

Office of the Lucas County Engineer

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January 5, 2022

TO: Board of Lucas County Commissioners
Attention: Jody Balogh, Clerk

FROM: Mike Pniewski, P.E., P.S., Lucas County Engineer

SUBJECT: **2021 Bridge Inspection Report**

Honorable Commissioners,

In accordance with Section 5543.20 of the Ohio Revised Code, the County Engineer inspects and reports the condition of all bridges on the county and township roads outside of municipalities and bridges within municipalities on some former county roads. For bridges with condition ratings of seven and above, these inspections must be conducted every 24 months. For bridges with conditions ratings of six and below, these inspections must be conducted every 12 months. However in 2021, all bridges under county jurisdiction were inspected.

Introduction

A bridge, in Ohio, is defined as a structure with a clear span of ten (10) feet or more, measured along the centerline of the roadway. The Lucas County Engineer's Office is currently responsible for the inspection and maintenance of 184 (180 vehicular and 4 non-vehicular) bridges. Within ninety (90) days of each bridge inspection, the County Engineer reports the condition of each bridge to the Ohio Department of Transportation (ODOT). ODOT maintains a master inventory of every bridge in the State and reports the data to the Federal Highway Administration on an annual basis. In total, the State of Ohio has approximately 45,000 bridges that are inspected by various counties, municipalities and ODOT, the second largest inventory of all states. Roughly sixty percent of the bridges in the state of Ohio are maintained by County Engineers.

After the collapse of the Silver Bridge, 1967 Point Pleasant, West Virginia, the United States Congress added a section to the Federal-Aid Highway Act of 1968 to establish a National Bridge Inspection Standard. Ohio established its own inventory and reporting in 1973 to fulfill these requirements.

The collapse of the I-35W Bridge in Minneapolis on August 1, 2007 brought the next big change to the County Bridge Program. After the collapse, the County Engineers Association, ODOT and the Federal Highway Administration (FHWA) reached an agreement in 2009 that all federal

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bridges (bridges 20 ft. or greater) must have a load analysis performed by October 1, 2013. Lucas County performed an analysis on each of their federal bridges to meet this requirement.

Since then further requirements have been placed, and all federal bridges will need to be load rated for Special Hauling Vehicles (SHV's) and overweight Emergency Vehicles (EV's) by December 31, 2022. The Lucas County Engineer's Office is in the process of updating all bridge load ratings and is on schedule to meet the deadline.

Lucas County Bridge Facts

- There are 194 bridges on the Lucas County bridge inventory. The Lucas County Engineer's Office is responsible for inspecting each one on a yearly basis (at a minimum) and maintaining them. In 2021, inspections were conducted between September and November 2021.
- 116 of the structures are over 20 feet in length, which is the length that the National Bridge Inspection Standards requires inspection for. All other structures are between 10- and 20-foot span, which are required by the State of Ohio to inspect annually and maintain.
- The average age of bridges under County jurisdiction is 44.8 years old and ODOT estimates the average useful life of a bridge to be 50 years. Some of the bridges will need to be rehabilitated or replaced to accommodate wider pavements or other improvements, but with good maintenance, many bridges should have a useful life of 75 years.
- The county annually inspects all bridges on the current bridge inventory as required by the ORC. As part of this inspection, a report is made, and bridges are rated on a scale from 0 to 9 which is considered their General Appraisal number. With 9 being excellent condition, and 0 being failed.
- There are 3 federal structures with weight restriction limits on the County system, one of which is scheduled to be replaced by 2024 (Perrysburg-Holland Road, over Cairl Creek), and one scheduled to be replaced by 2028 (Gibbs Road over Ten Mile Creek). The other bridge (Omar Road over Shantee Creek) is on a low traffic, rural road.
- Longest bridge under County responsibility - 418 feet, Summit Street Bridge over the Ottawa River. This structure is also the only structure in Lucas County that requires a Dive Inspection be performed due to the depth of the Ottawa River at this location.
- Oldest known bridge – Bancroft Road Bridge #93 over Wiregrass Ditch east of Schwamberger Road built in 1909 with a major rehabilitation in 1982. In addition, there are 3 other bridges on Dutch Road, all built in 1910, reconstructed in 1930 and rehabilitated in 1982.
- In 2021, two (2) bridges were replaced throughout the County, one bridge had a new bridge deck with new concrete bridge rail placed (Sylvania – Metamora Road over Ten Mile Creek) and one bridge had new concrete bridge rail placed (Yondota Road over Cedar Creek). In 2022, it is anticipated that two (2) County structures will have large rehabilitation projects (greater than \$100,000). These are located on Garden Road over Cairl Ditch and Sturbridge Road over Ottawa

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River. In addition, county crews will perform general maintenance on many structures as needed throughout the year.

Current Bridge General Appraisal Ratings

The General Appraisal rating for a bridge compares the physical condition of the bridge to its condition when the bridge was brand new. It does not consider adequacy of design, only condition of structural elements of the bridge, the stream channel and the roadway improvements. The adequacy of design is determined through the sufficiency rating of the bridge and the load ratings that were required in 2013 to be performed on all County structures that are over 20 feet in span.

Lucas County Bridges on County and Township Roads

General Appraisal	Condition	2021 # of Bridges	2020 # of Bridges	2019 # of Bridges
9	Excellent	43	43	42
8	Very Good	44	44	46
7	Good	37	41	37
6	Satisfactory	30	24	24
5	Fair	4	5	9
4	Poor	3	4	4
3	Serious	0	0	0
2	Critical	0	0	0
1	"Imminent Failure"	0	0	0
0	Failed	0	0	0
Total =		161	161	162

Lucas County Bridges Inside Municipalities

General Appraisal	Condition	2021 # of Bridges	2020 # of Bridges	2019 # of Bridges
9	Excellent	11	11	11
8	Very Good	10	10	9
7	Good	6	6	6
6	Satisfactory	4	5	6
5	Fair	2	1	0
4	Poor	0	0	1
3	Serious	0	0	0
2	Critical	0	0	0
1	"Imminent Failure"	0	0	0
0	Failed	0	0	0
Total =		33	33	33

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For the three bridges rated as “poor”, all are scheduled to be rehabilitated or replaced on the 10-year bridge Capital Improvement Program. Generally, the system of County-maintained bridges is currently in an acceptable condition. However, a large percentage of bridges under County jurisdiction are beginning to reach the end of their life span. Additional funds as well as long-term programming similar to the five-year highway program needs to be continued to maintain the bridges in acceptable condition and to meet the needs of the community.

In many cases, bridges will need to be rehabilitated or replaced to accommodate wider pavements or other improvements required with heavier loads and more traffic as more of the County develops, but with good maintenance many bridges should have a useful life of 75 years. The extended Capital Improvement Program (2022-2032) includes 7 bridge replacements and 6 major bridge repairs.

I continue to look forward to working with you in maintaining and improving Lucas County’s transportation infrastructure.

Very truly yours,

Mike Pniewski, P.E., P.S.
Lucas County Engineer

CC: Bryan Zienta, P.E., Bridge Engineer