



3205 US-23 South
Alpena, MI 49707
Ph: 989-356-6375
Fax: 989-354-8286

Structure Number 13 – Hubert Road over Thunder Bay River Bridge Replacement

The Alcona County Road Commission is requesting funding from the Local Bridge Program to replace the Hubert Road Bridge over Thunder Bay River, Structure Number 13. Full replacement of the bridge is proposed based on its condition and the undersized stream opening. The structure has a 2023 ADT of 2375.

This structure was constructed in 1955 and has a HMA surface over 5-barrel corrugated metal pipes. There is settlement in the north shoulder over barrels 2W and 3W. There are weight limit signs in place on both ends of the bridge and there are advanced warning weight limit signs in place. There are numerous holes in the existing culverts and a high rate of flow.

There is heavy rust and scale following the waterline along each of the barrels. In addition, there is heavy spalling and scaling on the headwalls. The proposed structure at this location will likely include concrete beams at an approximate 100-foot span, in accordance with Item 76 – Length of Structure Improvement of the MDOT SI&A Coding Guide. The clear width of the proposed bridge will be 30 feet, based on future plans for the road and current County standards. Currently we are proposing to detour traffic during construction of the new structure, however this may become impossible over time and require that it be built using part width construction.

1. Please consider the following regarding this application:

a. The responsible party for this structure is as follows:

Jesse Campbell, Manager
Alcona County Road Commission
PO Box 43
301 N Lake Street
Lincoln, MI 48742
manager@alconacrc.com
989-736-8168

b. This application is for full replacement of the existing structure.

c. This structure is located on a rural county major collector and is a major thru route for the farming community, people traveling to and from work, and traffic traveling between southern and northern destinations. This crossing is important for emergency responders as well. The structure is located on the only road to go around the north side of Hubbard Lake, if this structure were to be closed the effects would be devastating for the local economy and emergency response times. The ADT is anticipated to continue to increase and

Structure Number 13 – Hubert Road over Thunder Bay River Bridge Replacement

expected to increase to approximately 3000 by 2043. If this structure were to fail it would divide the village of Hubbard Lake and create long detours for local residents to reach destinations across the river.

- d. A detour is currently not in place for this structure but has the current load postings:

16 Ton

24 Ton

41 Ton

- e. If the structure were closed, the detour would dramatically affect the farming community, residents that rely on this route to commute to work, seasonal businesses by restricting the tourist industry, disrupt bus routes and lengthen the emergency response times. Available alternate routes for this crossing, if a closure becomes necessary, would include a long detour of about 10 miles but this can only be done if Wolf Creek Rd is paved and brought up to be an all-season route. If that was not done, the detour route would span the entire perimeter of Hubbard Lake. The route around Hubbard Lake has many areas with sharp turns, narrow roads, and heavy residential areas. These long and complicated detours would require additional road maintenance on the roads used for the detour and negatively impact emergency response times.
- f. The structure is currently open.
- g. The Alcona County Road Commission performs routine maintenance on this bridge to maintain the bridge in working condition, however funding is tight and the winter maintenance season has dramatically reduced the funding available to perform this necessary maintenance. In addition, the bridge is deteriorating past the point that maintenance will be adequate to maintain its working condition.
- h. The Bridge Inspector Work Recommendations are included with this application

- 2. The most recent SI&A form, Bridge Inspection Report, and Work Recommendations are included with this submittal.



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- 3. A legible map showing locations of emergency facilities and schools is included with this submittal. Although this portion of Hubbard Lake Road is not currently an all-season road, it will become as all season route in the future. Therefore, the best available all-season alternate route for this crossing, if a closure becomes necessary, would include a long detour of approximately 10 miles.
- 4. Pictures are included that were taken at the time of the most recent bridge inspections. The pictures show at a minimum the structures alignment, current posting signs, and profile view.
- 5. This application is for a total bridge replacement and has additional photos attached showing the structures deficiencies.
- 6. A breakdown of the estimated replacement cost is attached, and summarized as follows:

A. Approach Construction	(A)	\$ 449,380
B. Structure Construction	(B)	\$2,656,620
Total (A & B)	Total	\$3,106,000

The total includes contingency, mobilization, and inflation per the attached 2025 LAP Bridge Scoping Cost Estimate Worksheet.

- 7. Four applications have been submitted for funding consideration, the Alcona County Road Commission requests that they are considered in the following order:
 - 1. Hubert Rd over Thunder Bay River (Str. No. 13)
 - 2. F4001 over AuSable River (Str. No. 19)
 - 3. Cruzen Road over S. Br. Pine River (Str. No. 29)
- 8. A current resolution, signed and dated, from the Alcona County Road Commission supporting the project is attached.

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13 CULVERT SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
HURBERT ROAD	44.8591 / -83.5953	01200010000B010	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
THUNDER BAY RIVER	65 / 36.7 / 5	County: Alcona(1)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
1 MI N 6.5 MI W OF SPRUCE	1955 / / /	Alpena(1)	P Posted for load(162441)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
North(2) / Alcona(1)	3 Steel / 19 Culvert	05/08/2024 / R6TT	5 Stable w/in footing	

CULVERT INSPECTION R6TT

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Eric Rickert	Great Lakes Engineering Group	12	05/08/2024

GENERAL NOTES

HMA over culvert has a few full width transverse cracks including at east reference line. Settlement in the north shoulder over barrels 2W and 3W.

Weight limit signs in place on both ends of bridge	YES
Weight limit shown on signs at bridge	162441
Required advance warning weight limit signs in place	YES
Weight limit shown on advance warning signs	162441

NBI INSPECTION


	05/22	05/23	05/24	
1. Culvert Rating (SIA-62)	4	4	4	(05/24) (05/23) (05/22)
2. Channel (SIA-61)	5	5	5	Fast flow from south to north through barrels. Riprap in channel along upstream side. Channel deepens to 6'-8' deep 10' downstream of culvert. Timber debris stuck at the inlet of barrel 3W removed. Rocky and sandy channel bottom on both ends. (05/24) Fast flow from south to north through barrels. Riprap in channel along upstream side. Channel deepens to 6'-8' deep 10' downstream of culvert. Timber debris stuck at the inlet of barrel 3W, debris is accelerating flow through barrels 1W-3W. Rocky and sandy channel bottom on both ends. Water is roughly 6"-12" higher than previous inspections. (05/23) Fast flow through barrels. Riprap in channel along upstream side. Channel deepens to 6'-8' deep 10' downstream of culvert. Timber debris stuck at the inlet of barrel 3W and 5W. Rocky and sandy channel bottom on both ends. (05/22)
3. Scour	4	4	4	Fast flow through barrels creating a scour hole 10' downstream of culvert. Upstream end, small pockets of undermining up to 6" deep between barrels 1W/2W and 2W/3W, and at downstream end between barrels 2W/3W. (05/24) Fast flow through barrels creating a scour hole 10' downstream of culvert. Upstream end, small pockets of undermining up to 6" deep between barrels 1W/2W and 2W/3W, and at downstream end between barrels 2W/3W. (05/23) Fast flow through barrels creating a scour hole 10' downstream of culvert. No undermining at culvert outlets. Upstream end, small pockets of undermining up to 6" deep between barrels 1W/2W and 2W/3W. (05/22)

AASHTO ELEMENTS (English Units)

Element Number	Element Name	Total Quantity	Unit	Good CS1	Fair CS2	Poor CS3	Severe CS4
Culvert							
240	Steel Culvert	184	ft	0 0%	0 0%	144 78%	40 22%
5-barrel CMP. Heavy rust and scale below the waterline of all five barrels. Inspector was able to poke one (1) new hole in the east wall of barrel 2W and 5W. Previous comments: Barrel 1W, no holes along the waterline. Barrel 2W, heavier scale along the east waterline with 5 holes. Barrel 3W, three holes along the east waterline. Barrels 4W and 5W, numerous holes along the east waterline of both barrels. Settlement in north shoulder over barrels 2W and 3W.							
863	Culvert Headwall	2		0 0%	0 0%	0 0%	2 100%

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13 CULVERT SAFETY INSPECTION REPORT

Facility HURBERT ROAD	Latitude / Longitude 44.8591 / -83.5953	MDOT Structure ID 01200010000B010	Structure Condition Poor Condition(4)	
Feature THUNDER BAY RIVER	Length / Width / Spans 65 / 36.7 / 5	Owner County: Alcona(1)		
Location 1 MI N 6.5 MI W OF SPRUCE	Built / Recon. / Paint / Ovly. 1955 / / /	TSC Alpena(1)	Operational Status P Posted for load(162441)	
Region / County North(2) / Alcona(1)	Material / Design 3 Steel / 19 Culvert	Last NBI Inspection 05/08/2024 / R6TT	Scour Evaluation 5 Stable w/in footing	

Concrete headwalls. Both have leaching horizontal cracks throughout and heavy spalling/scaling along the top and near the waterline.

MISCELLANEOUS

Guard Rail

<u>Item</u>	<u>Rating</u>
36A. Bridge Railings	1
36B. Transitions	1
36C. Approach Guardrail	1
36D. Approach Guardrail Ends	1

Other Items

<u>Item</u>	<u>Rating</u>
71. Water Adequacy	7
72. Approach Alignment	8
Special Insp. Equipment	2
Underwater Insp. Method	1

RECOMMENDATIONS & ACTION ITEMS

Recommendation Type	Priority	Description
Seal Cracks	L	Seal cracks in surface as needed.
Header Repair	H	Patch spalls and delamination in headwalls.
Culvert Repl.	H	Schedule replacement.
Other	M	Fill in low spot/settlement along north shoulder.

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SUPPORTING IMAGES

R6TT 05/08/2024



Document Name: IMG_5681 conv.jpeg
 Category: Elevation
 Span Number:
 Comments: S elevation

Document Name: IMG_5682 conv.jpeg
 Category: Elevation
 Span Number:
 Comments: N elevation



Document Name: IMG_5683 conv.jpeg
 Category: Elevation
 Span Number:
 Comments: Looking through from E approach




Document Name: IMG_5686 conv.jpeg
 Category: Elevation
 Span Number:
 Comments: Looking S off structure

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Region / County	Material / Design	Last NBI Inspection		
North(2) / Alcona(1)	3 Steel / 19 Culvert	05/08/2024 / R6TT		



Document Name: IMG_5687 conv.jpeg
 Category: Elevation
 Span Number:
 Comments: Looking N off structure



Document Name: IMG_5665 conv.jpeg
 Category: Posting
 Span Number:
 Comments: E advanced posting



Document Name: IMG_5666 conv.jpeg
 Category: Posting
 Span Number:
 Comments: W advanced posting



Document Name: IMG_5689 conv.jpeg
 Category: Posting
 Span Number:
 Comments: W posting

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Document Name: IMG_5690 conv.jpeg
 Category: Posting
 Span Number:
 Comments: E posting



Document Name: IMG_5684 conv.jpeg
 Category: Railing
 Span Number:
 Comments: S rail



Document Name: IMG_5685 conv.jpeg
 Category: Railing
 Span Number:
 Comments: N rail




Document Name: IMG_5688 conv.jpeg
 Category: Deck
 Span Number:
 Comments: Deck surface - typ.

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Document Name: IMG_5667 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 1W from S



Document Name: IMG_5668 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 2W from S



Document Name: IMG_5669 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 3W from S




Document Name: IMG_5671 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 5W from S

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Region / County	Material / Design	Last NBI Inspection		
North(2) / Alcona(1)	3 Steel / 19 Culvert	05/08/2024 / R6TT		



Document Name: IMG_5672 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 2W, E wall, hammer in hole - typ.



Document Name: IMG_5673 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 2W, E wall, existing holes - typ.



Document Name: IMG_5674 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 4W, E wall, hammer in hole - typ.




Document Name: IMG_5676 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 5W, W wall, scale at WL

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Region / County	Material / Design	Last NBI Inspection		
North(2) / Alcona(1)	3 Steel / 19 Culvert	05/08/2024 / R6TT		



Document Name: IMG_5680 conv.jpeg
 Category: Culvert
 Span Number:
 Comments: Barrel 5W, E wall, scale at WL




Document Name: IMG_5670 conv.jpeg
 Category: Channel
 Span Number:
 Comments: Barrel 4W from S

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STRUCTURE INVENTORY AND APPRAISAL

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
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Bridge History, Type, Materials

27 - Year Built	1955
106 - Year Reconstructed	
202 - Year Painted	
203 - Year Overlay	
43 - Main Span Bridge Type	3 19
44 - Appr Span Bridge Type	
77 - Steel Type	2
78 - Paint Type	3
79 - Rail Type	1
80 - Post Type	0
107 - Deck Type	N
108A - Wearing Surface	N
108B - Membrane	0
108C - Deck Protection	0

Structure Dimensions

34 - Skew	0
35 - Struct Flared	N
45 - Num Main Spans	5
46 - Num Apprs Spans	0
48 - Max Span Length	12.8
49 - Structure Length	65
50A - Width Left Curb/SW	0
50B - Width Right Curb/SW	0
33 - Median	0
51 - Width Curb to Curb	33.1
52 - Width Out to Out	36.7
112 - NBIS Length	Y

Inspection Data

90 - Inspection Date	05/08/2024
91 - Inspection Freq	12
92A - Frac Crit Req/Freq	N
93A - Frac Crit Insp Date	
92B - Und Water Req/Freq	N
93B - Und Water Insp Date	
92C - Oth Spec Insp Req/Freq	N
93C - Oth Spec Insp Date	
92D - Fatigue Req/Freq	N
93D - Fatigue Insp Date	
176A - Und Water Insp Method	1
58 - Deck Rating	N
58A/B - Deck Surface/Bottom	
59 - Superstructure Rating	N
59A - Paint Rating	
60 - Substructure Rating	N
61 - Channel Rating	5
62 - Culvert Rating	4

Navigation Data

38 - Navigation Control	0
39 - Vertical Clearance	0
40 - Horizontal Clearance	0
111 - Pier Protection	
116 - Lift Brgd Vert Clear	

Route Carried By Structure(ON Record)

5A - Record Type	1
5B - Route Signing	4
5C - Level of Service	0
5D - Route Number	00000
5E - Direction Suffix	0
10L - Best 3m Unclr-Lt	0 0
10R - Best 3m Unclr-Rt	99 99
PR Number	
Control Section	
11 - Mile Point	0
12 - Base Highway Network	0
13 - LRS Route-Subroute	0000017262 07
19 - Detour Length	1
20 - Toll Facility	3
26 - Functional Class	07
28A - Lanes On	2
29 - ADT	1730
30 - Year of ADT	2003
32 - Appr Roadway Width	33.1
32A/B - Ap Pvt Type/Width	3 31.99
42A - Service Type On	1
47L - Left Horizontal Clear	0.0
47R - Right Horizontal Clear	30.2
53 - Min Vert Clr Ov Deck	99 99
100 - STRAHNET	0
102 - Traffic Direct	2
109 - Truck %	0
110 - Truck Network	0
114 - Future ADT	2375
115 - Year Future ADT	2023
Freeway	0

Structure Appraisal

36A - Bridge Railing	1
36B - Rail Transition	1
36C - Approach Rail	1
36D - Rail Termination	1
67 - Structure Evaluation	2
68 - Deck Geometry	5
69 - Underclearance	N
71 - Waterway Adequacy	7
72 - Approach Alignment	8
103 - Temporary Structure	
113 - Scour Criticality	5

Miscellaneous

37 - Historical Significance	5
98A - Border Bridge State	
98B - Border Bridge %	
101 - Parallel Structure	N
EPA ID	
Stay in Place Forms	
143 - Pin & Hanger Code	
148 - No. of Pin & Hangers	

Route Under Structure (UNDER Record)

5A - Record Type	
5B - Route Signing	
5C - Level of Service	
5D - Route Number	
5E - Direction Suffix	
10L - Best 3m Unclr-Lt	
10R - Best 3m Unclr-Rt	
PR Number	
Control Section	
11 - Mile Point	
12 - Base Highway Network	
13 - LRS Route-Subroute	
19 - Detour Length	
20 - Toll Facility	
26 - Functional Class	
28B - Lanes Under	
29 - ADT	
30 - Year of ADT	
42B - Service Type Under	5
47L - Left Horizontal Clear	
47R - Right Horizontal Clear	
54A - Left Feature	
54B - Left Underclearance	99 99
54C - Right Feature	
54D - Right Clearance	99 99
Under Clearance Year	
55A - Reference Feature	N
55B - Right Horiz Clearance	99.9
56 - Left Horiz Clearance	0
100 - STRAHNET	
102 - Traffic Direct	
109 - Truck %	
110 - Truck Network	
114 - Future ADT	
115 - Year Future ADT	
Freeway	

Proposed Improvements

75 - Type of Work	31 1
76 - Length of Improvement	100
94 - Bridge Cost	675
95 - Roadway Cost	80
96 - Total Cost	90
97 - Year of Cost Estimate	2003

Load Rating and Posting

31 - Design Load	0
41 - Open, Posted, Closed	P
63 - Fed Oper Rtg Method	6
64F - Fed Oper Rtg Load	.53
64MA - Mich Oper Rtg Method	6
64MB - Mich Oper Rtg	.94
64MC - Mich Oper Truck	6
65 - Inv Rtg Method	6
66 - Inventory Load	.32
70 - Posting	0
141 - Posted Loading	162441
193 - Overload Class	

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13		SAFETY INSPECTION REPORT - AASHTO ELEMENTS		
Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
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NBI INSPECTION **R6TT**

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Eric Rickert	Great Lakes Engineering Group	12	05/08/2024

AASHTO ELEMENTS **(English Units)**


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863	Culvert Headwall	2		0 0%	0 0%	0 0%	2 100%
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Concrete headwalls. Both have leaching horizontal cracks throughout and heavy spalling/scaling along the top and near the waterline.


MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13		WORK RECOMMENDATIONS		
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WORK RECOMMENDATIONS

R6TT

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13		SCOUR CRITICAL BRIDGE ACTION PLAN		
Facility HURBERT ROAD	Latitude / Longitude 44.8591 / -83.5953	MDOT Structure ID 01200010000B010	Structure Condition Poor Condition(4)	
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No plan available for bridge key 01200010000B010

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LOAD RATING SUMMARY

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Compliance Issue: None
Compliance Verified: No
Analysis Program: MDOT CMP Spreadsheet
Analysis Program Version: 2.0
Rating Considers Field Condition of Members: Yes **Inspection Date:** 05/18/2022
Controlling component and failure mode:

Cover requirements

NEW INVENTORY CODING

NBI Item 63 - Operating Rating Method 6 LFR in Rating Factor
NBI Item 64F - Federal Operating Ratings 0.53
MDOT Item 64MA - Michigan Operating Method 6 LFR in Rating Factor
MDOT Item 64MB - Michigan Operating Rating 0.94
MDOT Item 64MC - Michigan Operating Truck 6
NBI Item 65 - Inventory Rating Method 6 LFR in Rating Factor
NBI Item 66 - Federal Inventory Rating 0.32
NBI Item 41 - Structure Open Posted Closed P P Posted for load
NBI Item 70 - Bridge Posting 0 0 - 59% or less
Posted By Truck Type
MDOT Item 141 - Posted Loading 162441
MDOT Item 193A - Michigan Overload Class
MDOT Item 193C - Overload Status


Sample Sign



R12-5

Analyzed By: Coty Southworth **Date:** 08/18/2023
Checked By: Eric Rickert **Date:** 08/18/2023

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13		REQUEST FOR ACTION		
Facility HURBERT ROAD	Latitude / Longitude 44.8591 / -83.5953	MDOT Structure ID 01200010000B010	Structure Condition Poor Condition(4)	
Feature THUNDER BAY RIVER	Length / Width / Spans 65 / 36.7 / 5	Owner County: Alcona(1)		
Location 1 MI N 6.5 MI W OF SPRUCE	Built / Recon. / Paint / Ovly. 1955 / / /	TSC Alpena(1)	Operational Status P Posted for load(162441)	
Region / County North(2) / Alcona(1)	Material / Design 3 Steel / 19 Culvert	Last NBI Inspection 05/08/2024 / R6TT	Scour Evaluation 5 Stable w/in footing	

No inspections available for bridge key 01200010000B010

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13		OUTSTANDING WORK		
Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
HURBERT ROAD	44.8591 / -83.5953	01200010000B010	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
THUNDER BAY RIVER	65 / 36.7 / 5	County: Alcona(1)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
1 MI N 6.5 MI W OF SPRUCE	1955 / / /	Alpena(1)	P Posted for load(162441)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
North(2) / Alcona(1)	3 Steel / 19 Culvert	05/08/2024 / R6TT	5 Stable w/in footing	

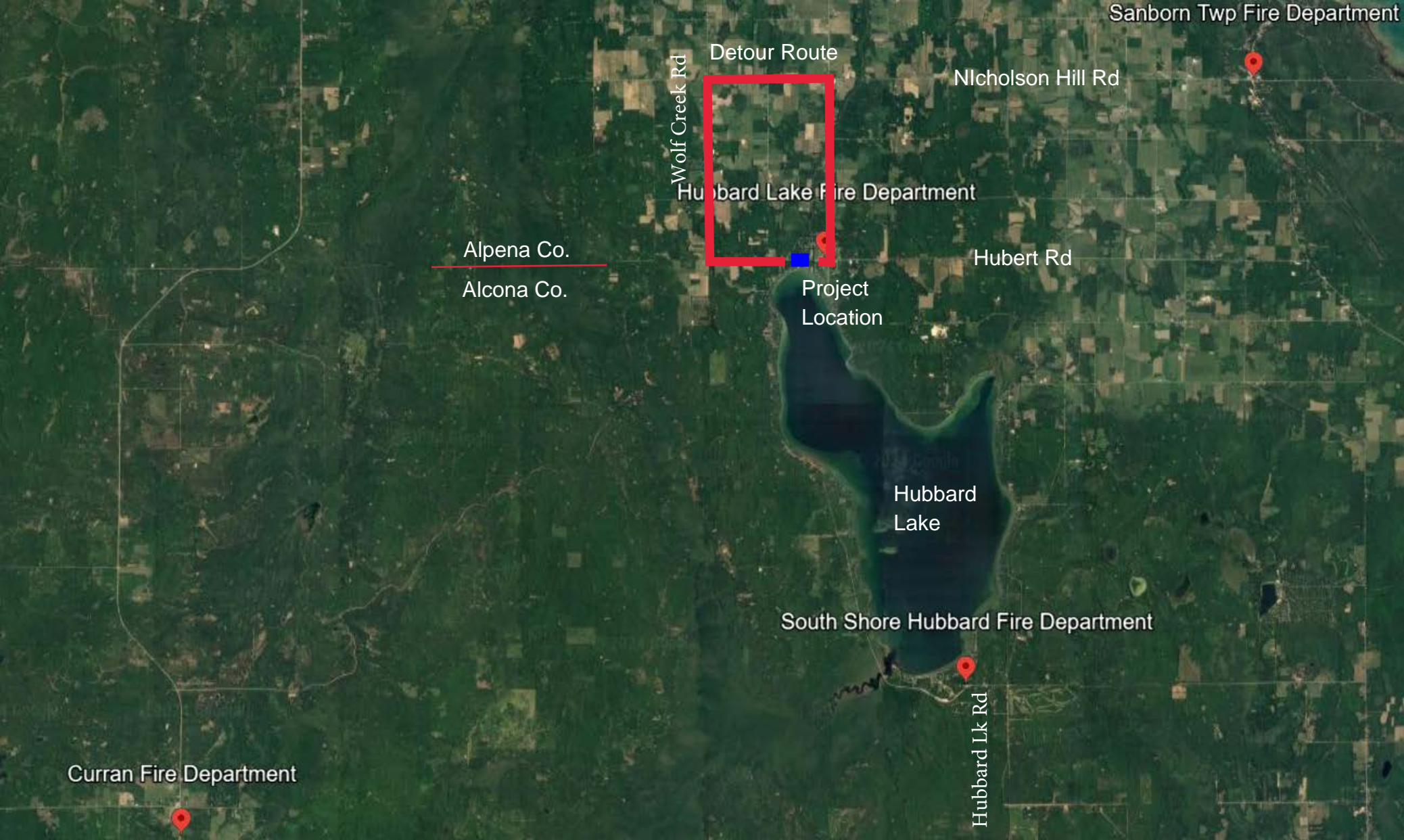
WORK RECOMMENDATIONS

DECKSLABS				
Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Seal Cracks				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments				
Seal cracks in surface as needed. (Eric Rickert 05/16/2024)				

OTHER				
Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Culvert Repl.				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments				
Schedule replacement. (Eric Rickert 05/16/2024)				

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Other				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments				
Fill in low spot/settlement along north shoulder. (Eric Rickert 05/16/2024)				

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Header Repair				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments				
Patch spalls and delamination in headwalls. (Eric Rickert 05/16/2024)				



Sanborn Twp Fire Department

Detour Route

Nicholson Hill Rd

Wolf Creek Rd

Hubbard Lake Fire Department

Alpena Co.

Alcona Co.

Hubert Rd

Project Location

Hubbard Lake

South Shore Hubbard Fire Department

Curran Fire Department

Hubbard Lk Rd

Exhibit 4 - Cost Estimating Worksheet

2025

**BRIDGE COST ESTIMATE WORKSHEET
- CPM, REHAB, REPLACE -**

REV. 02/6/2024

OWNER: Alcona County	FISCAL YEAR: 2028	Out to Out	Curb to Curb	DATE: 5/20/2025
REGION: North		LENGTH	WIDTH	ENGINEER: Rebecca Rivard, P.E.
TSC: Alpena	PR: #N/A MP: #N/A	65.0	36.7	STRUCTURE ID: 13
	LOCATION: HURBERT ROAD over THUNDER BAY RIVER			BRIDGE ID: N/A
PRIMARY WORK ACTIVITY: Bridge Replacement		DECK AREA: 2,386	SFT	STR. TYPE: Steel
OTHER WORK:		CLEAR ROADWAY: 2,152	SFT	Culvert

WORK ACTIVITY	MDOT Bridge Design Guides	QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE (increase deck area based on design standards and hydraulic requirements)					
Single or Multiple Spans, Grade Separation	(add demo, approach, MOT)		SFT	\$435.00 /SFT	
Single Span, Over Water	Length < 100ft (add demo, approach, MOT)	3,000.0	SFT	\$525.00 /SFT	\$1,575,000.00
Multiple Spans, Over Water	Length > 100ft (add demo, approach, MOT)		SFT	\$470.00 /SFT	
Precast Culvert	Length < 40ft (add demo, approach, MOT)		SFT	\$565.00 /SFT	
NEW SUPERSTRUCTURE					
New Superstructure, Grade Separation	(incl. remove exist deck/super; add MOT & approach)		SFT	\$310.00 /SFT	
New Superstructure, Over Water	(incl. remove exist deck/super; add MOT & approach)		SFT	\$315.00 /SFT	
WIDENING					
Structure Widening, _____ ft	(incl. deck/super/sub widening, add approach transition)		SFT	\$630.00 /SFT	
NEW DECK					
New Bridge Deck & Barrier	(incl. remove exist deck/railing, add approach, MOT)		SFT	\$150.00 /SFT	
DEMOLITION					
Entire Structure, Grade Separation			SFT	\$75.00 /SFT	
Entire Structure, Over Water		2,386.0	SFT	\$95.00 /SFT	\$226,670.00
DECK REPAIR / TREATMENTS					
Bridge Railing Replacement	(incl. removal and replacement)		FT	\$750.00 /FT	
Concrete Brush Block / Curb Patch	(incl. hand chipping and formwork)		FT	\$29.00 /FT	
Concrete Barrier Patch	(incl. hand chipping and formwork)		SFT	\$85.00 /SFT	
Concrete Deck Patch	(incl. hand chipping)		SFT	\$68.00 /SFT	
Deep Overlay	(incl. joint repl & hydro)		SFT	\$46.00 /SFT	
Epoxy Overlay	(incl. warranty)		SYD	\$48.00 /SYD	
Expansion Joint Gland Replacement	(remove and replace elastomeric gland)		FT	\$125.00 /FT	
Expansion Joint Replacement	(incl. removal)		FT	\$860.00 /FT	
Full Depth Patch			SFT	\$140.00 /SFT	
Healer / Sealer	(penetrates cracks in bridge deck)		SYD	\$30.00 /SYD	
HMA Overlay with WP membrane			SYD	\$60.00 /SYD	
Overlay Removal	(Epoxy: \$22/syd Latex: \$26/syd HMA: \$7/syd)		SYD	\$22.00 /SYD	
Reseal Bridge Joints			FT	\$28.00 /FT	
Shallow Overlay	(incl. joint repl & hydro)		SFT	\$46.00 /SFT	
SUPERSTRUCTURE REPAIR					
Bearing Realignment / Replacement	(incl. temporary supports)		EA	\$6,450.00 EA	
Heat Straightening	(incl. clean and coat)		EA	\$57,000.00 EA	
Pack Rust Repair	(greater than 3/8" separation)		FT	\$1,150.00 /FT	
Paint - Complete	(incl. clean & coat)		SFT	\$30.00 /SFT	
Paint - Partial / Spot / Zone	(incl. clean & coat - \$20k minimum)		SFT	\$60.00 /SFT	
PCI Beam End Blockout	(incl. temporary supports)		EA	\$7,200.00 EA	
Pin & Hanger Replacement	(incl. temporary supports)		EA	\$17,000.00 EA	
Structural Steel Repair	(based on 6ft repair length)		EA	\$4,000.00 EA	
Structural Steel Repair - Stiffener	(includes each side of beam)		EA	\$1,500.00 EA	
SUBSTRUCTURE REPAIR					
Substructure Patching	(measured x 2) replace if repair area > 30%		CFT	\$360.00 /CFT	
Substructure Replacement	(incl. temporary supports, excavation)		CFT	\$375.00 /CFT	
Substructure Horizontal Surface Sealer			SYD	\$75.00 /SYD	
Temporary Supports	(add Structural Steel Repair - Stiffener for ea steel beam)		EA	\$4,000.00 EA	
MISCELLANEOUS					
Articulating Concrete Block System (ACB)			SYD	\$320.00 /SYD	
Concrete Surface Coating			SYD	\$47.00 /SYD	
Culvert Cleanout			FT	\$125.00 /FT	
Epoxy Crack Injection	(structural crack repair)		FT	\$70.00 /FT	
Metal Mesh Panels	(48" width, max 6'-6" length)		SFT	\$28.00 /SFT	
Pressure Relief Joint	(use when approach concrete roadway exceeds 1,000ft)		FT	\$110.00 /FT	
Riprap	(assume 10ft distance around perimeter of substructure)	150.0	SYD	\$275.00 /SYD	\$41,250.00
Silane Treatment	(penetrating sealer for concrete surfaces)		SFT	\$7.00 /SFT	
Slope Protection Repairs			SYD	\$150.00 /SYD	
Other					

STRUCTURE CONSTRUCTION BUDGET \$1,842,920

ROAD WORK					
Approach Pavement, 12" RC	(incl. removal; add curb, gutter, guardrail) 40' ea. end	300.0	SYD	\$230.00 /SYD	\$69,000.00
Approach Curb & Gutter	(incl. removal) 40' ea. quadrant	160.0	FT	\$57.00 /FT	\$9,120.00
Guardrail Anchorage to Bridge	(each quadrant)	4.0	EA	\$2,540.00 /EA	\$10,160.00
Guardrail	(incl. removal) < 200ft beyond reference line	500.0	FT	\$41.00 /FT	\$20,500.00
Guardrail Terminal	(each quadrant)	4.0	EA	\$3,900.00 /EA	\$15,600.00
Roadway Approach Work	(beyond approach pavement)	1.0	LSUM	\$300,000.00 /LSUM	\$300,000.00
Utilities			LSUM		

TRAFFIC CONTROL <i>Unit Cost to be determined by Region or TSC Traffic & Safety</i>					
Part Width Construction			LSUM		LSUM
Crossovers			EA		/EA
Temporary Traffic Signals			set		/set
RR Flagging			LSUM		LSUM
Detour		1.0	LSUM	\$25,000.00 /LSUM	\$25,000.00

RELATED ROAD/TRAFFIC CONSTRUCTION BUDGET \$449,380

CONTINGENCY	(10% - 20%) (use higher contingency for small projects)	10	%	\$2,292,000.00	\$229,000
MOBILIZATION	(estimate at 10%)	10	%	\$2,521,000.00	\$252,000
INFLATION	(assume 4% per year, beginning in 2025)	12	%	\$2,773,000.00	\$333,000

(Does not include PE or CE)		TOTAL CONSTRUCTION BUDGET		\$3,106,000
(Refer to programming guidelines in Bridge Cost Estimating Worksheet-Key for CE, PE & PE-S)		% CE	CON BUDGET	\$3,106,000
		% PE	PE BUDGET	\$0
		% PE	PE-S BUDGET	\$0



Alcona County Road Commission

301 N. Lake Street | P.O. Box 40 | Lincoln, Michigan 48742

Phone: (989) 736-8168 | Fax: (989) 736-6687

Email: roads@alconacrc.com | Web: alconacrc.com | Find us on 

RESOLUTION 2025-002 ***Bridge Funding Support***

WHEREAS, *The Alcona County Board of Road Commissioners fully supports the efforts to secure State and Federal Local Bridge Program Funds for replacement or preventative maintenance of the bridges in Alcona County*

WHEREAS, *the Alcona County Road Commission will participate in funding the local share of project costs; and*

THEREFORE, BE IT RESOLVED, *that the Alcona County Board of Road Commissioners approve the bridge replacement or preventative maintenance of any bridge structure in Alcona County, Michigan.*

I HEREBY CERTIFY that the above is a true and exact copy of a resolution adopted at a regular meeting of the Board of Alcona County Road Commissioners held at 301 North Lake Street, Lincoln, Michigan on March 11, 2025

A handwritten signature in black ink, appearing to read "Lori M. Grush", is written over a horizontal line.

Lori M. Grush

Alcona County Road Commission

Administrative Assistant and Board Clerk