CITY OF NOVI CITY COUNCIL
MARCH 20, 2023

SUBJECT: Adoption of Resolutions requesting the Michigan Department of Transportation (MDOT) include the existing bridges on 9 Mile Road over Thornton Creek and on Ashbury Drive over the Middle Rouge River in the State Local Bridge Program List for Replacement. If MDOT selects one or both bridges, the City of Novi will accept 100% of the design engineering costs and 5% of the total construction cost.

SUBMITTING DEPARTMENT: Department of Public Works, Engineering Division

BACKGROUND INFORMATION:

The City of Novi retained OHM Advisors to complete the 2022 Annual Bridge Inspection of the twelve City-owned and maintained bridges. This round of inspections identified two bridges recommended for replacement. The first being the bridge on 9 Mile Road over Thornton Creek, recommended for replacement in the next 3-5 years. This bridge was identified in previous inspections. The second bridge is on Ashbury Drive over the Middle Rouge River. Both bridges will be inspected on a more frequent basis (annually vs. bi-annually) until replacement occurs.

These bridges qualify as candidates for the Michigan Department of Transportation (MDOT) Local Bridge Program for replacement. MDOT is currently accepting applications for the (FY 2026) Local Bridge Program. OHM would submit applications to MDOT to include these bridges in the Local Bridge Program. If the bridge is selected, the City would only be responsible for 5% of the construction costs. These projects are currently estimated at $3,214,000 for the Nine Mile bridge and $2,168,000 for the Ashbury bridge, for a total of $5,382,000. The City would be responsible for 100% of the associated design engineering fees in the amount of $349,830 (6.5% of $5,382,000). The estimated construction cost the City would be responsible for is $269,100 (5% of $5,382,000).

As part of the application process, the applicant is required to provide a current resolution, signed, and dated, from the governing board supporting the project. The adoption of the proposed resolution would demonstrate support from the City to MDOT for the replacement of the bridge and that the City will make the reasonable effort necessary to accomplish this effort. Any application not containing a signed resolution will be considered incomplete and will be rejected.

The City Attorney has reviewed the resolution and sees no legal impediment (Beth Saarela, March 9, 2023).

RECOMMENDED ACTION:

Adoption of Resolutions requesting the Michigan Department of Transportation (MDOT) include the existing bridges on 9 Mile Road over Thornton Creek and on Ashbury Drive over the Middle Rouge River in the State Local Bridge Program List for Replacement. If MDOT selects one or both bridges, the City of Novi will accept 100% of the design engineering costs and 5% of the total construction cost.

CITY OF NOVI

COUNTY OF OAKLAND, MICHIGAN

RESOLUTION REQUESTING THAT THE MICHIGAN DEPARTMENT OF TRANSPORTATION INCLUDE THE BRIDGE ON ASHBURY DRIVE OVER THE MIDDLE ROUGE RIVER IN THE STATE LOCAL BRIDGE PROGRAM LIST FOR REPLACEMENT

Minutes of a Meeting of the City Council of the City of Novi, County of Oakland, Michigan, held in the City Hall of said City on March 20, 2023, at 7 o'clock P.M. Prevailing Eastern Time.

PRESENT: Councilmembers_____

ABSENT: Councilmembers_____

The following preamble and Resolution were offered by Councilmember _____and supported by Councilmember _____.

WHEREAS; OHM Advisors, Consulting Engineers for the City of Novi, completed the 2022 annual inspection of twelve bridges in the City; and

WHEREAS; based on the 2022 inspection, OHM Advisors prepared a 2022 Bridge Inspection Report for the bridge on Ashbury Drive over the Middle Rouge River; and

WHEREAS; the 2022 Bridge Inspection Report concludes that the bridge on Ashbury Drive over the Middle Rouge River is in need of replacement; and

WHEREAS; based on the findings and recommendations of OHM Advisors, the DPW Director recommends that City Council authorize OHM Advisors to submit the LAP Bridge Applications to the Michigan Department of Transportation for the bridge on Ashbury Drive over the Middle Rouge River on the Local Bridge Program for Replacement funding; and

WHEREAS; the City of Novi's cost participation amount would be 5% of the total cost and 100% of the design and construction engineering cost; and

WHEREAS; the Mayor and City Clerk are authorized to execute said resolution.

NOW THEREFORE, IT IS THEREFORE RESOLVED that the City of Novi is actively seeking financial participation to replace the bridge on Ashbury Drive over the Middle Rouge River and authorizes OHM Advisors to submit the LAP Bridge application to the Michigan

Department of Transportation to include this bridge on the State Local Bridge Program List for Replacement, to make application for financial assistance from the State of Michigan and Federal Government and to do those things reasonably necessary or required in order to accomplish the replacement of this bridge.

AYES:

NAYS:

RESOLUTION DECLARED ADOPTED.

_____
Cortney Hanson, City Clerk

CERTIFICATION

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the City Council of the City of Novi, County of Oakland, and State of Michigan, at a regular meeting held this _____ day of _____, 2023, and that public notice of said meeting was given pursuant to and in full compliance with Act No. 267, Public Acts of Michigan, 1976, and that the minutes of said meeting have been kept and made available to the public as required by said Act.

_____
Cortney Hanson, City Clerk
City of Novi

CITY OF NOVI

COUNTY OF OAKLAND, MICHIGAN

RESOLUTION REQUESTING THAT THE MICHIGAN DEPARTMENT OF TRANSPORTATION INCLUDE THE BRIDGE ON 9 MILE ROAD OVER THORNTON CREEK IN THE STATE LOCAL BRIDGE PROGRAM LIST FOR REPLACEMENT

Minutes of a Meeting of the City Council of the City of Novi, County of Oakland, Michigan, held in the City Hall of said City on March 20, 2023, at 7 o'clock P.M. Prevailing Eastern Time.

PRESENT: Councilmembers_____

ABSENT: Councilmembers_____

The following preamble and Resolution were offered by Councilmember _____and supported by Councilmember _____.

WHEREAS; OHM Advisors, Consulting Engineers for the City of Novi, completed the 2022 annual inspection of twelve bridges in the City; and

WHEREAS; based on the 2022 inspection, OHM Advisors prepared a 2022 Bridge Inspection Report for the bridge on 9 Mile Road over Thornton Creek; and

WHEREAS; the 2022 Bridge Inspection Report concludes that the bridge on 9 Mile Road over Thornton Creek is in need of replacement; and

WHEREAS; based on the findings and recommendations of OHM Advisors, the DPW Director recommends that City Council authorize OHM Advisors to submit the LAP Bridge Applications to the Michigan Department of Transportation for the bridge on 9 Mile Road over Thornton Creek on the Local Bridge Program for Replacement funding; and

WHEREAS; the City of Novi's cost participation amount would be 5% of the total cost and 100% of the design and construction engineering cost; and

WHEREAS; the Mayor and City Clerk are authorized to execute said resolution.

NOW THEREFORE, IT IS THEREFORE RESOLVED that the City of Novi is actively seeking financial participation to replace the bridge on 9 Mile Road over Thornton Creek and authorizes OHM Advisors to submit the LAP Bridge application to the Michigan Department of Transportation to include this bridge on the State Local Bridge Program

List for Replacement, to make application for financial assistance from the State of Michigan and Federal Government and to do those things reasonably necessary or required in order to accomplish the replacement of this bridge.

AYES:

NAYS:

RESOLUTION DECLARED ADOPTED.

_____
Cortney Hanson, City Clerk

CERTIFICATION

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the City Council of the City of Novi, County of Oakland, and State of Michigan, at a regular meeting held this _____ day of _____, 2023, and that public notice of said meeting was given pursuant to and in full compliance with Act No. 267, Public Acts of Michigan, 1976, and that the minutes of said meeting have been kept and made available to the public as required by said Act.

_____
Cortney Hanson, City Clerk
City of Novi

Candidates for MDOT Bridge Program Funding

Location Map

Taft Rd

Novi Rd

Nine Mile Rd

Nine Mile Bridge
over Thornton Creek

Ashbury Bridge
over Middle Rouge River

Eight Mile Rd

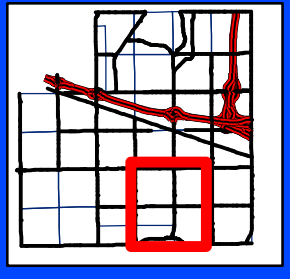
Map Author: Ben Croy
Date: 3/9/2023
Project: Bridge Candidates
Version: v1.0

Amended By:
Date:
Department:

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

Proposed
Bridge Candidate



City of Novi
Engineering Division
Department of Public Works
26300 Lee BeGole Drive
Novi, MI 48375
cityofnovi.org

Feet
0 270 540 1,080 1,620

1 inch = 1,334 feet

Exhibit 4 - Cost Estimating Worksheet

2023

BRIDGE COST ESTIMATE WORKSHEET

- CPM, REHAB, REPLACE -

REV. 01/31/2023

OWNER: NOVI | FISCAL YEAR: 2026 | DATE: 3/13/2023
REGION: Metro | ENGINEER: AJR
TSC: Oakland | PR: 633603 | MP: 5.699

	LENGTH	Out to Out WIDTH	Curb to Curb WIDTH
	26.6	0.0	24.0

STRUCTURE ID: 14274
BRIDGE ID: N/A

LOCATION: 9 MILE ROAD over THORNTON CREEK
PRIMARY WORK ACTIVITY: Culvert Replacement
OTHER WORK:

DECK AREA: N/A SFT
CLEAR ROADWAY: 638 SFT

STR. TYPE: Steel 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	$415.00 /SFT	
Single Span, Over Water	Length < 100ft	(add demo, approach, MOT)		SFT	$500.00 /SFT	
Multiple Spans, Over Water	Length > 100ft	(add demo, approach, MOT)		SFT	$450.00 /SFT	
Precast Culvert	Length < 40ft	(add demo, approach, MOT)	3,360.0	SFT	$540.00 /SFT	$1,814,400.00
NEW SUPERSTRUCTURE						
New Superstructure, Grade Separation		(incl. remove exist deck/super; add MOT & approach)		SFT	$295.00 /SFT	
New Superstructure, Over Water		(incl. remove exist deck/super; add MOT & approach)		SFT	$300.00 /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				SFT	$95.00 /SFT	
Other (Culvert Removal			1.0	LSUM	$30,000.00 LSUM	$30,000.00
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)		SYD	$275.00 /SYD	
Silane Treatment		(penetrating sealer for concrete surfaces)		SFT	$7.00 /SFT	
Slope Protection Repairs				SYD	$150.00 /SYD	
Other		(Scour Countermeasures)	1.0	LSUM	$25,000.00 LSUM	$25,000.00
					STRUCTURE CONSTRUCTION BUDGET	$1,869,400
ROAD WORK						
Approach Pavement, 12" RC		(incl. removal; add curb, gutter, guardrail) 40' ea. end		SYD	$230.00 /SYD	
Approach Curb & Gutter		(incl. removal) 40' ea. quadrant		FT	$57.00 /FT	
Guardrail Anchorage to Bridge		(each quadrant)		EA	$2,540.00 /EA	
Guardrail		(incl. removal) < 200ft beyond reference line		FT	$41.00 /FT	
Guardrail Terminal		(each quadrant)		EA	$3,900.00 /EA	
Roadway Approach Work		(beyond approach pavement)	1.0	LSUM	$200,000.00 LSUM	$200,000.00
Utilities			1.0	LSUM	$30,000.00 LSUM	$30,000.00
TRAFFIC CONTROL	*Unit Cost to be determined by Region or TSC Traffic & Safety*					
Part Width Construction				LSUM	LSUM	
Crossovers				EA	/EA	
Temporary Traffic Signals				set	/set	
RR Flagging				LSUM	LSUM	
Detour			1.0	LSUM	$75,000.00 LSUM	$75,000.00
					RELATED ROAD/TRAFFIC CONSTRUCTION BUDGET	$305,000
CONTINGENCY	(10% - 20%) (use higher contingency for small projects)		20	%	$2,174,000.00	$435,000
MOBILIZATION	(estimate at 10%)		10	%	$2,609,000.00	$261,000
INFLATION	(assume 4% per year, beginning in 2024)		12	%	$2,870,000.00	$344,000

(Does not include PE or CE) **TOTAL CONSTRUCTION BUDGET** $3,214,000

Approximate City Out of Pocket Costs	APPROXIMATE CITY RESPONSIBILITY OF CONSTRUCTION COST (5% OF CONSTRUCTION)	$160,700
	15 % CE INSPECTION BUDGET	$482,100
	10 % PE DESIGN BUDGET	$321,400

Exhibit 4 - Cost Estimating Worksheet

2023

BRIDGE COST ESTIMATE WORKSHEET

- CPM, REHAB, REPLACE -

REV. 01/31/2023

OWNER: NOVI | FISCAL YEAR: 2026 | DATE: 3/13/2023
REGION: Metro | ENGINEER: AJR
TSC: Oakland | PR: #N/A | MP: #N/A

	Out to Out	Curb to Curb
LENGTH	WIDTH	WIDTH
46.1	44.4	28.0

STRUCTURE ID: 13828
BRIDGE ID: N/A

LOCATION: ASHBURY DRIVE over MIDDLE BR ROUGE RIVER
PRIMARY WORK ACTIVITY: Bridge Replacement
OTHER WORK:

DECK AREA: 2,047 SFT
CLEAR ROADWAY: 1,291 SFT

STR. TYPE: Prestressed Concrete Box Beam or Girders - Mu

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	$415.00 /SFT	
Single Span, Over Water	Length < 100ft	(add demo, approach, MOT)	2,046.8	SFT	$500.00 /SFT	$1,023,420.00
Multiple Spans, Over Water	Length > 100ft	(add demo, approach, MOT)		SFT	$450.00 /SFT	
Precast Culvert	Length < 40ft	(add demo, approach, MOT)		SFT	$540.00 /SFT	
NEW SUPERSTRUCTURE						
New Superstructure, Grade Separation		(incl. remove exist deck/super; add MOT & approach)		SFT	$295.00 /SFT	
New Superstructure, Over Water		(incl. remove exist deck/super; add MOT & approach)		SFT	$300.00 /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			2,046.8	SFT	$95.00 /SFT	$194,449.80
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)	188.9	SYD	$275.00 /SYD	$51,944.44
Silane Treatment		(penetrating sealer for concrete surfaces)		SFT	$7.00 /SFT	
Slope Protection Repairs				SYD	$150.00 /SYD	
Other						
					STRUCTURE CONSTRUCTION BUDGET	$1,269,814
ROAD WORK						
Approach Pavement, 12" RC		(incl. removal; add curb, gutter, guardrail) 40' ea. end	248.9	SYD	$230.00 /SYD	$57,244.44
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		FT	$41.00 /FT	
Guardrail Terminal		(each quadrant)	4.0	EA	$3,900.00 /EA	$15,600.00
Roadway Approach Work		(beyond approach pavement)	1.0	LSUM	$75,000.00 LSUM	$75,000.00
Utilities				LSUM	LSUM	
TRAFFIC CONTROL	*Unit Cost to be determined by Region or TSC Traffic & Safety*					
Part Width Construction				LSUM	LSUM	
Crossovers				EA	/EA	
Temporary Traffic Signals				set	/set	
RR Flagging				LSUM	LSUM	
Detour			1.0	LSUM	$30,000.00 LSUM	$30,000.00
					RELATED ROAD/TRAFFIC CONSTRUCTION BUDGET	$197,124
CONTINGENCY	(10% - 20%) (use higher contingency for small projects)		20	%	$1,467,000.00	$293,000
MOBILIZATION	(estimate at 10%)		10	%	$1,760,000.00	$176,000
INFLATION	(assume 4% per year, beginning in 2024)		12	%	$1,936,000.00	$232,000

(Does not include PE or CE) **TOTAL CONSTRUCTION BUDGET** $2,168,000

Approximate City Out of Pocket Costs

APPROXIMATE CITY RESPONSIBILITY OF CONSTRUCTION COST (5% OF CONSTRUCTION) $108,400
15 % CE INSPECTION BUDGET $325,200
10 % PE DESIGN BUDGET $216,800

ELIZABETH KUDLA SAARELA
esaarela@rsjalaw.com

27555 Executive Drive, Suite 250
Farmington Hills, Michigan 48331
P 248.489.4100 | F 248.489.1726
rsjalaw.com

ROSATI | SCHULTZ
JOPPICH | AMTSBUECHLER

March 9, 2023

Ben Croy, City Engineer
City of Novi
Department of Public Works
Field Services Complex
26300 Lee BeGole Drive
Novi, MI 48375

Re: MDOT Local Bridge Program – Asbury Bridge over Middle Rouge River

Dear Mr. Croy:

You have indicated that the City will be resubmitting its application for participation in MDOT's 2023 Local Bridge Program using the same Resolution as approved for the 2020 submittal. We previously reviewed and approve use of the proposed Resolution Requesting that the Michigan Department of Transportation Include the Asbury Bridge over the Middle Rouge River in the State Local Bridge Program List .The Resolution is provided for the limited purpose of acknowledging that the City agrees pay 5% of the bridge replacement cost and 100% of the design and construction engineering cost in the event that a grant is awarded by MDOT.

Based on the limited purpose of the Resolution, we see no legal impediment to City Council approving the enclosed version of the Resolution.

If you have any questions regarding the above, please do not hesitate to contact me.

Very truly yours,

ROSATI SCHULTZ JOPPICH
& AMTSBUECHLER PC

Elizabeth Kudla Saarela

Enclosure
C: Cortney Hanson, Clerk (w/Enclosure)
Jeffrey Herczeg, Director of Public Works (w/Enclosure)
Thomas R. Schultz, Esquire (w/Enclosure)

ELIZABETH KUDLA SAARELA
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Farmington Hills, Michigan 48331
P 248.489.4100 | F 248.489.1726
rsjalaw.com

ROSATI | SCHULTZ
JOPPICH | AMTSBUECHLER

March 9, 2023

Ben Croy, City Engineer
City of Novi
Department of Public Works
Field Services Complex
26300 Lee BeGole Drive
Novi, MI 48375

Re: MDOT Local Bridge Program – 9 Mile Road Over Thornton Creek

Dear Mr. Croy:

You have indicated that the City will be resubmitting its application for participation in MDOT's 2023 Local Bridge Program using the same Resolution as approved for the 2020 submittal. We previously reviewed and approve use of the proposed Resolution Requesting that the Michigan Department of Transportation Include the 9 Mile Road Over Thornton Creek in the State Local Bridge Program List .The Resolution is provided for the limited purpose of acknowledging that the City agrees pay 5% of the bridge replacement cost and 100% of the design and construction engineering cost in the event that a grant is awarded by MDOT.

Based on the limited purpose of the Resolution, we see no legal impediment to City Council approving the enclosed version of the Resolution.

If you have any questions regarding the above, please do not hesitate to contact me.

Very truly yours,

ROSATI SCHULTZ JOPPICH
& AMTSBUECHLER PC

Elizabeth Kudla Saarela

Enclosure
C: Cortney Hanson, Clerk (w/Enclosure)
Jeffrey Herczeg, Director of Public Works (w/Enclosure)
Thomas R. Schultz, Esquire (w/Enclosure)

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 14274 — CULVERT SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
9 MILE ROAD	42.4519 / -83.4841	634489000010C02	Poor Condition(4)
Feature	**Length / Width / Spans**	**Owner**	
THORNTON CREEK	26.6 / 0 / 2	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.5 MI W OF NOVI RD	1970 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	3 Steel / 19 Culvert	09/15/2022 / AZ6H	8 Stable Above Footing

CULVERT INSPECTION — AZ6H

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Adam Rychwalski	Orchard, Hiltz & McCliment Inc	12	09/15/2022

GENERAL NOTES

Adjacent CMP arch pipe approximately 280' long each at heavy skew to 9 Mile road. Heavy corrosion and deterioration in first 40-70 feet of each pipe from inlet. Pipe shape change from CMP arch to CMP ellipse leaving exposed joint. Several blind taps with heavy corrosion at taps. Rust and scaling along the waterline for full length with the exception of the last 30 feet or so which appears to be new pipe. Large area of deflected pipe in east pipe at approximately 166' in from inlet. detailed inspection is difficult without robotics due to low rise of pipe. Deflection in north pipe approximately 25 feet from inlet and in south pipe approximately 24 feet from inlet. Assisted by Nick Aukerman (2022).

NBI INSPECTION

	09/20	09/21	09/22	
1. Culvert Rating (SIA-62)	4	4	4	(09/22) (09/21) (09/20)
2. Channel (SIA-61)	6	6	6	Upstream and downstream ends are aligned with channel. there is a 45 degree kink in the pipe approximately 30' from outlet. upstream end has rock ladder controlling stream profile. (09/22) Upstream and downstream ends are aligned with channel. there is a 45 degree kink in the pipe approximately 30' from outlet. upstream end has rock ladder controlling stream profile. (09/21) Upstream and downstream ends are aligned with channel. there is a 45 degree kink in the pipe approximately 30' from outlet. upstream end has rock ladder controlling stream profile. (09/20)
3. Scour	7	7	7	armoring at both ends. no scour noted. full invert on pipe throughout. (09/22) armoring at both ends. no scour noted. full invert on pipe throughout. (09/21) armoring at both ends. no scour noted. full invert on pipe throughout. (09/20)

AASHTO ELEMENTS — (English Units)

Element Number	Element Name	Total Quantity	Unit	Good CS1	Fair CS2	Poor CS3	Severe CS4
Culvert							
240	Steel Culvert	560	ft	60	350	140	10
				11%	62%	25%	2%

Adjacent CMP arch pipe approximately 280' long each at heavy skew to 9 Mile road. Heavy corrosion and deterioration in first 40-70 feet of each pipe from inlet. Pipe shape change from CMP arch to CMP ellipse leaving exposed joint subject to attacking water from normal flow. Several blind taps with heavy corrosion at taps. Rust and scaling along the waterline for full length with the exception of the last 30 feet or so which appears to be new pipe. Large area of deflected pipe in east pipe at approximately 166' in from inlet. detailed inspection is difficult without robotics due to low rise of pipe. Robotic inspection is still difficult due to small riprap that has washed into pipe. Deflection in north pipe approximately 25 feet from inlet and in south pipe approximately 24 feet from inlet.

Element Number	Element Name	Total Quantity	Unit	Good CS1	Fair CS2	Poor CS3	Severe CS4
Scour Countermeasure							
830	Plain Riprap	400	sq.ft	400	0	0	0
				100%	0%	0%	0%

new riprap at outlet in good condition. New riprap and slope paving at inlet in good condition.

837	Other Scour Protect	20	ft	20	0	0	0
				100%	0%	0%	0%

Slope paving at upstream end has been replaced.

STR 14274 CULVERT SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
9 MILE ROAD	42.4519 / -83.4841	634489000010C02	Poor Condition(4)
Feature	**Length / Width / Spans**	**Owner**	
THORNTON CREEK	26.6 / 0 / 2	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.5 MI W OF NOVI RD	1970 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	3 Steel / 19 Culvert	09/15/2022 / AZ6H	8 Stable Above Footing

MISCELLANEOUS

Guard Rail

Item	Rating
36A. Bridge Railings	N
36B. Transitions	N
36C. Approach Guardrail	N
36D. Approach Guardrail Ends	N

Other Items

Item	Rating
71. Water Adequacy	6
72. Approach Alignment	4
Special Insp. Equipment	9
Underwater Insp. Method	1

RECOMMENDATIONS & ACTION ITEMS

Recommendation Type	Priority	Description
Culvert Repl.	H	Replace culvert due to poor condition, pipe damage, pipe alignment.

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 14274 — STRUCTURE INVENTORY AND APPRAISAL

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
9 MILE ROAD	42.4519 / -83.4841	634489000010C02	Poor Condition(4)
Feature	**Length / Width / Spans**	**Owner**	
THORNTON CREEK	26.6 / 0 / 2	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.5 MI W OF NOVI RD	1970 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	3 Steel / 19 Culvert	09/15/2022 / AZ6H	8 Stable Above Footing

Bridge History, Type, Materials

27 - Year Built	1970	
106 - Year Reconstructed		
202 - Year Painted		
203 - Year Overlay		
43 - Main Span Bridge Type	3	19
44 - Appr Span Bridge Type		
77 - Steel Type		
78 - Paint Type		
79 - Rail Type	0	
80 - Post Type		
107 - Deck Type	N	
108A - Wearing Surface	6	
108B - Membrane	N	
108C - Deck Protection	0	

Structure Dimensions

34 - Skew	64
35 - Struct Flared	N
45 - Num Main Spans	2
46 - Num Apprs Spans	0
48 - Max Span Length	12.2
49 - Structure Length	26.6
50A - Width Left Curb/SW	0
50B - Width Right Curb/SW	0
33 - Median	0
51 - Width Curb to Curb	0
52 - Width Out to Out	0
112 - NBIS Length	Y

Inspection Data

90 - Inspection Date	09/15/2022	
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	6	
62 - Culvert Rating	4	

Navigation Data

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

Route Carried By Structure(ON Record)

5A - Record Type	1	
5B - Route Signing	5	
5C - Level of Service	1	
5D - Route Number	00000	
5E - Direction Suffix	0	
10L - Best 3m Unclr-Lt	0	0
10R - Best 3m Unclr-Rt	0	0
PR Number		
Control Section		
11 - Mile Point	0	
12 - Base Highway Network	0	
13 - LRS Route-Subroute	0000006336 03	
19 - Detour Length	4	
20 - Toll Facility	3	
26 - Functional Class	16	
28A - Lanes On	2	
29 - ADT	8260	
30 - Year of ADT	2014	
32 - Appr Roadway Width	24	
32A/B - Ap Pvt Type/Width	4	24
42A - Service Type On	1	
47L - Left Horizontal Clear	0.0	
47R - Right Horizontal Clear	24.0	
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	9500	
115 - Year Future ADT	2034	
Freeway	0	

Structure Appraisal

36A - Bridge Railing	N
36B - Rail Transition	N
36C - Approach Rail	N
36D - Rail Termination	N
67 - Structure Evaluation	4
68 - Deck Geometry	N
69 - Underclearance	N
71 - Waterway Adequacy	6
72 - Approach Alignment	4
103 - Temporary Structure	
113 - Scour Criticality	8

Miscellaneous

37 - Historical Significance	5
98A - Border Bridge State	
98B - Border Bridge %	0
101 - Parallel Structure	N
EPA ID	
Stay in Place Forms	
143 - Pin & Hanger Code	0
148 - No. of Pin & Hangers	0

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	0	
55A - Reference Feature	N	
55B - Right Horiz Clearance	0	
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		
76 - Length of Improvement		
94 - Bridge Cost		
95 - Roadway Cost		
96 - Total Cost		
97 - Year of Cost Estimate		

Load Rating and Posting

31 - Design Load	0		
41 - Open, Posted, Closed	A		
63 - Fed Oper Rtg Method	6		
64F - Fed Oper Rtg Load	2.03		
64MA - Mich Oper Rtg Method	6		
64MB - Mich Oper Rtg	3.61		
64MC - Mich Oper Truck	19		
65 - Inv Rtg Method	6		
66 - Inventory Load	1.22		
70 - Posting	5		
141 - Posted Loading			
193 - Overload Class	A		N

STR 14274	WORK RECOMMENDATIONS		
Facility	**Latitude / Longitude**	**MDOT Structure ID**	**Structure Condition**
9 MILE ROAD	42.4519 / -83.4841	634489000010C02	Poor Condition(4)
Feature	**Length / Width / Spans**	**Owner**	
THORNTON CREEK	26.6 / 0 / 2	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.5 MI W OF NOVI RD	1970 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	3 Steel / 19 Culvert	09/15/2022 / AZ6H	8 Stable Above Footing

WORK RECOMMENDATIONS AZ6H

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 14275 — CULVERT SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
9 MILE ROAD	42.4522 / -83.4729	634489000010C03	Good Condition(7)
Feature	**Length / Width / Spans**	**Owner**	
THORNTON CREEK	21.5 / 104 / 2	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.06 MI E OF NOVI RD	1990 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	3 Steel / 19 Culvert	09/15/2022 / KM5A	8 Stable Above Footing

CULVERT INSPECTION — KM5A

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Adam Rychwalski	Orchard, Hiltz & McCliment Inc	24	09/15/2022

GENERAL NOTES

Dual CMP arch pipe. Pipe in overall good to fair condition with minor puncture under westbound lane. Assisted by Nick Aukerman (2022).

NBI INSPECTION

	11/18	09/20	09/22	
1. Culvert Rating (SIA-62)	7	7	7	(09/22) (09/20) (11/18)
2. Channel (SIA-61)	5	5	5	Main channel is in east bore with stream entering from northeast. west bore is mainly an overflow. Debris has been cleared from the west bore. Stream conditions do not appear to affect the pipe. (09/22) Main channel is in east bore with stream entering from northeast. west bore is mainly an overflow as debris has built up between the pipes up to approximately bankful height. debris dam causes approximate 1.5' waterfall 30' downstream. stream conditions do not appear to affect the pipe. (09/20) Main channel is in east bore with stream entering from northeast. west bore is mainly an overflow as debris has built up between the pipes up to approximately bankful height. debris dam causes approximate 1.5' waterfall 30' downstream. stream conditions do not appear to affect the pipe. (11/18)
3. Scour	6	6	6	no natural bottom at upstream end of pipe but no scour noted. (09/22) no natural bottom at upstream end of pipe but no scour noted. (09/20) no natural bottom at upstream end of pipe but no scour noted. (11/18)

AASHTO ELEMENTS — (English Units)

Element Number	Element Name	Total Quantity	Unit	Good CS1	Fair CS2	Poor CS3	Severe CS4
Culvert							
240	Steel Culvert	240	ft	220	20	0	0
				92%	8%	0%	0%
861	Culvert Wingwall	2	(EA)	2	0	0	0
				100%	0%	0%	0%
863	Culvert Headwall	1	(EA)	1	0	0	0
				100%	0%	0%	0%

MISCELLANEOUS

Guard Rail

Item	Rating
36A. Bridge Railings	N
36B. Transitions	N
36C. Approach Guardrail	N
36D. Approach Guardrail Ends	N

Other Items

Item	Rating
71. Water Adequacy	8
72. Approach Alignment	6
Special Insp. Equipment	
Underwater Insp. Method	1

RECOMMENDATIONS & ACTION ITEMS

Recommendation Type	Priority	Description

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 14275	**CULVERT SAFETY INSPECTION REPORT**		
Facility	**Latitude / Longitude**	**MDOT Structure ID**	**Structure Condition**
9 MILE ROAD	42.4522 / -83.4729	634489000010C03	Good Condition(7)
Feature	**Length / Width / Spans**	**Owner**	
THORNTON CREEK	21.5 / 104 / 2	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.06 MI E OF NOVI RD	1990 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	3 Steel / 19 Culvert	09/15/2022 / KM5A	8 Stable Above Footing

Other	L	plug puncture hole in culvert with grout during the next project in the area.

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 14275 — STRUCTURE INVENTORY AND APPRAISAL

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
9 MILE ROAD	42.4522 / -83.4729	634489000010C03	Good Condition(7)
Feature	**Length / Width / Spans**	**Owner**	
THORNTON CREEK	21.5 / 104 / 2	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.06 MI E OF NOVI RD	1990 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	3 Steel / 19 Culvert	09/15/2022 / KM5A	8 Stable Above Footing

Bridge History, Type, Materials

27 - Year Built	1990	
106 - Year Reconstructed		
202 - Year Painted		
203 - Year Overlay		
43 - Main Span Bridge Type	3	19
44 - Appr Span Bridge Type		
77 - Steel Type		
78 - Paint Type		
79 - Rail Type	0	
80 - Post Type		
107 - Deck Type	N	
108A - Wearing Surface	6	
108B - Membrane	N	
108C - Deck Protection	0	

Structure Dimensions

34 - Skew	0
35 - Struct Flared	N
45 - Num Main Spans	2
46 - Num Apprs Spans	0
48 - Max Span Length	10
49 - Structure Length	21.5
50A - Width Left Curb/SW	0
50B - Width Right Curb/SW	8
33 - Median	0
51 - Width Curb to Curb	52
52 - Width Out to Out	104
112 - NBIS Length	Y

Inspection Data

90 - Inspection Date	09/15/2022	
91 - Inspection Freq	24	
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	7	

Navigation Data

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

Route Carried By Structure(ON Record)

5A - Record Type	1	
5B - Route Signing	5	
5C - Level of Service	1	
5D - Route Number	00000	
5E - Direction Suffix	0	
10L - Best 3m Unclr-Lt	0	0
10R - Best 3m Unclr-Rt	0	0
PR Number		
Control Section		
11 - Mile Point	0	
12 - Base Highway Network	0	
13 - LRS Route-Subroute	0000006336 03	
19 - Detour Length	0	
20 - Toll Facility	3	
26 - Functional Class	16	
28A - Lanes On	4	
29 - ADT	11126	
30 - Year of ADT	2012	
32 - Appr Roadway Width	52	
32A/B - Ap Pvt Type/Width	4	52
42A - Service Type On	1	
47L - Left Horizontal Clear	0.0	
47R - Right Horizontal Clear	27.5	
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	12800	
115 - Year Future ADT	2032	
Freeway	0	

Structure Appraisal

36A - Bridge Railing	N
36B - Rail Transition	N
36C - Approach Rail	N
36D - Rail Termination	N
67 - Structure Evaluation	7
68 - Deck Geometry	4
69 - Underclearance	N
71 - Waterway Adequacy	8
72 - Approach Alignment	6
103 - Temporary Structure	
113 - Scour Criticality	8

Miscellaneous

37 - Historical Significance	5
98A - Border Bridge State	
98B - Border Bridge %	0
101 - Parallel Structure	N
EPA ID	
Stay in Place Forms	
143 - Pin & Hanger Code	0
148 - No. of Pin & Hangers	0

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	0	
55A - Reference Feature	N	
55B - Right Horiz Clearance	0	
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		
76 - Length of Improvement		
94 - Bridge Cost		
95 - Roadway Cost		
96 - Total Cost		
97 - Year of Cost Estimate		

Load Rating and Posting

31 - Design Load	5		
41 - Open, Posted, Closed	A		
63 - Fed Oper Rtg Method	6		
64F - Fed Oper Rtg Load	3.59		
64MA - Mich Oper Rtg Method	6		
64MB - Mich Oper Rtg	6.38		
64MC - Mich Oper Truck	19		
65 - Inv Rtg Method	6		
66 - Inventory Load	2.15		
70 - Posting	5		
141 - Posted Loading			
193 - Overload Class	A		N

STR 14275	WORK RECOMMENDATIONS		
Facility	**Latitude / Longitude**	**MDOT Structure ID**	**Structure Condition**
9 MILE ROAD	42.4522 / -83.4729	634489000010C03	Good Condition(7)
Feature	**Length / Width / Spans**	**Owner**	
THORNTON CREEK	21.5 / 104 / 2	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
0.06 MI E OF NOVI RD	1990 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	3 Steel / 19 Culvert	09/15/2022 / KM5A	8 Stable Above Footing

WORK RECOMMENDATIONS KM5A

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13828 BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
ASHBURY DRIVE	42.4427 / -83.4728	635489000067B01	Poor Condition(4)
Feature	**Length / Width / Spans**	**Owner**	
MIDDLE BR ROUGE RIVER	46.1 / 44.4 / 1	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
CHASE FARMS SUBDIVISION	1991 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	5 Prestressed Concrete / 05 Box Bm/Gird- Multiple	09/15/2022 / 9LGY	8 Stable Above Footing

NBI INSPECTION 9LGY

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Adam Rychwalski	Orchard, Hiltz & McCliment Inc	12	09/15/2022

GENERAL NOTES

Assisted by Nick Aukerman.

DECK

	09/18	09/20	09/22	
1. Surface (SIA-58A)	6	6	6	HMA surface with sealed longitudinal crack at centerline. Two other sealed longitudinal cracks near mid span. Previously unsealed crack have been sealed. SE quad has break up of HMA at east curb line. General scaling of HMA surface along west curb line. (09/22) HMA surface with sealed longitudinal crack at centerline. Two other sealed longitudinal cracks near mid span. A few unsealed cracks. SE quad has break up of HMA at east curb line. General scaling of HMA surface along west curb line. (09/20) HMA surface with sealed longitudinal crack at centerline. Two other sealed longitudinal cracks near mid span. A few unsealed cracks. SE quad has break up of HMA at east curb line. (09/18)
2. Expansion Joints	7	7	7	Sealed cracks at reference lines. Sealant sinking in areas but still intact. Some drying of HPJS. (09/22) Sealed cracks at reference lines. Sealant sinking in areas but still intact. Some drying of HPJS. (09/20) Sealed cracks at reference lines. Sealant sinking in areas but still intact. (09/18)
3. Other Joints	N	N	N	(09/22) (09/20) (09/18)
4. Railings	7	7	7	Concrete rail with painted timber insets and wood rail on top. Concrete has some vertical cracks at 5-6' spacing. Timber has been recently replaced. (09/22) Concrete rail with painted timber insets and wood rail on top. Concrete has some vertical cracks at 5-6' spacing. Timber has been recently replaced. (09/20) Concrete rail with painted timber insets and metal rail on top. Concrete has some vertical cracks at 5-6' spacing. Timber and metal with no deficiencies. (09/18)
5. Sidewalks or Curbs	7	7	7	A few longitudinal and transverse cracks on sidewalk. (09/22) A few longitudinal and transverse cracks on sidewalk. (09/20) A few longitudinal and transverse cracks on sidewalk. (09/18)
6. Deck Bottom Surface (SIA-58B)	N	N	N	Side-by-side box beams. Leaking between all beams. Stalactites present at most beam lines and leachate at all of them. (09/22) Side-by-side box beams. Leaking between all beams. Stalactites present at most beam lines and leachate at all of them. (09/20) Side-by-side box beams. Leaking between all beams. Stalactites present at most beam lines and leachate at all of them. (09/18)
7. Deck (SIA-58)	6	6	6	Surface has some cracking and there is leaking between all beams. Top of beams exposed at sidewalk face near midspan on both sides of bridge. (09/22) Surface has some cracking and there is leaking between all beams. (09/20) Surface has some cracking and there is leaking between all beams. (09/18)
8. Drainage				(09/22) (09/20) (09/18)

SUPERSTRUCTURE

STR 13828 **BRIDGE SAFETY INSPECTION REPORT**

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
ASHBURY DRIVE	42.4427 / -83.4728	635489000067B01	Poor Condition(4)
Feature	**Length / Width / Spans**	**Owner**	
MIDDLE BR ROUGE RIVER	46.1 / 44.4 / 1	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
CHASE FARMS SUBDIVISION	1991 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	5 Prestressed Concrete / 05 Box Bm/Gird- Multiple	09/15/2022 / 9LGY	8 Stable Above Footing

	09/18	09/20	09/22	
9. Stringer (SIA-59)	7	7	7	Leaching between beams but no distress to beams. Few cracks on fascias at 4' spacing with leaching. (09/22) Leaching between beams but no distress to beams. Few cracks on fascias at 4' spacing with leaching. (09/20) Leaching between beams but no distress to beams. Few cracks on fascias at 4' spacing with leaching. (09/18)
10. Paint (SIA-59A)	N	N	N	(09/22) (09/20) (09/18)
11. Section Loss	N	N	N	(09/22) (09/20) (09/18)
12. Bearings	7	7	7	Not visible but not no signs of issues. Appear to be functioning as intended. (09/22) Not visible but not no signs of issues. Appear to be functioning as intended. (09/20) Not visible but not no signs of issues. Appear to be functioning as intended. (09/18)

SUBSTRUCTURE

	09/18	09/20	09/22	
13. Abutments (SIA-60)	5	5	4	Pack rust and scaling at base and top near beams is evident on both abutments and has progressed since the previous inspection. Some vertical cracks in concrete pile cap. Evidence of leaking from ends. Holes in sheet piling of north abutment near the middle of the base. Pack rust and scaling on north abutment is allowing water through but no material. Section loss is minor and there is leaching between the sheets of the southern abutment sheet piling. (09/22) Steel sheet piling has pack rust at base and at top near beams. Section loss is minor and there is leaching between the sheets. Some vertical cracks in concrete pile cap. Evidence of leaking from ends. (09/20) Steel sheet piling has pack rust at base and at top near beams. Section loss is minor and there is leaching between the sheets. Some vertical cracks in concrete pile cap. (09/18)
14. Piers (SIA-60)	N	N	N	(09/22) (09/20) (09/18)
15. Slope Protection	N	N	N	(09/22) (09/20) (09/18)
16. Channel (SIA-61)	6	6	6	Banks eroded ~2' high along the waterline. vegetation sloughing into channel. Main channel is relatively flat (09/22) Banks eroded ~2' high along the waterline. vegetation sloughing into channel. Main channel is relatively flat (09/20) Banks eroded ~2' high along the waterline. vegetation sloughing into channel. Main channel is relatively flat (09/18)
17. Scour Inspection	7	7	7	No scour evident. Flat rocky bottom. (09/22) No scour evident. Flat rocky bottom. (09/20) No scour evident. (09/18)

APPROACH

	09/18	09/20	09/22	
18. Approach Pavement	7	7	7	Sealed longitudinal rack in north approach. No cracks in south approach. General wear in HMA. (09/22) Sealed longitudinal rack in north approach. No cracks in south approach. General wear in HMA. (09/20) Sealed longitudinal rack in north approach. No cracks in south approach. (09/18)

STR 13828 **BRIDGE SAFETY INSPECTION REPORT**

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
ASHBURY DRIVE	42.4427 / -83.4728	635489000067B01	Poor Condition(4)
Feature	**Length / Width / Spans**	**Owner**	
MIDDLE BR ROUGE RIVER	46.1 / 44.4 / 1	City: NOVI(4890)	
Location	**Built / Recon. / Paint / Ovly.**	**TSC**	**Operational Status**
CHASE FARMS SUBDIVISION	1991 / / /	Oakland(23)	A Open, no restriction(A)
Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	5 Prestressed Concrete / 05 Box Bm/Gird- Multiple	09/15/2022 / 9LGY	8 Stable Above Footing

19. Approach Shoulders Sidewalks	7	7	7	Sidewalk and curb have recently been replaced in all quadrants. (09/22) Sidewalk and curb have recently been replaced in all quadrants. (09/20) Sidewalk and curb have recently been replaced in all quadrants. (09/18)
20. Approach Slopes				Gentle grassed slopes with no erosion. (09/22) Gentle grassed slopes with no erosion. (09/20) Gentle grassed slopes with no erosion. (09/18)
21. Utilities				(09/22) (09/20) (09/18)
22. Drainage Culverts				(09/22) (09/20) (09/18)

MISCELLANEOUS

Guard Rail

Item	Rating
36A. Bridge Railings	1
36B. Transitions	0
36C. Approach Guardrail	0
36D. Approach Guardrail Ends	0

Other Items

Item	Rating
71. Water Adequacy	8
72. Approach Alignment	8
Temporary Support	0 No Temporary Supports
High Load Hit (M)	No
Special Insp. Equipment	2
Underwater Insp. Method	1

False Decking (Timber) Removed to Complete Inspection N/A - No False Decking

Critical Feature Inspections (SIA-92)

	Freq	Date
92A. Fracture Critical		
92B. Underwater		
92C. Other Special		
92D. Fatigue Sensitive		

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13828 STRUCTURE INVENTORY AND APPRAISAL

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
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Region / County	**Material / Design**	**Last NBI Inspection**	**Scour Evaluation**
Metro(7) / Oakland(63)	5 Prestressed Concrete / 05 Box Bm/Gird- Multiple	09/15/2022 / 9LGY	8 Stable Above Footing

Bridge History, Type, Materials

27 - Year Built	1991	
106 - Year Reconstructed		
202 - Year Painted		
203 - Year Overlay		
43 - Main Span Bridge Type	5	05
44 - Appr Span Bridge Type		
77 - Steel Type		
78 - Paint Type		
79 - Rail Type	9	
80 - Post Type		
107 - Deck Type	2	
108A - Wearing Surface	6	
108B - Membrane	0	
108C - Deck Protection	0	

Structure Dimensions

34 - Skew	4
35 - Struct Flared	0
45 - Num Main Spans	1
46 - Num Apprs Spans	0
48 - Max Span Length	39.5
49 - Structure Length	46.1
50A - Width Left Curb/SW	6.8
50B - Width Right Curb/SW	6.8
33 - Median	0
51 - Width Curb to Curb	28
52 - Width Out to Out	44.4
112 - NBIS Length	Y

Inspection Data

90 - Inspection Date	09/15/2022	
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	6	
58A/B - Deck Surface/Bottom	6	N
59 - Superstructure Rating	7	
59A - Paint Rating	N	
60 - Substructure Rating	4	
61 - Channel Rating	6	
62 - Culvert Rating	N	

Navigation Data

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

Route Carried By Structure(ON Record)

5A - Record Type	1	
5B - Route Signing	5	
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	0000044017 42	
19 - Detour Length	2	
20 - Toll Facility	3	
26 - Functional Class	19	
28A - Lanes On	2	
29 - ADT	100	
30 - Year of ADT	1991	
32 - Appr Roadway Width	24	
32A/B - Ap Pvt Type/Width		24.02
42A - Service Type On	5	
47L - Left Horizontal Clear	0.0	
47R - Right Horizontal Clear	28.0	
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	115	
115 - Year Future ADT	2011	
Freeway	0	

Structure Appraisal

36A - Bridge Railing	1
36B - Rail Transition	0
36C - Approach Rail	0
36D - Rail Termination	0
67 - Structure Evaluation	5
68 - Deck Geometry	7
69 - Underclearance	N
71 - Waterway Adequacy	8
72 - Approach Alignment	8
103 - Temporary Structure	
113 - Scour Criticality	8

Miscellaneous

37 - Historical Significance	5
98A - Border Bridge State	
98B - Border Bridge %	
101 - Parallel Structure	N
EPA ID	
Stay in Place Forms	0
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		
56 - Left Horiz Clearance		
100 - STRAHNET		
102 - Traffic Direct		
109 - Truck %		
110 - Truck Network		
114 - Future ADT		
115 - Year Future ADT		
Freeway		

Proposed Improvements

75 - Type of Work		
76 - Length of Improvement		
94 - Bridge Cost		
95 - Roadway Cost		
96 - Total Cost		
97 - Year of Cost Estimate		

Load Rating and Posting

31 - Design Load	4
41 - Open, Posted, Closed	A
63 - Fed Oper Rtg Method	0
64F - Fed Oper Rtg Load	1.67
64MA - Mich Oper Rtg Method	0
64MB - Mich Oper Rtg	1
64MC - Mich Oper Truck	18
65 - Inv Rtg Method	0
66 - Inventory Load	1
70 - Posting	5
141 - Posted Loading	
193 - Overload Class	

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 13828 — WORK RECOMMENDATIONS

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WORK RECOMMENDATIONS — 9LGY

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Adam Rychwalski	Orchard, Hiltz & McCliment Inc	12	09/15/2022

RECOMMENDATIONS & ACTION ITEMS

Recommendation Type	Priority	Description
Deck Patching	L	Seal cracks in surface.
HMA Overlay	L	Apply waterproofing underneath HMA overlay.
Bridge Repl.	L	