Ohio Bridge Inspection Summary Report

CUY-00010-0869 (1801325)

2: District	12 26446 - FAIRVIEW PARK (CUY county)	5A: Inventory Route	1 00010
21: Major Maint A/B	01 - State Highway Agency /	7: Facility On	SR 10
225 Routine Main A/B	04 - City or Municipal Highway Agency /	6: Feature Ints	VALLEY PKWY/ROCKY RIVER
221 Inspection A/B	01 - State Highway Agency /	9: Location	APPROX 200FT W STORYRD
220: Inv. Location	CUY		

Condition

58: Deck	**6 - Satisfactory Condition**
58.01 Wearing Surface	7 - Good (1% distress)
58.02 Joint	4- Poor (heavy leaking, offset)
59: Superstructure	**6 - Satisfactory Condition**
59.01 Paint & PCS	4 - Poor PCS (15-20% corr.)
60: Substructure	**6 - Satisfactory Condition**
61: Channel	**7**
61.01 Scour	**7 - Good**
62: Culverts	**N - Not Applicable**
67.01 GA	**6**

Appraisal

Sufficiency Rating	77.6 SD/FO 0 - ND
36: Rail, Tr, Gd, Term Std	1 1 0 1
72: Approach Alignment	8 - Equal to present desirable criteria
113: Scour Critical	9 - Foundations above flood waters
71: Waterway Adequacy	8 - Bridge Above Approaches

Geometric

48: Max Span Length (ft)	256.0
49: Structure Length (ft)	1230.0
52: Deck Width, Out-To-Out (ft)	64.7
424: Deck Area (sf)	79540.4
32: Appr Roadway Width (ft)	52.0
51: Road Width, Curb-Curb (ft)	52.0
50A: Curb/SW Width: Left (ft)	5
50A: Curb/SW Width: Right (ft)	5
34: Skew (deg)	0
33: Bridge Median	0 - No median
54B: Min Vert Underclearance (ft)	95
336A: Min Vert Clrnce IR Cardinal (ft)	99
336B: Min V Clr IR Non-Cardinal (ft)	0
578: Culvert Length (ft)	0

Load Posting

41: Op/Post/Closed	A - Open
70: Posting	5 - Equal to or above legal loads
70.01: Date	
70.02: Sign Type	
734: Percent Legal (%)	150
704: Analysis Date	07/01/1995
63: Analysis Method	0 - Field evaluation and documented engineering judgment

Structure Type

43: Bridge Type	3 - Steel
	11 - Arch - Deck
	N- Not Applicable
45: Spans Main / Approach	4 / 5
107: Deck Type	1 - Concrete Cast-in-Place
408: Composite Deck	N - Non-composite Construction
414A Joint Type 1	8 - Elastomeric Strip Seal
414B: Joint Type 2	N - None
108A: Wearing Surface	3 - Latex Concrete or similar additive
	N- Not Applicable
422: WS Date	01/01/1986
423: WS Thick (in)	1.2
482: Protective Coating	5 - Paint System OZEU
483: PCS Date	10/15/1991
453: Bearing Type 1	A - Sliding (Other)
455: Bearing Type 2	8 - Fixed Arch-Rib
528: Foundn: Abut Fwd	6 - Rock
533: Foundn: Abut Rear	6 - Rock
536: Foundn: Pier 1	6 - Rock
539: Foundn: Pier 2	0 - Other

Age and Service

27: Year Built/ 106 Rehab	1935 / 1990
42A: Service On	5 - Highway-pedestrian
42B: Service Under	6 - Highway - waterway
28A: Lanes on	04
28B: Lanes Under	02
19: Bypass Length	5
29: ADT	11449
109: % Trucks (%)	7

Inspections

		Months	
90: Routine Insp.		12	09/10/2020
92A: FCM Insp.	Y	24	09/12/2019
92B: Dive Insp.	N	0	
92C: Special Insp.	N	0	
92D: UBIT Insp.	Y	12	09/10/2020
92E: Drone Insp.			

Inspector Hedges,Lauren

Inspector: Lauren Hedges

Structure Number: 1801325

Inspection Date: 09/10/2020

Facility Carried: SR 10

Bridge Inspection Report

Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12 - Reinforced Concrete Deck	3 - Mod.	79540	sq. ft.	64378	12026	1596	1540
	Underside of Deck - Lots of spalling and exposed rebar on both sides of the edge of decks. Concrete spalling in Span 3 in bays 7, 8 and 9. Spalling under the light bolster in Span 6. There is an approximately 2'x2' area of bad patching between stringers 5 and 6 in Span 7. Span 8 there is an area of approximately 3'x4' and measures 2" deep. 80% of the longitudinal bars are exposed and portions of the transverse bars. There is a spall in bay 4 that is approximately 1.5'x2', and two more spalls in bay 5 that are 2'x3' and 2.5'x1.5' in area. Top of Deck - Concrete that the steel railing is sitting on is spalling and has exposed connection bolts. Various spalling of concrete on the sidewalk.						
	See photo(s): 12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,40,41,42,43,44,45,46,47,53,55,56,57,58,59						
510 - Wearing Surfaces		63823	sq. ft.	59971	3845	7	0
	Various amounts of transverse cracking. One pothole that has been patched but beginning to crack again.						
	See photo(s): 2,3,4,5,6,7,8,9,10,11						
113 - Steel Stringer	3 - Mod.	10839	ft.	10610	215	14	0
	Stringer 1 at the end, near the west abutment shows some corrosion. There is a gap between the cover plate and stringer 7 at pier 2. Stringer 3 in Span 4 has some pitting in the steel that was marked from a previous inspection. The bottom of Stringer 1 in Span 5 is rusted before the Pier 5 bearing. Stringer 7 in Span 6 is very rusted above the utility box. Stringer 5 in Span 7 is missing welds along the side of the plate on both sides at floor beam 10.						
	See photo(s): 1,2,3,4,5						
141 - Steel Arch	3 - Mod.	1971	ft.	1774	195	2	0
	See photo(s): 8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75						
152 - Steel Floor Beam	3 - Mod.	2898	ft.	2852	5	41	0
	Tear in the floorbeam near stringer 7 at Pier 5. Span 5 - There are rust stains on the bottom of floorbeams 5 and 7. Span 6 - There are rust stains on the bottom of floorbeams 4 and 7. Floorbeam 9 also has some missing paint on the bottom. Span 7 - There are rust stains on the bottom side of floorbeam 9. The bolt holes on floorbeams 5, 6 and 10 are rusty. Span 8 - There are rust stains on the bottom side of floorbeams 4 and 5.						

Inspector: Lauren Hedges **Structure Number:** 1801325

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Element Inspection

161 - Steel Pin and Pin & Hanger Assembly or both	3 - Mod.	16	each	16	0	0	0
202 - Steel Column	3 - Mod.	108	each	68	32	8	0
	There is minor pack rust re-activating between the plates along the full heights of the columns on both interior and exterior faces. Surface corrosion and accumulation of debris in the bottom 3' of most columns. Reactivated pack rust has cracked some of the erection tack welds, but no propagation into base metal was noted.						
	See photo(s): 7,10,11,12,13,14,22,23,24,25,26						
205 - Reinforced Concrete Column	3 - Mod.	16	each	6	7	3	0
	Concrete spalling on piers 2, 6 and 7. Rust staining can be seen on most of the piers. The protective coating on pier 7 is also beginning to spall.						
	See photo(s): 1,8,15,16,17						
210 - Reinforced Concrete Pier Wall	3 - Mod.	282	ft.	228	43	11	0
	Pier wall 7 has large vertical cracks extending the full height of the wall. There is also a small area of concrete spalling.						
	See photo(s): 20,21						
215 - Reinforced Concrete Abutment	3 - Mod.	128	ft.	125	3	0	0
231 - Steel Pier Cap	3 - Mod.	508	ft.	502	6	0	0
	Pier 5 has rusted bolts and rusting staining down the pier. There is some separation in the plates on Pier 7 and rusting. Large amounts of rusting towards the bottom of Pier 8 and some holes seen in the side of the steel pier column.						
	See photo(s): 2,3,4,5,6,9,18,19,27,54						
300 - Strip Seal Expansion Joint	3 - Mod.	434	ft.	70	272	92	0
	The missing strip seal in the south curb lane has been replaced with a foam type material, but the seal is already beginning to separate and allow leaking of the joint. The remaining elastomeric strip seals are in fair condition. The end joints were also replaced with the foam material for the full length of the joint and are in fair condition.						
	See photo(s): 27,28,29,30,31,32,33,34,35,36,37,38,39						
311 - Movable Bearing	3 - Mod.	140	each	121	19	0	0
	See photo(s): 6,7						

321 - Reinforced Concrete Approach Slab	3 - Mod.	2584	sq. ft.	2339	110	135	0
	Pot holes on the East approach slab. At the end they have been filled with asphalt, but that patch is bad. The west approach slab has been paved over with asphalt and there is significant transverse and longitudinal cracking throughout.						
	See photo(s): 1,2,3,4,5,6,7,8,9						
330 - Metal Bridge Railing	3 - Mod.	2455	ft.	206	1745	389	115
	Under construction at the time of inspection. North Railing 75% complete, south railing scheduled later in 2020.						
	See photo(s): 1						

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Element Inspection

815 - Drainage	3 - Mod.	58	each	0	0	49	9
	There is a hole in the drainage pipes at south Pier 1, Pier 2, Pier 3, Pier 4, and Pier 7. Additionally, there are areas of corrosion at the drainage pipe on Pier 5.						
	See photo(s): 48,49,50,51,52						
830 - Abutment Backwall	3 - Mod.	128	ft.	128	0	0	0

ODOT District: 12

CUY-00010-0869 _(1801325)

Date Built: 07/01/1935
Rehab Date: 01/01/1990

Major Maint: 01 - State Highway Agency
Facility Carried: SR 10
Traffic On: 5 - Highway-pedestrian

Routine Maint: 04 - City or Municipal Highway Agency
Feature Inters: VALLEY PKWY/ROCKY RIVER
Traffic Under: 6 - Highway - waterway

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 26446 - FAIRVIEW PARK (CUY county)
Location: CUY APPROX 200FT W STORYRD

Insp Resp B:

Inspector Hedges,Lauren
Inspection Date 09/10/2020 12:00:00 AM
Reviewer Malloy,Michael

Inspector Comments - Deck and Approach

Deck

Floor/Slab (SF)

There are some minor pop-outs, up to 3" in diameter, at random locations. Minor spalls at the interfaces with the stringers. A 48"x12" spall with exposed reinforcing exists between Stringers 9 & 10 in Span 5. Multiple spalls exposing rebar in Span 8. The deck floor in Span 9 has full-length longitudinal cracks with efflorescence. Transverse cracking prevalent in all spans.

Edge of Floor/Slab (LF)

Portions of the edges of the deck over the park trails had some loose concrete removed by inspectors. The south deck edge in Span 8 has several old large spalls with exposed rebar. Spans 1-4 on the south edge have multiple spalls at the top corner of the edge behind the railing.

Bridge Wearing Surface (SF)

Arch Spans 5-8 have random longitudinal and transverse hairline cracks throughout. Span 8 has had some isolated patching. There are some small (< 3 sq. ft. each) spalls and delaminations along the expansion joints and curb gutters.

Curbs/Sidewalk (LF)

Sidewalk is in good-to-fair condition with cracking in isolated areas. Multiple sections of sidewalk have been repaired. Older sidewalk sections have scaling. The north and south sidewalks at the west approach shows signs of heaving, with offsets up to 1-1/2 inches on the north sidewalk.

Bridge Railing (LF)

The tubular decorative railing is retaining water and corroding from the inside out. There are several locations where rails have rust holes (a few on south railing, but mainly on north railing). The concrete bases of the railing posts are spalling in some locations, exposing the railing anchors. Railing tube splices showing heavy corrosion.

2020 - The missing strip seal in the south curb lane has been replaced with a foam type material, but the seal is already beginning to separate and allow leaking of the joint. The remaining elastomeric strip seals are in fair condition. The end joints were also replaced with the foam material for the full length of the joint and are in fair condition.

Deck Drainage (EA)

Deck inlet grates along curbs are typically clogged with vegetation and debris. The clogged downspout at the north column of Pier 3 has blown out. Clean out cover in Span 6, north side, missing 7 out of 8 bolts. There are many large corrosion holes in the downspouts throughout the bridge (a large amount in Spans 6 and 7).

It appears some of the drainage system has been cleaned or in the process of being cleaned as part of the ongoing maintenance project.

Expansion Joint (LF)

Joint seal has been removed in 2/3 of the bridge, remaining joint membrane is impacted. Sidewalk sliding plates are perforated at the abutments, and at Pier 6 and 7 joints. Sidewalk cover plate 1/2" gap at Pier 6 joint, south side. Rusting bolt heads throughout.

2020 - The missing strip seal in the south curb lane has been replaced with a foam type material, but the seal is already beginning to separate and allow leaking of the joint. The remaining elastomeric strip seals are in fair condition. The end joints were also replaced with the foam material for the full length of the joint and are in fair condition

Approach

Approach Wearing Surface (EA)

Transverse cracks (some sealed), ruts, asphalt patching, and small potholes (mainly at joints with the rear backwall and and the forward approach slab).

Approach Slab (SF)

Filled pothole on rear approach slab in eastbound curb lane is cracking. Large asphalt filled (asphalt is sinking) pothole at east end of the forward approach slab in eastbound curb lane. Map cracking along backwall in rear approach.

Approach Embankment (EA)

Minor bare soil and rutting.

Approach Guardrail (EA)

Two posts on north guardrail, east approach, are missing spacer blocks. Impact on north guardrail of east approach near end. South guardrail, west approach, has collision damage and broken end post.

Signs (EA)

2018 - The "Corporation Limit" signs for Cleveland (along south railing) and Fairview Park (along north railing) are missing. 2019 - new chain link fence installed approx. 1 month prior to inspection, no signs replaced.

Sign Supports (EA)

Sign posts anchored to bridge railing posts on both sides near Tower 8.

Inspector Comments - General Appraisal

Superstructure

Superstructure Alignment (EA)

All spans show proper alignment.

Beams/Girders (LF)

Beams in approach Spans 1-4 and 9 are in good condition with minor surface rust through the PCS.

Diaphragm/X-Frames (EA)

Diaphragms between beams are in good condition.

Stringers (LF)

Old section loss on bottom flange past the bearing support of Stringers 3 and 9 at Tower 7 and Stringer 4 at Tower 8. One missing bolt on the bottom flange of Stringer 8 in Span 8 at Tower 7. One anchor bolt missing for Stringer 4 at Tower 7. Old bends (construction?) in bottom flange of Stringer 3 (over North Arch) in Span 5 between columns 5 & 6 and between columns 7 & 8.

Floorbeams (LF)

Multiple cracks noted in the non-structural, porous tack welds on the edges of the floorbeam bottom flanges, but no cracks in the base metal.

Lateral Bracing (EA)

Debris accumulates on bottom flanges of some of the struts between arches near the piers due to the angle they are at. Rust forming at weep holes on the downward face.

Bearing Devices (EA)

Arch skewbacks have laminar and surface corrosion. Stringer sliding bearings at tops of towers are functioning properly. Beam bearings at abutments are working properly, but exterior bearings have corrosion. Heavy rust on some exterior sidewalk stringer bearings.

Arch (LF)

The arches are in good-to-fair condition overall, with random areas of peeling paint and surface corrosion. The ends of the arch rib, at the bearing, have laminar corrosion on the fill plate and at the bearing nut. This area commonly has rivet head loss up to 30%. There are many localized areas of painted over pitting up to 1/4". Where the struts and lower columns are attached to the arch rib, the web and flange commonly had up to 1/4" pitting. Surface corrosion is common along the lower chord flange angles. There are localized areas of chalking/ faded paint on the arch rib web and pack rust between the flange angles. Span 5, North arch rib, has a large area of rust staining on the top flange that appears to be coming from Column 11. The top flange plate adjacent to the columns typically has 1/4"-1/2" pitting. The interiors have surface corrosion with localized areas of section loss. Interior side of welded shut hatches in Span 7 exhibit undercut welds and rust on the interior webs. Possum was present in the Pier 5 base of the north arch. There are 5 locations where there are issues with the arch access door. In Span 5, the N access door is missing and is covered by a filter fabric. The metal ties holding it are rusting away. In Span 5, the S access door has a broken latch, so it cannot be locked. The door also does not sit flush, which is causing the hinge to bend and fatigue. It is currently being held together by cord. In Span 6, both the N & S access doors have broken hinges and are only held on by the lock and friction. In Span 8, the N access door has a broken hinge and is only held on by the lock and friction.

Arch Column/Hanger (EA)

Arch columns are in fair condition (The SMS Transition Rating rates the arch columns as poor. This is based on isolated areas controlling the Element Level Rating for an entire member. Using the Condition Rating criteria, a high 2-fair condition rating is more accurate for these members.) There is minor pack rust re-activating between the plates along the full heights of the columns on both interior and exterior faces. Surface corrosion and accumulation of debris in the bottom 3' of most columns. Reactivated pack rust has cracked some of the erection tack welds, but no propagation into base metal was noted. 1/8"-1/2" pitting at the base of the columns on the high side, where water and debris sit.

Protective Coating System (LF)

The paint is in fair-to-poor condition on the superstructure and on the exterior faces of the columns and towers, but there is a general failure of the paint system inside the towers and columns, with peeling

paint, surface corrosion and laminating corrosion. Tower legs below joints that allow water to leak through (i.e. north leg of Tower 7) are the worst areas. Also, the exterior beam bearings at the abutments and some towers have corrosion. Wide spread rusting through the original PCS inside the arches.

Pins/Hangers/Hinges (EA)

Pins at ends of arches have surface corrosion. The pin nuts have laminar corrosion with up to 1/8" pack rust.

Fatigue (LF)

The majority of the erection tack welds on the bottom flanges of the floorbeams and the base of the arch columns are partially to fully cracked; none of these cracks have propagated into base metal and all of the cracks are in compression areas. The welds inside the towers are in good condition, although the welded stiffeners themselves have heavy section loss in some cases. There are cracks in several welds of plates on the tower caps (next to stringer bearings), but none are propagated into the base metal.

Utilities (LF)

The utility supports and cages are heavily corroded; worst location is in span 6. Several conduits are open. Raccoons use the utility conduits to get from the abutments to the towers. There is a missing bolt at the drain support on the S rib of Span 7 between Columns 4 & 5.

Substructure

Abutment Walls (LF)

The abutment walls are in good-to-fair condition. The West Abutment has rust stains and 3 hairline/narrow vertical cracks. The East Abutment is a cellular abutment and has a 4' long horizontal crack at the top east edge of the interior south wall. Vagrant belongings inside cellular forward abutment.

Abutment Caps (LF)

Scaling concrete around Stringer 3 Seat on East Abutment. There are a few horizontal cracks below Stringer 12 on the East Abutment.

Pier Walls (LF)

The web walls between the tower/arch bases have transverse cracking and map cracking. There are several areas of patching that are in good condition when sounded with hammer. There is a 5'x3'x3" spall with exposed rebar under the south skewback for Tower 8, but the exposed painted rebar is not actively corroding.

Pier Caps (LF)

The caps for the steel piers and towers are in fair condition with minor rust localized near connections. 2018-Tower 6 has ponding water (3" deep) at the top. Tower 7 has ponding at top of north leg. Raccoon fur and droppings inside most of the caps. 2019 - no ponding noted. Wire screens installed over tops of caps have failed to keep out raccoons (peeled open).

Pier Columns/Bents (EA)

The pier columns are in fair condition. This is based on isolated areas controlling the Element Level Rating for an entire member. Using the Condition Rating criteria, a high 2-fair condition rating is more accurate for these members.) The deficiencies are noted by levels, and are are numbered between internal horizontal bracings starting from 1 at the bottom of the pier column. The interiors of the towers have

section loss in multiple locations. Multiple stiffeners inside the bottom of Towers 5, 6 and 7 have 50%-100% section loss. Corrosion holes in plates of several towers from 1/8" up to 2-1/2" in diameter but not concentrated in any one plate. Pack rust is distorting the bracing angles up to 1 1/4". There is a missing rivet between Levels 2-3, 6-7, and 11-12 of Tower 5, at the top of the North leg of Tower 6, at Level 3,4,5 and 8 of the North leg of Tower 7, at Level 18 of the North leg of Tower 7, at Level 4 of the South leg of Tower 8, and at Level 7 of the North leg of Tower 8. There are two missing rivets at Levels 4, 5, 7, and 11 of the North leg of Tower 8. The interior of the North Tower at Pier 7 has up to 1 ft deep pile of rust along the bottom of the steel tower, severe section loss on all members and limited access into cross bracing and host to 2 raccoons. The exterior of the towers has up to 3/4" pack rust along the cover plates. The South leg of Tower 5 has 3 missing rivets. The tower strut at Tower 6 has laminar corrosion, ponding water, & pack rust on the top plate. Up to 50% section loss on some rivet heads. The exteriors of both columns of Piers 2 & 3 have surface corrosion. Water is infiltrating the interiors of the steel columns of Piers 1, 2, and 3 from the top. Some laminating corrosion is at the top and surface corrosion for the rest of the column interiors. There are broken latches (locks cannot be used) at the access doors for Pier 2 at the north leg, Tower 4 at the south leg,

Backwalls (LF)

Abutment backwalls are in good condition.

Wingwalls (EA)

Wingwalls are in good condition.

Slope Protection (EA)

New slope protection under spans 1 and 2 with trail project. The west slope under Span 5 has channel formed by erosion that starts just below Tower 4. The East bank of the Rocky River consists of easily erodible shale and has sloughed up against and overtopped the concrete base of Tower 8. The slope on the west side of Tower 8 is severely eroded. The shale east embankments continue to slowly erode. A drainage swale has formed from the forward abutment down the eroding shale slope to the base of Tower 8. The west embankments are heavily vegetated.

Culvert

Inspector Comments - Waterway

Waterway Adequacy

Channel

Channel Alignment (LF)

Channel is well aligned perpendicular to structure; normal flow is only under Span 8.

Scour Critical