

S-11 Fond du Lac Wild Goose State Trail Bridge Rehab

State of Wisconsin
 Department of Natural Resources
dnr.wi.gov

Motorized Recreation Grant Application

For: (choose all that apply)

Form 8700-159 (R 02/2024)

Page 1 of 5

ATV/UTV Trail Aid

Snowmobile Trail Aid

Due Date: April 15

Notice: Completion of this form is required under Wisconsin Statutes 23.09(26) and 23.33. Failure to complete this form will result in denial of financial assistance. Personally identifiable information found on this form is not intended to be used for any other purpose. The Department of Natural Resources (DNR) may provide this information to requesters as required by Wisconsin's Public Records law {ss. 19.31 – 19.39, Wis. Stats.}.

Instructions: Applications may combine more than one source of funds. They may be submitted for consideration of traditional ATV, UTV, Snowmobile and Motorized Stewardship funding. Submit one copy of all forms and attachments. See Page 2 for necessary attachments. Send applications to your [Community Services Specialist](#).

| DNR Use Only | |
|--------------|--------|
| Category | Number |
| | |

Section 1: Applicant Information

| | | | | | | | |
|--|-------|-----------------------------|--|--|-------|----------|--|
| Applicant / Organization Name | | | | Check Recipient: Individual other than authorized individual to act on behalf of the applicant. <input checked="" type="checkbox"/> Select if the same as applicant. | | | |
| Fond du Lac County | | | | | | | |
| Individual Authorized to Act on Behalf of Applicant per Resolution | | | | Check Recipient Name (Name to Appear on Check) | | | |
| Sarah Van Buren | | | | Sarah Van Buren | | | |
| Title | | | | Title | | | |
| Principal Planner | | | | Principal Planner | | | |
| Address | | | | Address | | | |
| 160 S. Macy St. | | | | 160 S. Macy St. | | | |
| City | State | ZIP Code | | City | State | ZIP Code | |
| Fond du Lac | WI | 54935 | | Fond du Lac | WI | 54935 | |
| Telephone Number | | Email Address | | | | | |
| (920) 929-3138 | | sarah.vanburen@fdlco.wi.gov | | | | | |

Section 2: Project Information Required for all Projects

| | | | | | | | |
|--------------------------------------|----------|----------|---------|-----------------------------|---|----------------------------------|--|
| Project Title | | | | Current Funded Miles | | New Miles (if applicable) | |
| Fond du Lac County Snowmobile Trails | | | | 334.1 | | 4.1 | |
| County | Township | Range | Section | ¼ ¼ | ¼ | GPS Coordinates: | |
| Fond Du Lac | N | OE OW | | | | Lat. _____ Long. _____ | |

Project Description Summary

According to SNARS, maintain 334.1 miles of existing snowmobile trails.

New trail request (maintenance only): Ripon Silver Creek Club = 4.1 Miles

Bridge Rehab: Wild Goose State Park Trail = 12' x 77' at \$296,000

I certify that all maintenance land use agreements are on file.

Estimated Cost

| Maintenance | Acquisition | Insurance | Development | Bridge Rehab. | Trail Rehab. | Total Estimated Cost |
|-----------------------------------|-------------|-----------|-------------|---------------|--------------|----------------------|
| \$100,230.00 | | | | \$296,000.00 | | \$396,230.00 |
| Leave Blank – DNR Use Only | | | | | | |
| | | | | | | |

Applicant Certification

| | |
|-------------------------------------|-------------------|
| Printed Name of Authorized Official | Official's Title |
| Sarah Van Buren | Principal Planner |

As the applicant's authorized official, I certify that, to the best of my knowledge, the information in this application is true and correct.


 Signature of Authorized Official

4/14/24
 Date Prepared

Appendix A – Required for Bridge Rehab/Replace, New, or Reroute with New Bridge

Bridge Rehab/Replace New Bridge Reroute with new bridge

| | | | | | | | | |
|--|--|-------------|-------|--|-----|--|--------------------------------|--|
| County | | Township | Range | Section | ¼ ¼ | ¼ | GPS Coordinates: | |
| Fond Du Lac | | 15 N | 17 | 32 | NW | NE | Lat. 43.4353 Long. -88.2914 | |
| Water Body Name | | | | Bridge Name | | | County Inventory Number | |
| East Branch Fond du Lac River | | | | Wild Goose State Trail 1 | | | | |
| Funded Trail Name or Number (SNARS if applicable) | | | | Has this bridge site ever received development or rehabilitation funds in the past? | | | | |
| Wild Goose State Trail | | | | <input type="radio"/> Yes <input checked="" type="radio"/> No Year: _____ \$ _____ | | | | |
| Bridge is located on: | | | | Old Bridge/Culvert Size | | | | |
| <input type="radio"/> Private property <input checked="" type="radio"/> Public property | | | | 9.5' x 77' | | | | |
| | | | | New Bridge/Culvert Size | | | | |
| | | | | 12' x 77' | | | | |
| Landowner Where Bridge is Located | | | | Telephone Number | | Length of Trail Use Agreement (5 year minimum) | | |
| State of Wisconsin | | | | | | DNR-MOU with County | | |
| Current maximum load | | 25,000 lbs. | | Age of Bridge | | Bridge Material | | |
| Proposed maximum load | | 25,000 lbs. | | 123 | | Steel structure with wood deck | | |
| Sponsoring Club Name | | | | Club Contact | | | Telephone Number | |
| Waupun Drift Jumpers | | | | Greg Holz | | | (920) 960-1710 | |
| Do you have your trail bridges posted as to maximum load? | | | | What is the maximum load of the other bridges on the system if groomed with this bridge? | | | | |
| <input checked="" type="radio"/> Yes <input type="radio"/> No | | | | 25,000+ lbs. | | | | |
| What is the weight of your puller & drag/grading equipment? | | | | | | | | |
| 15,000 lbs. | | | | | | | | |
| What other recreational trail uses are planned for this bridge? | | | | | | | | |
| Hiking, biking, and other recreational uses. | | | | | | | | |
| If there are other Recreational uses planned, how much of the bridge cost will be paid for by non-snowmobile or non-ATV users? | | | | | | | | |
| 0 | | | | | | | | |

- Yes No Have you contacted your local [DNR Water Management Specialist \(WMS\)](#) regarding a permit?
- Yes No Is a permit needed? (Please provide any written correspondence from WMS.)
- Yes No Have you contacted your County Zoning Dept. regarding a floodplain determination?
- Yes No Will an H & H (hydrologic and hydraulic) study be required?

Bridge Project Detailed Description

Fond du Lac County is requesting funding to replace the existing bridge deck on the Wild Goose the existing bridge deck on the Wild Goose Trail at the Fond du Lac River crossing. The current deck is functionally inadequate for snowmobile trail operations, as it does not safely accommodate modern grooming equipment. This limits grooming access and creates operational and safety concerns. Replacing the deck with a 12' x 77' timber structure will improve safety by providing adequate clearance for grooming equipment and trail users. The project will allow consistent grooming operations, reduce risk to operators, and improve overall trail conditions. The Wild Goose Trail is an established route and an important connection within the county trail system. This bridge crosses a critical river crossing with no practical alternative route. Maintaining the crossing is essential to preserving trail continuity and access.

The cost estimates of the Timber Deck Alternative (see Addenda 1 of 2023 Inspection Report) and the Concrete Deck Alternative (page 3 of 2023 Inspection Report) include all aspects associated with design and construction of the structure rehabilitation. Rehabilitation items includes the cost of listed items in referenced sections.

Appendix A (continued)

Summarize Costs in Appropriate Categories:

| Bridge Structure | | | |
|-------------------------|----------------------------------|--|--|
| | | Quote 1 | Quote 2 |
| | | <input type="radio"/> Steel <input checked="" type="radio"/> Wooden | <input checked="" type="radio"/> Steel <input type="radio"/> Wooden |
| Bridge Dimensions: | <u>12' x 77'</u> | <u>12' x 77'</u> | <u>12' x 77'</u> |
| Bridge Manufacturer: | <u>Custom</u> | <u>Custom</u> | <u> </u> |
| Design Weight Load | <u> </u> lbs. | <u> </u> lbs. | <u> </u> lbs. |
| Cost of Structure: | 1. Engineering | \$ <u>83,000</u> | \$ <u>84,000</u> |
| | 2. Structure | \$ <u>213,000</u> | \$ <u>219,000</u> |
| | Subtotal | \$ <u>296,000</u> | \$ <u>303,000</u> |

| | | Quote 1 | Quote 2 |
|---------------------------------------|-------------------|---|---|
| | | <input checked="" type="radio"/> Contractor or <input type="radio"/> Sponsor | <input checked="" type="radio"/> Contractor or <input type="radio"/> Sponsor |
| | | Estimate | Estimate |
| Installation Costs: | | | |
| 1. Engineering | \$ | <u> </u> | \$ <u> </u> |
| 2. Site Preparation | \$ | <u> </u> | \$ <u> </u> |
| 3. Abutments | \$ | <u> </u> | \$ <u> </u> |
| 4. Pilings/Piers | \$ | <u> </u> | \$ <u> </u> |
| 5. Approaches | \$ | <u> </u> | \$ <u> </u> |
| 6. Riprap | \$ | <u> </u> | \$ <u> </u> |
| 7. Labor | \$ | <u> </u> | \$ <u> </u> |
| 8. Equipment Rental | \$ | <u> </u> | \$ <u> </u> |
| 9. Culverts | \$ | <u> </u> | \$ <u> </u> |
| 10. H & H Study | \$ | <u> </u> | \$ <u> </u> |
| 11. Wetland Delineation | \$ | <u> </u> | \$ <u> </u> |
| 12. Other <u> </u> | \$ | <u> </u> | \$ <u> </u> |
| | Subtotal | \$ <u> </u> | \$ <u> </u> |
| | Total Cost | \$ <u>296,000</u> | \$ <u>303,000</u> |

For the application grant, you must take the lowest of the two quotes.

| Entire Deck and Railing Projects | | <input type="radio"/> Contractor | <input type="radio"/> Sponsor | <input type="radio"/> Club |
|---|--------------------|----------------------------------|-------------------------------|----------------------------|
| Bridge Dimensions: | <u>12' x 77'</u> | | | |
| Design Weight Load | <u>25,000</u> lbs. | | | |
| 1. Materials | \$ | <u> </u> | | |
| 2. Labor | \$ | <u> </u> | | |
| | Total | \$ <u>296,000</u> | | |

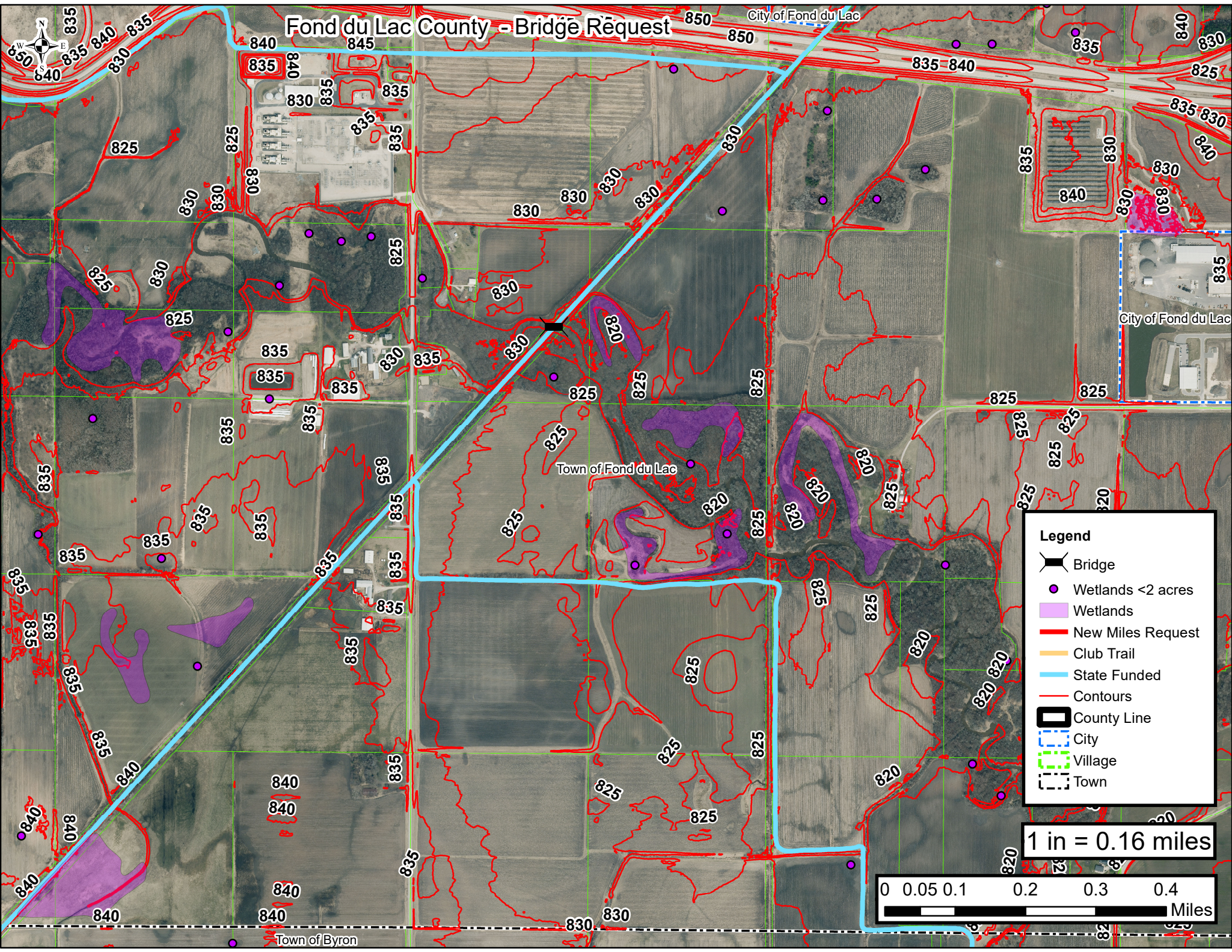
Guidelines for Applicant

Complete this form for each bridge structure you are submitting a grant application for. Provide any additional documents not requested on application checklist to substantiate your points, including actual deeded easements.

This ranking tool is used for both **Snowmobile** and **ATV/UTV** Trail Aids programs, though each program may score things differently. If you are seeking funding from BOTH programs for a dual use bridge, please score ALL questions

| Category | | Possible Points | Snow Points | ATV/UTV Points |
|--------------------|--|-----------------|-------------|----------------|
| 1 | Condition of the Structure (max of 10 points) | | | |
| | Has a certified bridge inspection report that supports the project & demonstrates need. Copy of report needed. Snowmobile Funded Projects | 10 | 10 | |
| | Calculation: 10 minus NBI Rating Score (0-9) ATV Funded Projects <i>Use overall NBI # if provided, or an average of the components. Redecking projects should just use the deck NBI #.</i> | 10 | | |
| 2 | Permits (maximum points 4) | | | |
| | Consultation with DNR Water Mgmt Specialist has occurred & permit is likely, if needed | 1 | 1 | |
| | Permit in hand / Bridge already permitted | 3 | 3 | |
| 3 | Funding (maximum points 2) Has an application been submitted for other funding | | | |
| | 50% or greater from other funding source(s)? (includes 50/50 Snow/ATV projects) | 2 | 0 | |
| | 11% - 49% from other funding source(s)? | 1 | 0 | |
| 4 | Length of Written Easements or Land Use Agreement (max points 5)(ch. 23.09(26)(am)1 WI Stats) | | | |
| | On public land (County, State, Federal) | 5 | 5 | |
| | 10 or more year deeded easement on private land or other public land, for <u>all portions of that trail to the nearest road on each side of the bridge</u> | 5 | | |
| | 3-9 year deeded easement on private land or other public land, for <u>all portions of that trail to the nearest road on each side of the bridge</u> | 4 | | |
| | 10 or more year deeded easement on private land or other public land, for <u>just the bridge site</u> | 3 | | |
| | 3-9 deeded easement on private land or other public land, for <u>just the bridge site</u> | 2 | | |
| | 10 or more year land use agreement (LUA, not deeded) on private land or other public land | 1 | | |
| | 3-9 year land use agreement (LUA, not deeded) on private land or other public land | 0 | | |
| 5 | Miles Impacted – How many miles will need to rerouted if the structure is not replaced? Measured from nearest intersection on both sides of the bridge. (max 4 points) | | | |
| | Less than 20 miles Snowmobile Funded Projects | 1 | 1 | |
| | 20 miles or more Snowmobile Funded Projects | 3 | | |
| | No other snowmobile trails connect. Snowmobile Funded Explain: | 4 | | |
| | For ATV/UTV projects, describe the relocation (on routes? Trail?) Include sketch/map | | | |
| 6 | If ATV/UTV, Seasons of Use (max 3 points) | | | |
| | Year-Round or Summer Only ATV/UTV Trail | 3 | | |
| | Winter Only ATV/UTV Trail | 1 | | |
| | DEDUCTIONS | | | |
| 7 | County Active Project Deduction (maximum deduction 1 point) A snowmobile active project is one that has exceeded it's initial grant period. | | | |
| | Two or more active projects - deduct 1 point | -1 | 0 | |
| GRAND TOTAL | | | 20 | |

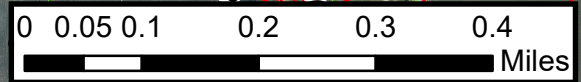
Fond du Lac County - Bridge Request



Legend

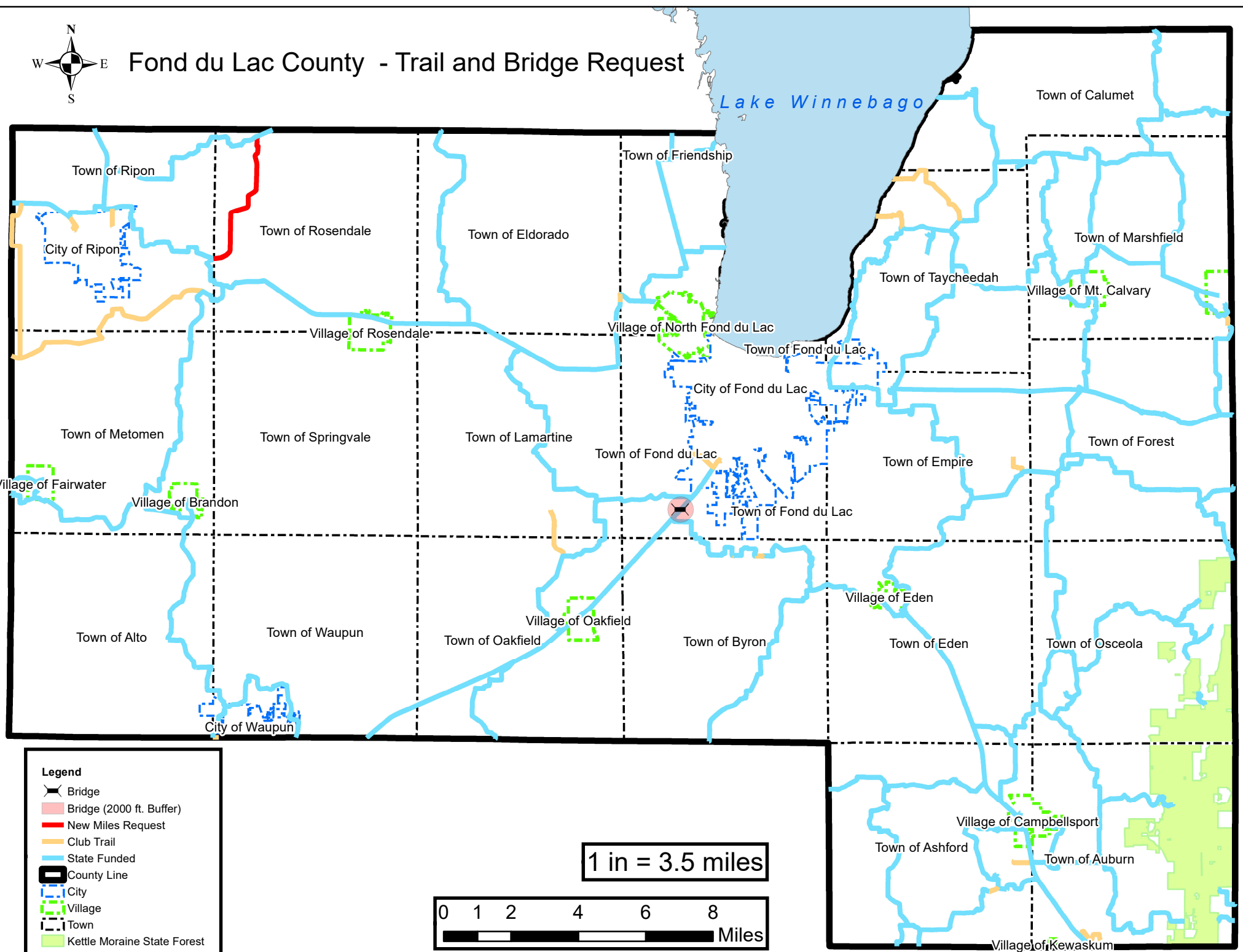
- Bridge
- Wetlands <2 acres
- Wetlands
- New Miles Request
- Club Trail
- State Funded
- Contours
- County Line
- City
- Village
- Town

1 in = 0.16 miles





Fond du Lac County - Trail and Bridge Request





Wild Goose State Trail Bridge Fond du Lac County, WI

**Wild Goose State Trail Bridge over
East Branch Fond du Lac River
Feasibility Study**

Fond du Lac County

November 21, 2023



Wild Goose State Trail Bridge

Fond du Lac County, WI

**Wild Goose State Trail over East Branch Fond du Lac
River**



3433 Oakwood Hills Pkwy
Eau Claire, WI 34701
715.834.3161
www.AyresAssociates.com

Ayres Project No. 42-1405.00

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| Evaluation and Recommendations | 2 |

List of Appendices

- Appendix A Inspection Report
- Appendix B Photo Log
- Appendix C Cross Sections
- Addenda 1 Revised Timber Deck Cost - 2026

Inspection Summary

Fond du Lac County has contracted with Ayres Associates to provide structural evaluation services of the Wild Goose State Trail Bridge over the East Branch Fond du Lac River in the Town of Fond du Lac, Fond du Lac County, Wisconsin. The structure is located in Section 32, Town 15N, Range 17E. Scope of the inspection included the above ground visible portions of the existing bridge. Ayres' responsibilities were to assess the condition of the existing bridge and provide conceptual recommendations for rehabilitation alternatives.

The Wild Goose State Trail Bridge was inspected on October 19, 2023. Cory Thomson, PE, CBI served as Inspection Team Leader. He was assisted by Joe Bluma, PE, CBI. They observed the condition of the approximately 77.4-foot long single-span steel thru-girder bridge with a timber deck on masonry abutments. The clear span between abutment faces is approximately 73.4-feet. See Appendix A for the inspection report. Waders and climbing equipment were used to facilitate viewing all portions of the bridge.

The inspection report breaks down the bridge according to elements. The elements are then evaluated and assigned a Condition State for each unit of measure of the element. Condition State 1 indicates no deficiencies or superficial deficiencies such as hairline cracking. Condition State 2 indicates minor deficiencies such as minor surface corrosion of steel or a minor loss or deterioration of mortar in joints. Condition State 3 indicates moderate deficiencies such as a loss of mortar in joints or moderate to heavy surface corrosion of steel. Condition State 4 indicates a significant deficiency that should be reviewed by a qualified professional engineer.

The bridge consisted of steel thru girders with steel floor beams spanning between. Steel stringers span between the floorbeams with timber railroad ties above. Timber decking is attached to the timber railroad ties to provide a walking surface.

The steel thru girders are built up by riveted plates and angles. The thru girders are 8-feet tall with varying sized cover plates attached to the flanges throughout the span length. The steel floor beams are also built up of riveted plates and angles. The floor beams are 3.75-feet tall and have a triangular stiffer at each end. The steel stringers are a S20x65 shape. Based historic steel manufacturing records, these stringers were likely manufactured between 1897 and 1903 by The Passaic Rolling Mill Company. The railroad ties are approximately 6-inch x 6-inch timbers and the timber wearing surface is 1 1/2-inch thick planks.

The overall condition of the bridge is poor to satisfactory condition. The timber deck and railroad ties are in poor condition with heavy wear along the centerline of the deck and damage towards the north end of the bridge deck. The railroad ties have severe to heavy rot with moderate to heavy section loss at the ends of the ties.

The abutments are in poor condition. There is loss and deterioration of the mortar of the masonry. The deterioration of the mortar is worse at the north abutment. Also at the north abutment, there is wide crack in a masonry block just below the northeast bearing. The masonry on the wingwalls is in similar condition to the abutment masonry.

The superstructure includes all the steel elements of the structure. This includes the thru girders, floorbeams, and stringers. All the steel elements have minor surface corrosion. There are some areas with minor pack rust and slightly heavier corrosion where water can collect. The steel thru girders have some minor impact damage on a stiffener and the north end of the east girder.

The timber bearing pads at the north have heavy rot and deterioration at the ends. The keeper bolts at the north bearings are also sheared off from bridge movement. The thru girder at the northeast has moved approximately 4-inches and the northwest has moved approximately 2-inches. At the northeast quadrant, the thru girder is tight against the masonry backwall. The southwest bearing has a hole from corrosion in the filler plates.

The condition of the structure does not affect the structural load carrying capacity of the structure at this time. The bridge can safely remain open to trail users, including pedestrians, snowmobiles, and grooming machines.

Appendix B contains photos from the inspection, detailing the condition of various bridge elements.

Evaluation and Recommendations

Bridge Rehabilitation Alternatives

We recommend the bridge be rehabilitated. The rehabilitation should address deficiencies of the existing structure. Elements that should be rehabilitated include:

- The masonry abutments and wingwalls should be tuck pointed to rehabilitate the mortar joints.
- The cracked masonry block below the northeast bearing should be replaced or repaired with epoxy or grout.
- The timber bearing pads at the north abutment should be replaced and the hole in the southwest bearing should be filled with metallic epoxy.
- The scour in front of the south abutment should be filled with riprap.
- Brush should be cleared to protect the bridge from root infiltration damaging the masonry substructures.
- The timber deck including railroad ties should be replaced along with necessary approach work if there is a grade change.

Economical deck replacement alternatives for this bridge would be a concrete deck or a timber deck. Both alternatives would span between the steel thru girders, but this would expose the triangular stiffener gusset plate which would present a safety hazard. This would allow the steel thru girders to act as railing.

Assumptions used to develop the alternatives are:

- 50-feet of approach work at each end of the bridge
- Designed for pedestrian loading following the 2009 AASHTO Pedestrian Bridge Design Guide and WisDOT Bridge Manual (90 psf pedestrian load and H10 vehicle load)

Timber Deck

This alternative uses timber filler blocks placed on top of the steel stringers. 8-inch thick timber dowel laminated transverse planks would be placed on top of the filler blocks. 2-inch thick sacrificial timber decking would be installed on top of the planks to provide a smooth wearing surface for snowmobiles and pedestrians. The planks would be sized to fit between the steel thru girders leaving approximately 2-inches of open space for construction clearances and for water and debris to pass through. A grade raise of approximately 6-inches would be required.

The estimated life of the timber deck is approximately 40-60 years. Likely during the life of the deck, the sacrificial timber decking would need to be replaced due to wear from snowmobiles. Maintenance items for this type of deck would be replacing deck boards as required and washing off the steel elements to remove debris collecting on the flanges.

Concrete Deck

This alternative uses a cast-in-place concrete deck that would span over the stringers with primary transverse reinforcement. There would be a haunch of approximately 5-inches on each stringer. The deck would be full thickness over the floorbeams. The concrete deck would be 8-inches thick and would require approximately a 6-inch grade raise. Epoxy coated rebar would be used. Approximately 2-inches of open space would be left between the concrete deck and the steel thru girders for construction

clearances and water and debris to pass through. A drip edge would be utilized and placed to prevent excess water from landing on the thru girders. The deck would have a normal crown of 2% to facilitate drainage.

The estimated life of the concrete deck is approximately 50-75 years. Likely during the life of the deck, an epoxy overlay would be required to mitigate wear from snowmobiles. Maintenance items for this type of deck would be sealing cracks as required and washing off the steel elements to remove debris collecting on the flanges.

Appendix C contains cross sections of the Timber Deck and Concrete Deck alternatives.

Other Design Considerations

The estimated remaining life of the steel superstructure elements and masonry substructure elements is 25-50 years given their current condition and if maintained properly. Expected maintenance for the structure to achieve this design life is routine tuck pointing of the masonry and removing vegetation growing around the substructure elements.

The steel floorbeams have a triangular stiffener that connects to the steel thru girders above the deck elevation. With the bridge widened to have the traveled way between the thru girders acting as railing, the stiffeners will be exposed to traffic. The stiffeners could be tripping hazards to pedestrians and impact hazards to snowmobile users.

With both the timber deck and concrete deck alternatives, the triangular stiffeners could possibly be removed. Structural analysis would be required to determine if the triangular stiffeners can be removed. The removal of the triangular stiffeners would be costly due to the labor required to break the rivets during construction. We do not recommend leaving the triangular stiffeners in place if a wider deck alternative is desired due to the risk to public users of the bridge.

Removing the existing timber safety rail and using the thru girders as rails presents a safety risk. The top flange of the thru girders and the vertical stiffeners act as snag points for bicyclists and snowmobiles. A safety rail is recommended to remove these snag points and could be set in-line with the edge of the top flange. The rail could be connected to the existing thru girder vertical stiffeners using steel angles or nailing blocks.

A deck that matches the existing layout could also be installed. This would use a similar construction to the Timber Deck Alternative with filler blocks, nail laminated timber transverse planks, and 2-inch thick sacrificial planks. The existing layout has a 9.5-foot wide clear distance between safety rails.

Summary of Alternatives

The estimated cost of the Timber Deck Alternative option is \$268,000 and the Concrete Deck Alternative is \$303,000. Table 1 contains a breakdown of the estimated costs. These estimated costs include all aspects associated with design and construction of the structure rehabilitation. Rehabilitation items includes the cost of the listed above items (tuck pointing, bearings, scour, etc.)

| Alternative | Timber Deck | Concrete Deck | Match Existing |
|----------------------|-------------|---------------|----------------|
| Deck Replacement | \$97,000 | \$120,000 | \$54,000 |
| Rehabilitation Items | \$20,000 | \$20,000 | \$20,000 |
| Removing Braces | \$15,000 | \$15,000 | \$0 |

| | | | |
|-------------------------------------|------------------|------------------|------------------|
| Safety Rail | \$5,000 | \$5,000 | \$5,000 |
| Approach | \$10,000 | \$10,000 | \$10,000 |
| Structure Removal (Deck Removal) | \$20,000 | \$20,000 | \$20,000 |
| Mobilization | \$26,000 | \$29,000 | \$17,000 |
| Subtotal Construction | \$193,000 | \$219,000 | \$126,000 |
| Construction Engineering | \$16,000 | \$18,000 | \$11,000 |
| Design and Permitting | \$39,000 | \$44,000 | \$26,000 |
| Contingency | \$20,000 | \$22,000 | \$13,000 |
| Total Project Cost | \$268,000 | \$303,000 | \$176,000 |

Table 1. Estimated Bridge Costs.

Note: Estimated costs are based on 2023 construction prices.

Over the past 2 years, the construction industry has seen significant price increases. Prices for some services have increased 50% year-over-year. According to Wisconsin Department of Transportation data, bridge construction prices rose by 19.0% in the past year. With the passing of the Bipartisan Infrastructure Bill, demand for services has increased, while contractor capacity has remained about the same. The expectation is prices for the 2024 construction season will be higher than those seen in 2023.

Joseph L. Bluma, PE, CBI
Structural Engineer

BRIDGE INSPECTION REPORT

Wisconsin Dept. of Transportation
DT2007 7/2003 (Replaces DT1544) s.84.17 Wis. Stats.

Inventory Data

| | | | | |
|---|------------------------------|--|--|---|
| Feature On: Wild Goose State Trail | | Maintainer: Fond du Lac County | Structure Number: Wild Goose State Trail Bridge | |
| Feature Under: East Branch Fond du Lac River | | Lat. / Long.: 43.731422, -88.488470 | | |
| Location: 0.19 M East of River Road | | County: Fond du Lac | Municipality: Town of Fond du Lac | |
| Inv Rating: - | Rdwy Width: 9.4 ft | Deck Width: 9.4 ft | Existing Posting: - | |
| Oper Rating: - | Total Length: 77.4 ft | Deck Area: 728 sf | ADT On: - | Yr: - ADT Under: - Yr: - |

Inspection Type (* = Additional Applicable Form(s) Required)

| | Routine Visual | Fracture Critical* | In-Depth* | UW-Dive* | UW-Surv.* | UW-Probe/ Visual* | Movable* |
|--------------|-------------------|--------------------|-----------|-------------|-------------------------|----------------------|----------|
| Last Insp. | | - | - | - | - | - | - |
| Frequency | | - | - | - | - | - | - |
| Recom. Freq. | | - | - | - | - | - | - |
| | Initial* | Damage | Interim | Load Posted | SI & A Field Review* | | |
| Last Insp. | 10/19/2023 | - | - | - | | | |
| Frequency | N/A | - | - | - | | | |
| Recom. Freq. | N/A | - | - | - | Item No. Needing Change | | |

Load Rating Information

| | | | | |
|---|---------------------------|---------------------------|----------------------------|---------------------------|
| Overburden | File Meas. (in): - | File Insp. Date: - | Insp. Meas. (in): - | Type: - |
| Section Loss | File Meas. (%): - | File Insp. Date: - | Insp. Meas. (%): - | Describe: - |
| Should structure be re-rated for load carrying capacity? (Y/N) N | | | Reason: - | Date last rated: - |

Expansion Joints

| Location | Type | Temp. | | | Signing Condition | | | |
|----------|------|-----------------|------------------|-----------------|--------------------|------|---------------|----------|
| | | File Insp. Date | File Insp. (in.) | New Insp. (in.) | Type of Marker | File | Y N N/A | Comments |
| | | | | | Bridge Markers | | | |
| | | | | | Narrow Bridge | | | |
| | | | | | One Lane Road | | | |
| | | | | | Vertical Clearance | | | |
| | | | | | Weight Limit | | | |
| | | | | | Other(Addl. Sign) | | | |

Clearances (Cardinal = N or E)

| | File Meas. (ft.) | File Date | New Meas. (ft.) |
|--|------------------|-----------|-----------------|
| Min. Vertical Clearance Under (Cardinal) | | | |
| Min. Vertical Clearance Under (Non-Cardinal) | | | |
| Min. Vertical Clearance On | | | |

Structure Type

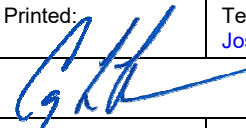
Construction/Rehabilitation History

| Material | Configuration | # of Spans | Overall Length (ft) | Year | Work Performed | Plan | Shop |
|--------------|-----------------------|------------|---------------------|------|----------------|------|------|
| Steel | Through Girder | 1 | 77.4 | | | | |
| | | | | | | | |
| | | | | | | | |

Inspection Information

| Special Requirements | Y/N | Comments |
|----------------------|-----|---|
| Traffic Control | | |
| Access Equipment | Y | Waders and Climbing Gear |
| Other | Y | Vehicle access to the bridge from River Road |

Inspector Information

| | | | |
|--|---|--|--|
| Team Leader Name and No. Printed: Cory L. Thomson (9550) | | Team Member(s) Name(s) Printed: Joseph L. Bluma (9719) | |
| Team Leader Signature: |  | Insp. Date: 10/19/2023 | Inspection Agency: CONSULTANT (10) |
| District/Local Manager and No. Printed: | District/Local Manager Signature: | | Review Date: |

| Element Inspection (X) Check Elements Inspected | | | | | | Structure Number: Wild Goose State Trail Bridge | | | | |
|---|------|--------|---|------|-----------|---|-----|-----|-----|--|
| Ck | Elem | Defect | Description | Unit | Total QTY | Quantity in Condition States | | | | |
| | | | | | | 1 | 2 | 3 | 4 | |
| | 31 | | Timber Deck | SF | 728 | | 487 | 241 | | |
| X | | | Comments: The timber deck boards sit on top of timber railroad ties and act as the wearing surface. CS2 – Outside edges of the timber deck boards are in fair condition with minor surface rot with up to 1/8-inch wide checks throughout (495 SF). CS3 – Moderate to heavy wear of the timber deck boards down the centerline (3 feet wide) exposing fasteners with some of them raised up. Wear up to a 3/8-inch deep (232 SF). CS3 – Timber boards at the north end of bridge have moderate rot with small areas of section loss (covered in quantity above.). CS3 – North timber header 50% section loss from split (9 SF). | | | | | | | |
| | 156 | | Timber Floor Beams | SF | 728 | | | 546 | 182 | |
| X | | | Comments: CS3/CS4 – The timber railroad ties under the timber deck boards are in poor to severe with heavy rot and moderate to heavy section loss of the ties at the ends (75% CS3 = 546 SF, 25% CS4 – 182 SF). | | | | | | | |
| | 107 | | Steel Open Girder | LF | 150 | | 149 | 1 | | |
| X | | | Comments: CS2 – Minor surface corrosion throughout both through girders with some minor pack rust between cover plates. Bent vertical stiffener outside of the east girder near the south end (149 LF). CS3 – Minor damage/gouge to the top of the east through girder north end (1 LF). | | | | | | | |
| | 113 | | Steel Stringer | LF | 310 | | 310 | | | |
| X | | | Comments: CS2 – Minor surface corrosion throughout all stringers. A little heavier surface corrosion at the stringer and floor beam connection. | | | | | | | |
| | 152 | | Steel Floor Beam | LF | 102 | | 102 | | | |
| X | | | Comments: CS2 – Minor surface corrosion throughout all floor beams. A little heavier surface corrosion at the stringer and floor beam connection. | | | | | | | |
| | 217 | | Masonry Abutment | LF | 53 | | 17 | 36 | | |
| X | | | Comments: Constructed of limestone blocks of varying sizes South Abutment: CS2 – Approximately 50% of the abutment joints have loose or delaminated mortar (17 LF). CS3 – Approximately 10% of the abutment joints are missing mortar. Primarily below the deck (9 LF). The timber abutment cap has minor surface checks and rot at ends. West end is split with moderate decay and rot. North Abutment: CS3 – Approximately 70% of the abutment joints are missing mortar. Open joints are 2 inches wide and up to 8 inches deep. The rest of mortar joints are loose and deteriorated. CS3 – Top row of stone there is a wide crack/split in stone under the NE bearing. The timber abutment cap is split at the west and east ends. Moderate surface rot up to 1/8-inch checks throughout. | | | | | | | |
| | 316 | | Bearings | EA | 4 | | 1 | 3 | | |
| X | | | Comments: North Bearings: CS3 - Appear to be movable bearings. Heavy sediment and debris build up around both bearings. Minor surface corrosion with no apparent loss of section. Timber bearing pads have moderate to heavy rot and deterioration at the ends. Keeper bolt is sheared off in both bearings. The through girder in NE quadrant has moved past alignment hole approximately 4 inches and girder is tight against the backwall. Through girder in NW quadrant has moved past alignment hole approximately 2 inches. South Bearings: CS3 – Appear to be fixed bearings. SW bearing has a 1 inch diameter x 2 inches deep hole in the filler plates (1 EA). CS2 – Both bearings have minor surface corrosion with no apparent loss of section (1 EA). | | | | | | | |
| | 332 | | Timber Railing | LF | 156 | | 139 | 17 | | |
| X | | | Comments: CS2 – Timber railing has minor to moderate checks, weathered, and minor surface rot throughout. CS3 – West toe rail has a split between the post 7S and 8S (1 LF). CS3 – Both end posts at the north end are loose (8 LF). CS3 – Middle rail on both rails at the south end are not connected to end posts (8 LF). | | | | | | | |
| | 8400 | | Integral Wingwall | EA | 4 | | | 4 | | |
| X | | | Comments: CS3 – Wingwalls are like the abutments with missing mortar at the joints and the existing mortar is loose and deteriorated. | | | | | | | |

| | | | | | | | | | |
|---|--|-------------------------------|----|---|---|---|---|--|--|
| | 9001 | Drainage – Structure Approach | EA | 4 | 1 | 2 | 1 | | |
| X | Comments: CS3 – Moderate to heavy erosion in the SW quadrant which is beginning to encroach into the pathway. Approach slopes are mostly heavily vegetated. CS2 – Minor erosion of the approach slope in the SE and NW quadrant. Approach slopes are mostly heavily vegetated. CS1 - NE approach slopes are heavily vegetated and appear to be stable. | | | | | | | | |
| | 9011 | Utilities | EA | 1 | 1 | | | | |
| X | Comments: There is a 2-inch conduit attached to the outside of the west through girder. | | | | | | | | |
| | 9030 | Signs Object Markers | EA | 2 | | 2 | | | |
| X | Comments: CS2 – Object markers only at the south approach. SE and SW object markers are slightly faded. | | | | | | | | |
| | 9045 | Slope Protection – Riprap | EA | 2 | | 1 | 1 | | |
| X | Comments: CS3 – South abutment has sparse and displaced riprap with minor to moderate scour up to 2 feet deep in front of the abutment. CS2 – North abutment has sparse riprap but slope appears to be stable. | | | | | | | | |
| | 9169 | Lateral Bracing | EA | 1 | | 1 | | | |
| X | Comments: CS2 – Lateral bracing present in between each floor beam. All lateral bracing has minor surface corrosion with no apparent loss of section. | | | | | | | | |
| | 9324 | Approach Roadway – Gravel | EA | 2 | | | 2 | | |
| X | Comments: CS3 – South approach has settled up to 1 inch at the end of timber deck. CS3 – North approach has settled up to 3-inches and there is a minor sinkhole 6" x 6" x 3" deep adjacent to the header. | | | | | | | | |

General Inspection/Maintenance Notes

- There is no approach rail at the north approach.
- Both south approach rails do not attach to the end of bridge. There is damage to the post nearest to the bridge in both rails.
- Up and downstream channel banks are undercut up to 3 feet exposing roots, but heavily vegetated and appear to be stable.
- There is a rocky ledge or a rock weir underneath the bridge which restricts the flow a little.
- There is moderate to heavy vegetation/brush/trees along wingwalls and fascia.

| NBI Ratings | | | | | |
|----------------|------|-----|----------|------|-----|
| NBI | File | New | NBI | File | New |
| Deck | | 4 | Culvert | | N |
| Superstructure | | 6 | Channel | | 6 |
| Substructure | | 4 | Waterway | | 9 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

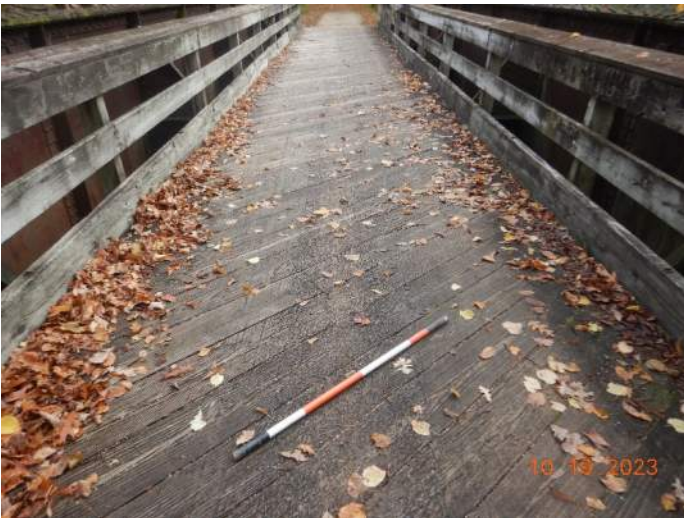
| Maintenance Recommendations | | |
|-----------------------------|----------|--|
| Item | Priority | Comments |
| 31/156/332 | H | Replace timber deck boards, railroad ties, railing. |
| 217/8400 | M | Tuck point masonry abutments and wingwalls. |
| 316 | H | Clean sediment and debris away from the north abutments. Replace the deteriorating timber bearing pads at north abutment. Fill hole in SW bearing with metallic epoxy. |
| 9001 | M | Repair the erosion in the SW quadrant. |
| 9045 | M | Repair the scour in front of the south abutment. |
| 9324 | H | Add gravel to both approaches to provide a smooth transition to the bridge deck. |
| Other | H | Remove trees/brush/vegetation along wingwalls and bridge fascia. |



South approach looking north.



East profile (downstream).



Typical wearing surface.



Typical deck underside.



Typical abutment.



Typical missing mortar in joints at north abutment (south abutment similar).



Wide crack in abutment stone cap at north abutment east end.



Overview of bearing (NE shown).



Typical debris and sediment buildup around bearing (NW shown).



Rotten timber bearing pad under the NE bearing.



Broken keeper rod at the NE bearing.



Through girder tight against backwall in NE quadrant.



Broken keeper rod at the NW bearing



Through girder with minimal gap at backwall in NW quadrant



Hole in filler plates at SW bearing.



Typical minor surface corrosion of all steel members. Overview of floor beam through truss connection.



Typical floor beam to stringer connection.



Typical through girder, floor beam, lateral bracing connection.



Typical triangular connection to through girder and floor beam.



Bent outside stiffener east through girder south end.



Minor damage to through girder NE quadrant.



Typical deterioration of timber railroad ties.



Typical deterioration, severe rot, and section loss of timber railroad ties.



Typical timber cap split and rotten (NE quadrant shown).



Moderate to heavy wear of deck boards down centerline.



Rotten timber deck boards with minor section loss at north end.



Split toe rail in the NE quadrant.



Split and portion missing timber header at north approach.



Minor sinkhole at the north approach.



Typical settlement of gravel approaches (south shown).



Typical approach rail in south approach not connected to structure.



Erosion and settlement of shoulder and approach slope in SW quadrant.



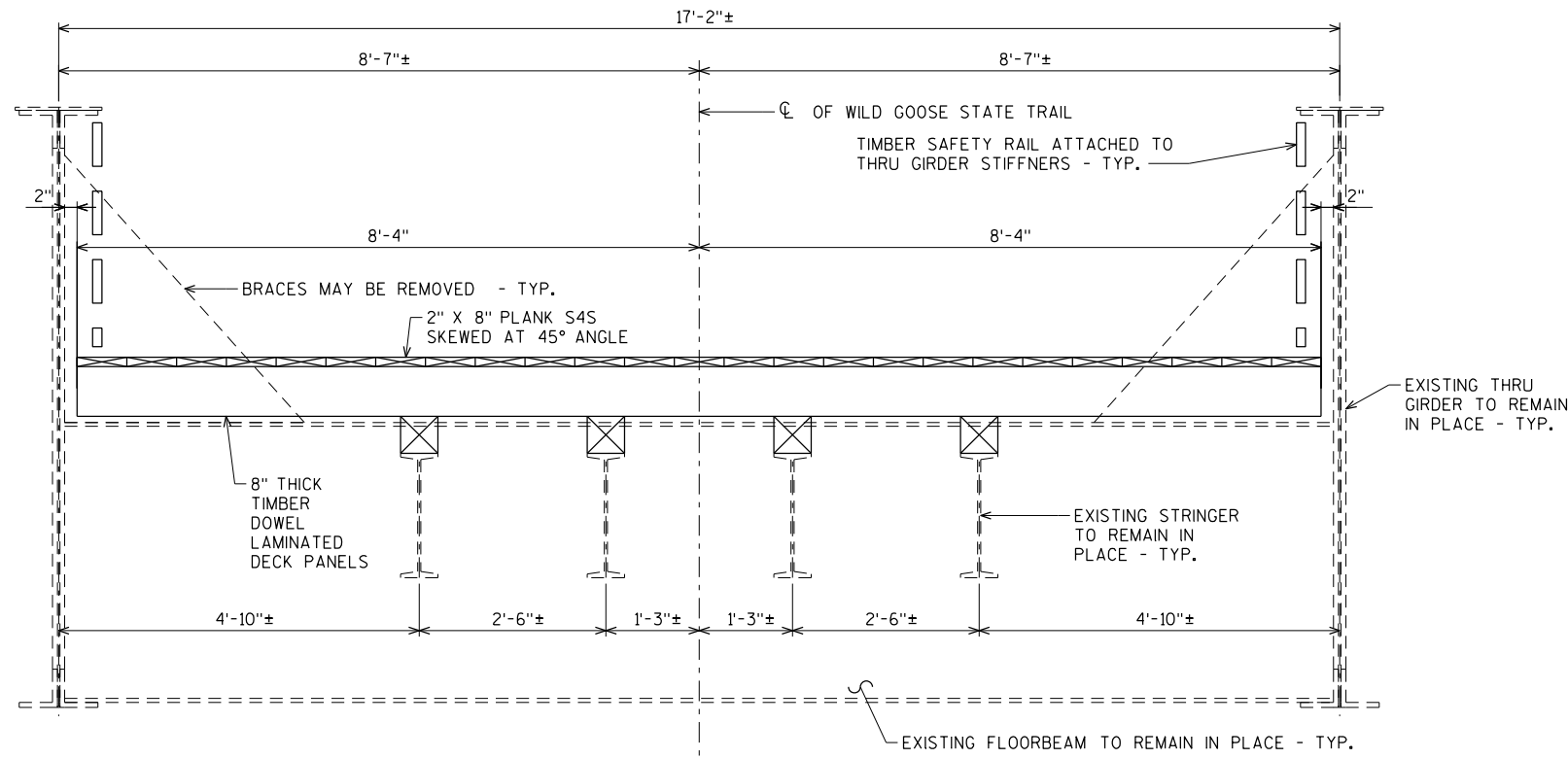
Typical tree growth along wingwalls (fascia similar).



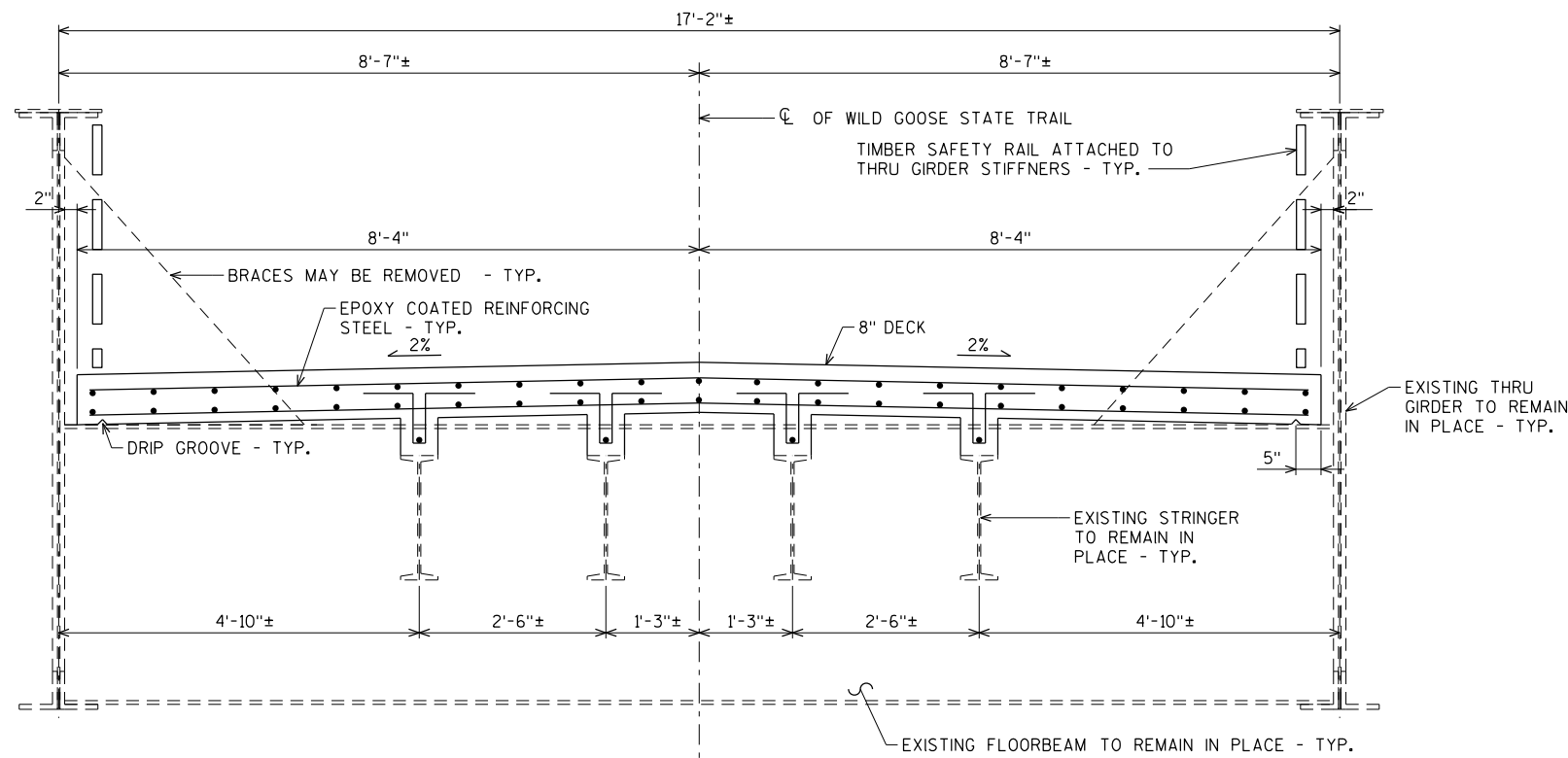
Minor to moderate scour in front of south abutment.

11/20/2023
PENTABLE:Bredu_shd_util.tbl

DATE: DATE:
CHECKED BY: BACK CHECKED BY:
CORRECTED BY:



TIMBER DECK ALTERNATIVE



CONCRETE DECK ALTERNATIVE

| NO. | DATE | REVISION | BY |
|--|--------------|-------------------|--------------|
| ORIGINAL PLANS PREPARED BY AVRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com | | | |
| WILD GOOSE STATE TRAIL | | | |
| COUNTY | | TOWN/CITY/VILLAGE | |
| FOND DU LAC | | FOND DU LAC | |
| DESIGN SPEC. REHABILITATION N/A | | | |
| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
| | | JLB | DNS |
| ALTERNATIVES | | | SHEET 1 OF 1 |

CONSULTANT CONTACT:
JOE BLUMA
(715)-834-3161

I.D.

DATE:

| Alternative | Timber Deck |
|-------------------------------------|------------------|
| Deck Replacement | \$104,000 |
| Rehabilitation Items | \$25,000 |
| Removing Braces | \$17,000 |
| Safety Rail | \$6,000 |
| Approach | \$11,000 |
| Structure Removal (Deck Removal) | \$22,000 |
| Mobilization | \$28,000 |
| Subtotal Construction | \$213,000 |
| Construction Engineering | \$18,000 |
| Design and Permitting | \$43,000 |
| Contingency | \$22,000 |
| Total Project Cost | \$296,000 |

Table 2. 2026 Estimated Bridge Costs.