



To: Mr. Troy White  
Public Works Director

From: Nina Dickhausen, PE  
Project Manager

Date: 04/11/2022

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## Essential Repair Finding – JSTWN-003

The following bridge is recommended for repairs as recently discovered by the bridge inspection program:

**Responsible Party:** Town of Johnstown

**Facility Carried:** County Road 46.5

**Feature Intersected:** Little Thompson River

**ERF Color Code Classification:** **YELLOW** (See definition at end of letter)

**Structure Description:** JSTWN-003 is a single span bridge with corrugated metal deck supported by steel girders on steel abutments.

### Findings

During the inspection on 4/4/2022, the inspectors noted a large pothole along the centerline of the deck, which appears to be from damage from construction equipment. This damage created a hole and numerous cracks in the corrugated deck flutes below the pothole. The pothole is 3 foot long x 4 foot wide x full depth of asphalt with a total area of broken up asphalt 5 feet long x 6.5 feet wide approximately 12 feet from the east abutment. On the underside, there is a 2 inch diameter hole punched through the deck at this location (in Bay D) with adjacent cracks along the deck flutes in Bays C through E. When driven over, the deck appears to be cracked longitudinally over Girder E based on the deck's deflection adjacent to the girder.

### Recommendations

Due to the unknown extent of cracking over Girder E, and the possibility for the cracks to propagate or larger local failures to occur, it is recommended that the portion of the cracked deck be replaced and the area repaved with asphalt within 90 days.

As an alternative to deck replacement, the Town could monitor the deck quarterly (until the next inspection) to identify if the condition worsens with more extensive cracking and/or holes. Note, if the cracked portion is not replaced, the cracks may propagate, and additional deck area may require replacement. The area of deteriorated asphalt should still be repaired with 90 days if this option is selected. If the Town chooses to monitor the deck's condition, and more significant local failures are observed, the affected deck portion should be replaced or the structure closed, until funds are available to replace. The Essential Repair for this structure has been given a **YELLOW** Priority.

### Let us know your Plan of Action

CDOT would like to know your plan of action to repair or mitigate the above conditions. Please respond to this ERF within 14 days with a very brief plan of action that includes what repairs are planned and a general timeframe for when you expect repairs will be made.



Please let me know if you have any questions or if I can provide any additional information regarding this inspection.

Thank you for your time,

Nina Dickhausen, PE  
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(512) 808-8251

Inspector Printed Name: Nina Dickhausen

Inspector Signature: *Nina Dickhausen*

Date of Inspection: 04/04/2022

Senior Inspection Engineer Printed Name: Benjamin Kenney

Senior Inspection Engineer Signature: *B*

Date Reviewed: 4/12/2022

By signing here, I have determined that the above description of Essential Bridge Repairs meets the established criteria set forth by CDOT Staff Bridge and that the repair is essential. Color code prioritization has been determined and notification of the above findings has been sent to the local agencies' public works or road and bridge departments.

### Definition, Classification and Prioritization

Definition of Essential Bridge Repairs: Repairs necessary to ensure the safe and continued service of off-system major bridge structures. Examples of essential repair needs include but are not limited to: tension members identified as fracture critical members within the Structure File Data and which are damaged by natural or impact forces, a condition which results in a restriction of the maximum acceptable load carrying capacity of a structure to some value less than 27 Tons on the Type III, 3-axle truck at the Operating Rating level, three adjacent crushed stringers, three broken stringers in one span, two of which are adjacent to one another, stringers with rot at the ends, which may cause the stringer to fall off the timber cap, "mushrooming" for a depth of 2 inches on three adjacent stringers, rot in the top of 80 percent of all stringers in one span, which reduces the effective depth by 25 percent, rot in timber piles that affect the carrying-capacity of the structure, concrete girders with over 30 percent of the primary moment steel severed, loss of section in beam ends and/or spalls in concrete girder supports where girders have less than 80 percent bearing area remaining, steel members with over 30 percent section loss, steel or aluminum culverts including super spans with unusual section displacement and/or gaps at the point of overlap and cracks in bolt lines, scour greater than one foot since the last inspection which has caused vertical or horizontal displacement, scour under a spread footing, which has caused a loss of 15 percent of the bearing area.

When identifying a needed repair as essential, the Bridge Inspection Program Manager will classify the repair based on the appropriate time frame for addressing the problem as follows:

Classification	Legacy Color Code	Target Time Frame for Completion	Priority	Federal NBIS	Initial Notification	E-Mail Notification Time Frame	Follow-up Time Frame
Urgent Priority Repair	Orange	Within 30 days	Urgent		E-Mail Notification	Within 10 working days of finding	14 Calendar days of E-Mail
High Priority Repair	Yellow	Within 90 days	High		E-Mail Notification	Within 10 working days of finding	14 Calendar days of E-Mail
Moderate Priority Repair	Green	Within one year	Moderate		At presentation	As needed (not required)	As needed or At next inspection
Monitor	Blue	Specified in the letter	Monitor		E-Mail Notification	Within 10 working days of finding	As suggested in the notification
Low Priority Repair (maintenance item)	No Color	As funding allows	Low		Included with transfer files to Owner	N/A	At next inspection

CC:

Lynn E. Croswell, P.E., CDOT Bridge & Structure Inspection Engineer  
 Natasha Butler, P.E., CDOT Bridge Asset Management Engineer  
 Josh Dunbar, CDOT Structure Inspections Project Manager  
 Andrew Brown, CDOT Bridge Inspections Project Manager  
 Spencer Tucker, P.E., FHWA Division Bridge Engineer



Full Depth Pothole and Broken-up Asphalt on Deck



Hole and Cracking in Deck Flutes in Bay D





Cracking Across Deck Flute Adjacent to Hole above Girder D