


MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 12006

BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
GROSSE ILE PARKWAY	42.1273 / -83.173	82200010000B020	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
TRENTON CHANNEL	1,345.88 / 31.8 / 12	County: Wayne(82)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
GROSSE ILE	1932 / 2007 / 1978 /	Taylor(25)	P Posted for load(26NNNN)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Metro(7) / Wayne(82)	4 Steel Continuous / 17 Movable- Swing	06/14/2019 / YYVO	4 Stable, needs action	

NBI INSPECTION

YYVO

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Bradly Croop	modjeski and masters, inc.	12	06/14/2019

GENERAL NOTES

No. 0382 Routine and Fracture Critical inspection started on 6/14/2019 and MDOT's reachall was used on 8/26/2019. Access equipment required: Suggest reach-all, aerial lift, boat, fall protection, personal flotation device, and dye penetrant kit. Monitor floorbeams during routine inspections. Superstructure appears to dip at even numbered pier locations (founded on timber cribbing), See UW Report. Piers were monitored for 6 months with no settlement noted. Numerous safety deficiencies on the movable span include access ladders to top of truss are not secured to prevent public use, missing kick plates, and signs do not meet minimum bottom height requirement. Elsewhere on the bridge safety deficiencies include unsecured access to stairs to catwalk, object marker panels (OM3 type) not fastened properly and previously damaged, and exposed light bulbs and light sockets.

Weight limit signs in place on both ends of bridge	YES
Weight limit shown on signs at bridge	26_____
Required advance warning weight limit signs in place	YES
Weight limit shown on advance warning signs	26_____


DECK

	06/17	06/18	06/19	
1. Surface (SIA-58A)	7	7	7	Open grid riveted deck with serrated wearing surface - some missing rivets, <1% of total. Span 12 has loose panel in WB lane. Concrete-filled grid deck with serrated wearing surface at ends of movable spans - minor voids and delaminations, visible wear in the wheel path. (06/19) Open grid riveted deck with serrated wearing surface - some missing rivets, <1% of total. Span 12 has loose panel in WB lane. Concrete-filled grid deck with serrated wearing surface at ends of movable spans - minor voids and delaminations, visible wear in the wheel path. (06/18) Open grid riveted deck with serrated wearing surface - some missing rivets, <1% of total. Concrete-filled grid deck with serrated wearing surface at ends of movable spans - minor voids and delaminations, visible wear in the wheel path. (06/17)
2. Expansion Joints	7	7	7	Open Joint at ends of swing span. Pourable joint material at abutment joints. (06/19) Open Joint at ends of swing span. (06/18) Open air joints. (06/17)
3. Other Joints	N	N	N	(06/19) (06/18) (06/17)
4. Railings	5	5	5	Aesthetic reinforced concrete parapet with surmounted dual galvanized metal tube on fixed spans - good condition, some missing bolts and washers noted. Open picket-type railing on movable span - 10% of paint is peeling with light surface rust, no observed section loss, and no movement when shaken. Structure mounted dual W-beam on vehicular side of the movable span truss, some damage noted at boxing glove ends and scrapes throughout. (06/19) Aesthetic parapet tube on fixed spans - good condition, some missing bolts and washers noted. Open picket-type railing on movable span - 5% of paint is peeling with light surface rust, no observed section loss, and no movement when shaken. Thrie beam on vehicular side of the movable span truss, some damage noted and missing bolts. (06/18) Aesthetic parapet tube on fixed spans - good condition, some missing bolts and washers noted. Open picket-type railing on movable span - 5% of paint is peeling with light surface rust, no observed section loss, and no movement when shaken. Thrie beam on vehicular side of the movable span truss, some damage noted and missing bolts. (06/17)

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 12006

BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
GROSSE ILE PARKWAY	42.1273 / -83.173	82200010000B020	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
TRENTON CHANNEL	1,345.88 / 31.8 / 12	County: Wayne(82)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
GROSSE ILE	1932 / 2007 / 1978 /	Taylor(25)	P Posted for load(26NNNN)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Metro(7) / Wayne(82)	4 Steel Continuous / 17 Movable- Swing	06/14/2019 / YYVO	4 Stable, needs action	

5. Sidewalks or Curbs	7	7	7	<p>Sidewalk consists of concrete filled grid. Openings in movable span sidewalk for truss members. There are vertical misalignments between the fixed span sidewalks and moveable span sidewalk which pose a tripping hazard. Aluminum sidewalk on fixed spans has missing bolts. Vertical difference in sidewalk elevation of approximately 0.5" at movable span. Sidewalk width in movable span is <32", which is not ADA compliant. (06/19)</p> <p>Openings in movable span sidewalk and several tripping hazards. Aluminum sidewalk on fixed spans has missing bolts and is fastened with tie wire in those locations. Vertical difference in sidewalk elevation of approximately 0.5" at movable span. (06/18)</p> <p>Sidewalk width on movable span is <32", which is not ADA compliant. Openings in movable span sidewalk and several tripping hazards. Aluminum sidewalk on fixed spans has missing bolts and is fastened with tie wire in those locations. Vertical difference in sidewalk elevation of approximately 0.5" at movable span. (06/17)</p>
6. Deck Bottom Surface (SIA-58B)	7	7	7	<p>Deck bottom of concrete filled sidewalk on swing span is heavily corroded. Open grid deck is present throughout approach spans. (06/19)</p> <p>Deck bottom of of concrete filled sidewalk on swing span is heavily corroded. (06/18) (06/17)</p>
7. Deck (SIA-58)	7	7	7	<p>Open grid riveted deck with serrated wearing surface - some missing rivets, <1% of total. Concrete-filled grid deck with serrated wearing surface at ends of movable spans - minor voids and delaminations, visible wear in the wheel path. (06/19)</p> <p>Open grid riveted deck with serrated wearing surface - some missing rivets, <1% of total. Concrete-filled grid deck with serrated wearing surface at ends of movable spans - minor voids and delaminations, visible wear in the wheel path. (06/18)</p> <p>Open grid riveted deck with serrated wearing surface - some missing rivets, <1% of total. Concrete-filled grid deck with serrated wearing surface at ends of movable spans - minor voids and delaminations, visible wear in the wheel path. (06/17)</p>
8. Drainage				<p>(06/19)</p> <p>(06/18)</p> <p>(06/17)</p>

SUPERSTRUCTURE


06/17 06/18 06/19

9. Stringer (SIA-59)	2	3	4	<p>APPROACH SPANS: Girders exhibit heavy corrosion and minor pitting along bottom flange and lower portion of web with pack rust built up between bottom cover plates. Pack rust is also built along the top flange of west approach spans. Lateral bracing connections are covered with debris and connection plates exhibit section loss (some locations have severe section loss). A few floorbeams were repaired in 2007, the remaining FB's have severe section loss at or near connections, top flanges and bottom flanges and are the controlling members in the load analysis. Stringers have active corrosion and pitting at their end connections and isolated areas throughout the bottom flanges.</p> <p>SWING SPAN: Truss chords are generally in fair condition with areas of pitting and corrosion. The members at or below the roadway surface have heavy areas of corrosion with the lateral gusset plates showing heavy section loss in a few areas. The upper portal bracing of span 10, near the height posting sign have been damaged due to a high load hit. (06/19)</p> <p>APPROACH SPANS: Girders exhibit heavy corrosion along bottom flange with pack rust built up between plates. Pack rust is also built along the top flange of west approach spans. Lateral bracing connections are filled heavily with debris and gusset plates exhibit section loss. Some floor beams have been repaired in 2007, the remaining FB's have heavy section loss at or near connections and are the controlling members in the load analysis.</p> <p>SWING SPAN: Truss chords are generally in fair condition with areas of pitting and corrosion. The members at or below the roadway surface have heavy areas of corrosion with the lateral gusset plates showing heavy section loss in a few areas. The upper portal bracing of span 10, near the height posting sign have been damaged due to a high load hit. (06/18)</p> <p>Superstructure will not support design loads and the structure is currently posted for reduced loading. (06/17)</p>
-----------------------------	---	---	---	--

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 12006

BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
GROSSE ILE PARKWAY	42.1273 / -83.173	82200010000B020	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
TRENTON CHANNEL	1,345.88 / 31.8 / 12	County: Wayne(82)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
GROSSE ILE	1932 / 2007 / 1978 /	Taylor(25)	P Posted for load(26NNNN)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Metro(7) / Wayne(82)	4 Steel Continuous / 17 Movable- Swing	06/14/2019 / YYVO	4 Stable, needs action	

10. Paint (SIA-59A)	4	4	4	Widespread failure of coating system with heavy flaking and corrosion throughout entire superstructure. (06/19) Widespread failure of coating system with heavy flaking and corrosion throughout. (06/18) Widespread failure of coating system; Bridge was painted in 1978 according to SIA. Previous BSIR comments indicate lead based paint. (06/17)
11. Section Loss	0	0	0	Extensive corrosion on stringer to floor beam connections, actively spreading to floorbeam webs where previous stringers were removed. Lateral bracing connections on bottom chord of truss spans have significant to severe section loss in a few locations. (06/19) Extensive corrosion on stringer to floor beam connection, actively spreading to floor beam and at locations where previous stringers were cut off. Lateral bracing connections on bottom chord of truss spans have significant to severe section loss in a few locations. (06/18) Extensive corrosion on stringer to floor beam connection, actively spreading to floor beam and at locations where previous stringers were cut off. (06/17)
12. Bearings	4	6	6	Rocker bearings at Piers 1, 3, 5, 7, and 11 were replaced in 2007. This rating is controlled by those that were not replaced. Anchor bolts , nuts, and stiffeners at the bearing plates exhibit significant section loss. Fixed bearings have severe active corrosion and laminated rust. (06/19) Rocker bearings at Piers 1, 3, 5, 7, and 11 were replaced in 2007. This rating is controlled by those that were not replaced. Anchor bolts , nuts, and stiffeners at the bearing plates exhibit significant section loss. (06/18) Rocker bearings at Piers 1, 3, 5, 7, and 11 were replaced in 2007. This rating is controlled by those that were not replaced. Anchor bolts , nuts, and stiffeners at the bearing plates exhibit significant section loss. (06/17)


SUBSTRUCTURE

	06/17	06/18	06/19	
13. Abutments (SIA-60)	7	7	7	Minor spalls, delamination, and cracking. (06/19) Minor spalls, delamination, and cracking. (06/18) Minor spalls, delamination, and cracking. (06/17)
14. Piers (SIA-60)	4	4	4	Spalls, delaminations, and vertical cracking above water line. Pier 2 east face has severe spalling with exposed reinforcing steel for 20% of wall area. Timber cribbing at piers 4 and 6 at N end is deteriorated causing a void in the rock fill that is 8' high by 8' in length (horizontally) undermining the concrete nosing. Concrete nosing below water line is deteriorating as noted by 2017 UW report. Piers were monitored for 6 months with no significant settlement noted. The fender system for Pier 9 appears to be settling / sinking at north and south ends. The majority of the system is underwater. (06/19) Spalls, delaminations, and cracking above water line. Timber cribbing at piers 4 and 6 at N end is deteriorated causing a void in the rock fill that is 8' high by 8' in length (horizontally) undermining the concrete nosing. Concrete nosing below water line is deteriorating as noted by 2017 UW report. Piers were monitored for 6 months with no significant settlement noted. (06/18) Spalls, delaminations, and cracking above water line. Timber cribbing at piers 4 and 6 at N end is deteriorated causing a void in the rock fill that is 8' high by 8' in length (horizontally) undermining the concrete nosing. Concrete nosing below water line is deteriorating. (06/17)
15. Slope Protection	N	N	N	This item is rated only with bridges that do not cross water. (06/19) This item is rated only with bridges that do not cross water. (06/18) This item is rated only with bridges that do not cross water. (06/17)

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 12006

BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
GROSSE ILE PARKWAY	42.1273 / -83.173	82200010000B020	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
TRENTON CHANNEL	1,345.88 / 31.8 / 12	County: Wayne(82)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
GROSSE ILE	1932 / 2007 / 1978 /	Taylor(25)	P Posted for load(26NNNN)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
Metro(7) / Wayne(82)	4 Steel Continuous / 17 Movable- Swing	06/14/2019 / YYVO	4 Stable, needs action	

16. Channel (SIA-61)	7	7	7	<p>From 2017 UW Report: Comparison of sounding data indicates negligible changes in channel bottom elevations throughout the structure, with the exception of Piers 2, 3, 4, 6 and 8, where it appears that large riprap has been installed. Channel bottom material consists of Sand, gravel, shells, rocks, cobbles and riprap and boulders allowing negligible probe rod penetration. Moderate construction debris (steel and concrete fragments) was present on top of submerged pier elements and around the base of pier substructure units. (06/19)</p> <p>From 2017 UW Report: Comparison of sounding data indicates negligible changes in channel bottom elevations throughout the structure, with the exception of Piers 2, 3, 4, 6 and 8, where it appears that large riprap has been installed. Channel bottom material consists of Sand, gravel, shells, rocks, cobbles and riprap and boulders allowing negligible probe rod penetration. Moderate construction debris (steel and concrete fragments) was present on top of submerged pier elements and around the base of pier substructure units. (06/18)</p> <p>Limestone blocks at W abutment are displaced. (06/17)</p>
17. Scour Inspection	4	4	4	<p>2017 report notes the sides of all piers appear to be well armored by built-up stones and riprap measuring 6-12 inches in diameter. Large riprap members measuring 3-4 feet in diameter are also present along the east sides of Piers 2, 3, 4, 6 and 8. It appears that these installations have been placed since the 2007 inspection. The embankments have no erosion protection, but no erosion was noted. The timber cribbing noted on even number piers is heavily to severely deteriorated. (06/19)</p> <p>2017 report notes The sides of all piers appear to be well armored by built-up stones and riprap measuring 6-12 inches in diameter. Large riprap members measuring 3-4 feet in diameter are also present along the east sides of Piers 2, 3, 4, 6 and 8. It appears that these installations have been placed since the 2007 inspection. No embankment erosion or deterioration was observed at all embankments in the vicinity of the bridge. The timber cribbing noted on even number piers is heavily to severely deteriorated. (06/18)</p> <p>See underwater bridge inspection. (06/17)</p>

APPROACH

	06/17	06/18	06/19	
18. Approach Pavement	7	7	7	<p>Approach sections on both ends of the bridge are poured concrete with minor transverse and longitudinal cracking. W approach where the existing HMA meets the concrete approach exhibits moderate deterioration and cracking on the westbound wheel path. (06/19)</p> <p>Approach sections on both ends of the bridge are poured concrete with no open cracks or joints over 1/16". W approach where the existing HMA meets the concrete approach exhibits moderate deterioration and cracking on the westbound wheel path. (06/18)</p> <p>Approach sections on both ends of the bridge are poured concrete with no open cracks or joints over 1/16". W approach where the existing HMA meets the concrete approach exhibits moderate deterioration and cracking on the westbound wheel path. (06/17)</p>
19. Approach Shoulders Sidewalks	7	7	7	<p>There is no settlement on approach shoulders, curb and gutter. Minor spalling on face of concrete curb. (06/19)</p> <p>There is no settlement on approach shoulders, curb and gutter. Minor spalling on face of curb. (06/18)</p> <p>There is no settlement on approach shoulders, curb and gutter. Minor spalling on face of curb. (06/17)</p>
20. Approach Slopes				<p>SE quadrant has evidence of minor erosion which is now vegetated. (06/19)</p> <p>SE quadrant has evidence of erosion due to washout. (06/18)</p> <p>SE quadrant has evidence of erosion due to washout. (06/17)</p>

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 12006

BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
GROSSE ILE PARKWAY	42.1273 / -83.173	82200010000B020	Poor Condition(4)
Feature	Length / Width / Spans	Owner	
TRENTON CHANNEL	1,345.88 / 31.8 / 12	County: Wayne(82)	
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status
GROSSE ILE	1932 / 2007 / 1978 /	Taylor(25)	P Posted for load(26NNNN)
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation
Metro(7) / Wayne(82)	4 Steel Continuous / 17 Movable- Swing	06/14/2019 / YYVO	4 Stable, needs action



21. Utilities

Cover plates on light poles on the fixed spans on the south side are taped in place due to the covers being broken. Some covers are missing, exposing the wires inside the light poles. There appears to be abandoned utility conduit adjacent to the maintenance walkway throughout fixed spans. (06/19)
 Cover plates on light poles on the fixed spans on the south side are taped in place due to the covers being broken. Some covers are missing, exposing the wires inside the light poles. (06/18)
 Cover plates on light poles on the fixed spans on the south side are taped in place due to the covers being broken. Some covers are missing, exposing the wires inside the light poles. (06/17)

22. Drainage Culverts

(06/19)
(06/18)
(06/17)

MISCELLANEOUS

Guard Rail

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

Other Items

<u>Item</u>	<u>Rating</u>
71. Water Adequacy	8
72. Approach Alignment	4
Temporary Support	0 No Temporary Supports
High Load Hit (M)	Yes
Special Insp. Equipment	4
Underwater Insp. Method	3

False Decking (Timber) Removed to Complete Inspection

N/A - No False Decking

Critical Feature Inspections (SIA-92)

	<u>Freq</u>	<u>Date</u>
92A. Fracture Critical	12	06/14/2019
92B. Underwater	6	06/11/2019
92C. Other Special		
92D. Fatigue Sensitive		