhanced access for the northern sidewalk facility. The taskforce would like MnDOT to consider pursuing a design exemption for snowmobile, bike, and pedestrian usage for the northern sidewalk.

- Evaluate a “Flashing Sign” or “Radar” system to slow vehicle traffic. Replacement design may encourage vehicles to speed up because there are no visual cues, like the existing truss, to slow vehicles down.
- Address the design standards for Americans with Disabilities Act (ADA). Residents would like to include greater access for those with disabilities to use the recreational area.
- Evaluate and minimize cost prohibitive recreational and safety design elements that can cause delay in project delivery.

## 2. **Local Economy Impacts caused by Vehicle and Bridge Size**

The original Milan Bridge was built in 1938, and is associated with a Depression-era economic relief flood control project. At its peak employing 1,400 men, the Lac qui Parle Flood Control project was one of the largest federal economic relief projects undertaken in Minnesota.

One large economic sector for job creation and economics in the Milan area is agriculture and farming. Factors driving economic growth and employment include advances in farming equipment. Highway 40 serves as a farm to market route and the bridge is currently limited to a 40-ton max, which limits agricultural haulers. Both the rehabilitation and replacement option will manage load limit challenges, however the rehabilitation option will not address the growing size of agricultural equipment that is needed to keep the local economy competitive in the agricultural industry. Agricultural economic drivers include increasing demand for agricultural produce due to a rapidly expanding global population, and the advent of sophisticated and technologically advanced (large) machinery. Population growth is expected to fuel demand for agriculture produce, which in turn would lead to an increase in demand for farm equipment. Farm equipment is getting more sophisticated and efficient through larger sizes and models.

A major element of the original 1938 Milan Bridge project was to create jobs and economic relief. Because of the likely future of larger machinery and greater agriculture demand, the Milan Bridge is now seen as a barrier to economic growth and not supporting the original economic intent of the structure. Detours for large equipment can be up to 120 miles due to designated “large load” routes. There are also currently width issues with combines (farming equipment), mobile homes, and other items that don’t fit through the existing truss. MnDOT does not have data showing crashes amongst heavy commercial vehicles in this location. However, truckers on the taskforce have testified that “beet trucks” (“normal” sized trucks) are challenged crossing at the same time from opposite directions.

### **Recommendation(s) for MnDOT**

- The future of farming equipment is likely to continue the current trend and grow in size. The taskforce would recommend that a replacement bridge be designed to accommodate the local economic context to support greater economic efficiencies for farmers and the agricultural industry in the area.
- The taskforce would ask MnDOT to consider the original purpose and need of the 1938 project and the “economic relief” intention of the flood district program. Technological advances in farming and farm equipment help keep farming in the region remain competitive and can help attract and retain jobs in the agricultural and other related industries.

- Consider using a long-term perspective to analyze future transportation and economic needs to support area competitiveness. Examine whether a replacement bridge would create 75 continuous years of enhanced economic activity and “return on investment” for the region. Analyze what economic efficiencies a replacement bridge may create, and compare this to the size limiting factors and opportunity costs of the rehabilitation option over a long-term timespan.

### 3. **Public Support**

Responding to Milan Bridge rehabilitation plans in 2015, various letters were drafted to State and Federal representatives requesting support for the bridge replacement option. 10 resolutions were enacted by local governments authorizing support for the Milan Bridge replacement option and opposing rehabilitation plans. Resolutions are as follows:

1. Chippewa County
2. Lac qui Parle County
3. Yellow Medicine County
4. City of Appleton
5. City of Madison
6. City of Watson
7. City of Milan
8. City of Holloway
9. Lac qui Parle Valley School District
10. Edison Township

An additional letter of support was submitted by Swift County representing similar opinions from Chippewa and Lac qui Parle Counties. MnDOT also received a letter in support for bridge replacement from a Madison, MN farming equipment dealer called Amundson Peterson. Most letters and resolutions requested that future projects meet functional design standards.

MnDOT has a public involvement approach and goal to meet the public where they are, identify what is important, and invest in safe, sustainable transportation systems that get the public where they want to go. As MnDOT continues to move the project delivery process forward, it appears clear that public involvement opportunities and discussion will likely become unproductive if a rehabilitation option is moved forward.

MnDOT’s mission statement clearly states that the organization will “*Plan, build, operate and maintain a safe, accessible, efficient and reliable multimodal transportation system that connects people to destinations and markets throughout the state, regionally and around the world.*” The taskforce believes this mission is best served by a replacement bridge that accounts for safety and pedestrian accessibility, and is a reliable multimodal structure that connects local agricultural business to markets in other regions more efficiently. Moving forward with the rehabilitation option will likely create enhanced public trust and public confidence in MnDOT and should be one element that influences the final decision.

#### Recommendation(s) for MnDOT

- Provide continued public engagement opportunities to discuss the replacement option.
- Provide timely information to residents and businesses affected by the Milan Bridge plans.

- Review and respond to local public input.
- Perform a periodic review of the public involvement process to gauge its effectiveness.
- Consider evaluating MnDOT's mission while accounting for local community project interests while making project decisions.

#### 4. **Vehicle Safety**

The taskforce was introduced to safety data that showed low crash rates. This data was based on recent history over the last 10 years. From January of 2004 to April of 2015 there were five reported crashes in the area of the Milan Bridge. Two of the five crashes were due to frost covered roads and no reported crashes were caused by the bridge structure itself. The bridge currently supports around 700 vehicles daily. MnDOT uses data as part of their decision-making process, and some participants argued that the data was not complete and there were previous accidents prior to the 10-year timespan. It was discussed that a fatal crash occurred on the bridge prior to the most recent 10-year period for which the data was presented.

The bridge is currently considered “functionally obsolete”. This means that the design of the bridge is not suitable for its current use. Several elements that make the structure functionally obsolete are a lack of wide shoulders and the inability of the structure to manage current traffic size or weight. Being designated functionally obsolete may suggest that experts believe the current 27-foot width is sub-standard for current transportation uses. Some standards have suggested that a minimum of a 30-foot width is more appropriate.

Several stakeholders are adamant that the bridge height and width is a hazard and a safety risk for Lac qui Parle students, staff, buses, beet trucks, and all other vehicles that use the bridge daily. A lack of wide shoulders is a major concern for current users. The narrow crossing creates a safety risk perception that exists regardless of the crash data. Vehicle crossing is more stressful to users when two larger vehicles meet on the bridge when driving from opposite directions. Because there is an appearance that there is not enough room for vehicles, many times users feel like they must stop on the road or slow down drastically to avoid crashes. This “extra careful” driving behavior may also influence overall crash data and could create a lower crash rate.

Snow, icy, and windy weather conditions are consistent and standard for this part of the country in the winter months. Weather conditions regularly have impacts on roadway operations and traffic safety. Bridges differ from most surface streets and highways in terms of their physical properties and operational characteristics that may cause them to become icy. Weather can also add to the stressful user feelings when crossing the bridge and causeway. Drifting snow that appears to be created by the truss structure and guard rails is also an element of concern for residents and users. The taskforce believes that these operational challenges could be mitigated with modern standards for functionality in the replacement option. That said, there may be other snow drift mitigation options for the rehabilitation option that were not discussed in length.

The taskforce is now moderately concerned about safety with the rehabilitation option after accounting for current available data and the perceived risk for future crashes. It was also suggested that MnDOT has used “potential safety risk” as reasoning for project selection in the past. To the residents in the area, vehicle safety risk is very real. Residents feel that a serious crash caused by the current design is a matter of time.

Recommendation(s) for MnDOT

- Design a replacement bridge that meets current operational standards for safety and larger loads, that will not be deemed “functionally obsolete” when construction is completed. This includes the elimination of structural barriers along the bridge to enhance user experience and the perception of safety.
- Evaluate the roadway and bridge guard rails for reducing snow drifting. Consider the use of cable barriers and other techniques that could minimize snow drifting.
- Widen the bridge to allow large vehicles to cross the bridge simultaneously without creating the perception of a dangerous situation for vehicles.
- Evaluate sight lines and consider increasing sight distance by changing driveway entrances near the east end of the bridge, potentially creating a frontage road to improve visibility.

5. **Loss of a Historical Element in the Historic District**

The current Milan Bridge was built in 1938, and is associated with a Depression-era economic relief flood control project. It was the largest flood control project undertaken in the state and the largest pre-1970 engineering project on the Minnesota River. The Lac qui Parle Flood Control Project had four major goals: flood control, water conservation, recreation and wildlife propagation, and poverty relief. The Milan Bridge was completed with cooperation from local, state, and federal programs and brought economic relief to residents of the Minnesota River watershed during the Great Depression. Some design elements remain in good condition after 70 years, and this attests to the high quality of original work.

The Lac qui Parle project was a very large project, yet typical of the “New Deal” public works projects undertaken in Minnesota. The purpose was to alleviate poverty and to build permanent, necessary public infrastructure. The Lac qui Parle Flood Control District, where the Milan Bridge is located, is “eligible” for listing in the “National Register of Historic Places”. The Milan Bridge is one element in the “register-eligible” historic district. The National Register eligibility of the district was evaluated using the registration requirements in the Multiple Property Documentation Form (MPDF) entitled “Federal Relief Construction in Minnesota, 1933-1941.” The property meets those registration requirements, especially “by representing a particularly important project through the size and scope of the work involved, or by the number of people employed” and by representing “an accomplishment in the field of conservation through a significant effort to manage the state’s natural resources” (Anderson 1990/1993; amended Gemini Research 2002: F.20). A 2010 “Phase II Architectural Investigation of the Lac Qui Parle Flood Control Project” confirmed that the Milan Bridge and related causeway is a contributing element to the Lac Qui Parle Flood Control Project Historic District.

During the taskforce proceedings, MnDOT did an exemplary job explaining why the Milan Bridge was special. MnDOT officials also explained some standard processes that were used to make historical determinations. The bridge is understood to be historically significant because of its association with the overall flood district project, and how the United States came out of the Great Depression. The specific methodology that is used when making those historical significance decisions was not explained in detail, however it was stated that the scale and size of the original Flood District project is likely the largest in Minnesota. Discussions also explained how required legal processes can impact a replacement project’s delivery timetable.

The residents' concern level with losing a historical structure was still considered moderate at best. There are some within the community that would like to see elements saved, however several taskforce members reiterated multiple times that a replacement project is the biggest priority for the community and there is widespread public support for this option. Other taskforce members felt strongly that the concern level for losing the historical bridge element in the historic district should be considered low. The rehabilitation option would protect historical interests fully, however would fail to account for several interests identified for by the taskforce for project success.

#### Recommendation(s) for MnDOT

- Expedite all new (Section 106) legal process assuming that the replacement option will create an adverse impact to the “register-eligible” historical district. The taskforce is aware of potential risks to project delivery timetables created by legally required project development processes, where historic structures are present.
- The community would like to incorporate some historical aspects in a replacement bridge option *as long as historical elements do not create a project scope that is cost prohibitive or would significantly add to the project timeline*. MnDOT should consider the below options to evaluate whether they are cost prohibitive to the replacement option.
  - Partner with residents to create a restaurant or patio out of the steel truss in the historic district. A local resort owner expressed interest in locating the truss bridge in the recreational resort area. For this option, it was also suggested to move existing stone “rip-rap” to the same location and use to surround the structure.
  - Save parts of the truss for the local historical society.
  - Explore transforming the bridge into a historic fishing pier in a new location.
  - Evaluate moving the bridge to Chippewa County or other areas outside the historic district, and consider use as a pedestrian bridge.
  - Evaluate moving the bridge to any other location inside historic district, and consider use as a pedestrian bridge.
  - Consider restoring only the Works Progress Administration (WPA) stonework.
  - Consider extending WPA stonework to the north for recreational use.
  - Consider creating a plaque memorializing the bridge and the Historical Flood District.

#### 6. Replacement Option Project Delivery Concerns

One interesting factor that adds to the complexity of the replacement option is the amount of potential risk that residents and stakeholders are willing to accept to move the project forward. MnDOT staff has made it clear that standard project delivery practices could take three to five years to start construction on the replacement bridge. It was also mentioned that "starting over" standard processes enhances the risks of reduced load limits, losing project funding, and bridge closures until a replacement bridge can be constructed. The downside of the replacement option has been made clear to resident and user taskforce members.

Based on the current condition and the existing deterioration of the structure, MnDOT's bridge experts believe that the risk of service interruption will remain high over the next 3-5 years. The

taskforce understands that it is difficult to predict how slow or fast the structural deterioration will progress on the existing bridge. Beyond the bridge's low sufficiency rating of 38.9 that indicates severe structural problems that need remedy soon, the structure also retains a "fracture critical" design. A "fracture critical" bridge is defined by FHWA as a steel member in tension, or with a tension element, whose failure would probably cause a portion of, or the entire bridge, to collapse. These elements of structural risk may likely result in conservative management by MnDOT and more load limits and potential closures.

MnDOT also holds the perspective that losing funding for the replacement option is a realistic scenario. MnDOT staff has explained clearly that bonding dollars (2.8 million) dedicated to this project will expire in 2018. MnDOT District 8 sees funding loss as a high-level concern for the overall program. District 8 staff also clarified that the funding would be lost to projects outside of District 8. District 8 does not have many bridges eligible for the funding, which makes shifting funds to other local bridges unrealistic.

Contrast to MnDOT's perspective, losing funding is an acceptable scenario and low concern to most residents on the taskforce. Residents added that closing the bridge adds 15-16 miles in detours, however would be worth the transportation problem to move forward with the replacement option. It was also acknowledged and accepted that new temporary load limits are likely in the next 3-5 years. Taskforce residents and truckers were also made aware of "other service interruptions" that could be a partial or complete closure due to repairs, inspections, and/or maintenance. Residents still feel that this is a low concern from a long-term perspective, and the rehabilitation option appears to threaten economic and safety interests to an extent that makes the potential problems worth it. The rehabilitation option has less risk for losing funds, but this option will not meet the taskforce's vision of success for the project. Residents in the taskforce have continually discussed taking a "long-term view" for the project and community. Many on the taskforce consider the rehabilitation option as the worst case scenario.

#### Recommendation(s) for MnDOT

- Consider to begin a "pre-application" process with the Corps of Engineers. This type of early consultation (and early Section 106 review initiation) is done for complicated, time sensitive projects.
- Continue ongoing partnering with state and federal representatives to minimize risk to funding and to expeditiously move the replacement option forward.
- Start ongoing communications with local residents about potential closures, load restrictions, and project delivery processes.
- Actively accept risks to timetable delays, however focus MnDOT District and Central Office efforts on streamlining legal processes to avoid the loss of funding or bridge closures. The community has been informed of the potential risks to their quality of life and expects MnDOT to make every attempt to get through project delivery process before funds expire in 2018.