

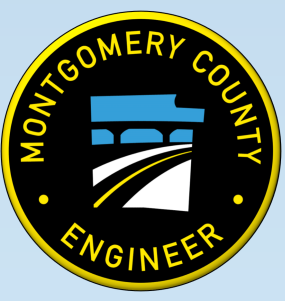
MONTGOMERY COUNTY



2022

ENGINEER'S OFFICE

ANNUAL REVIEW



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Picture captured by Matt Venable (Construction Administrator)

A MESSAGE FROM PAUL W. GRUNER



The 2023 year at the Montgomery County Engineer's office was once again busy and exciting! The Third Street Peace Bridge, which opened in 2021, drew a number of accolades in 2023. These included articles in Roads and Bridges Magazine and Aspire – The Concrete Bridge Magazine. In addition, it won the "2021 Outstanding Short Span Roadway Bridge" award from the Association of Bridge Construction and Design, and the American Council of Engineering Companies of Ohio "Honor Award." Project Manager Joe Dura won the Project/Program Manager of the Year award from the National Association of County Engineers. Our signature project for 2022 was the Mad River Road/Alex Bell Road roundabout in Washington Township that improved the level of service from "F" to "A," will reduce crashes, will greatly reduce injury crashes, and will prevent fatal crashes.

Other projects completed in 2022 included the Federally-funded resurfacing on North Dixie Drive in addition to our normal resurfacing program, the major rehabilitation of a large bridge on Philadelphia Drive over the Stillwater River in Butler Township, reconstruction of the Oxford Road Bridge in German Township, the reconstruction of the Carnation Road Bridge in Miami Township, replacement of a bridge on Little York Road in Butler Township, and reconstruction of a bridge on Air Hill Road in Perry Township.

Other activities in 2022 included the completion of a classification and compensation study for all non-union employees. Assisted by a consultant, we updated all job descriptions into a uniform format and adjusted compensation ranges for all classifications to be sure they are competitive in the marketplace. To fill the position as head of our finance group, we promoted Ronelle Kinney to comptroller. We also filled two positions that had been vacant for some time. Andrew Coleman was hired to be our Land Records/GIS Manager, and has greatly improved our GIS capabilities. Sky Shelle was hired to be our first full-time Stormwater Program Manager and is bringing us into compliance with the EPA MS4 permit. In addition, Ryan Boutwell came on board to head up our Professional Surveying Services. All this was accomplished while the county Facilities Department was completing the renovations of our downtown office space.

Looking ahead to 2023, complete reconstruction of a large bridge on Lamme Road over Holes Creek began early in the year. We have two design-build projects underway: the major rehabilitation of Huffman Road in Jackson Township and the major repair of the Free Pike bridge in Trotwood. We will be doing a major repair project on a bridge on Gettysburg Avenue over Wolf Creek in the City of Dayton, the total replacement of a bridge on Airway Road in the City of Riverside, and a major rehabilitation of the Wagner Ford Road bridge over the CSX railroad in Harrison Township. We are doing a county-wide update of ADA compliant curb ramps, and will have another Federally-funded resurfacing project on Frederick Pike. Finally, we will be bidding the complete reconstruction of Shoup Mill Road from Main Street to Riverside Drive in Harrison Township.

We are also constructing two new salt barns at our Little Richmond Road facility to replace two very old and deteriorating wooden domes.



Cover Photo:

Mad River Road-Alex Bell Road Roundabout

Wagner Ford Road Bridge Rehabilitation



MCEO has scheduled a project in 2024 to rehabilitate the deteriorated abutments and make other repairs to the Wagner Ford Road Bridge over a CSX Railroad, originally constructed in 1966.

The existing bridge, over the then-B&O railroad, was constructed using a new bridge technology in the 1960s: precast prestressed concrete beams. The non-composite PS concrete beams were 54-inches deep, and spanned the existing and future railroad corridor with an impressive 120-foot clear

span supported by tall cast-in-place concrete abutments. Ultimately, it was determined the original expansion joints at the beam ends were not water tight, and the leaking joints allowed salt-laden runoff down the backwalls, across the seats, and onto the abutment faces.

A project to replace the deteriorated concrete beams with steel plate girders and new strip-seal expansion joints was competed by MCEO in 1991. Unfortunately, the years of exposure to de-icing salt chlorides began an irreversible process of corrosion in the reinforced concrete abutment walls, which today have experienced severe spalling, delamination, and corrosion.

The upcoming bridge rehabilitation project will remove and patch the deteriorated concrete and add sacrificial galvanic anodes to protect against future corrosion. New expansion joints will be installed, and the deck will be sealed with soluble reactive silicate (SRS) sealer. Pedestrian fences will be added on both parapets and the approach guardrail in Harrison Township will be replaced. Traffic will be maintained on alternate halves in the four-lane bridge during construction.



LOOKING AHEAD

Lamme Road Bridge Replacement



In January 2023, work began on a \$2.6M project to replace the structurally deficient and functionally obsolete bridge on Lamme Road over Holes Creek just north of Alex Bell Road. The bridge was originally constructed in 1957.

The new bridge will be widened to match the roadway width, and curbs and raised sidewalks will be added on both sides of the bridge to connect the existing sidewalks. The bridge will be constructed in two

phases, allowing pedestrian traffic to be maintained while the bridge is closed to vehicular travel.

A new traffic signal with mast-arm poles will be installed at the Alex Bell-Lamme Road intersection, and deteriorated curb and sidewalk south of the bridge will be replaced. Lamme Road will be resurfaced from Alex-Bell Road to Bushwick Drive as part of the bridge replacement project.



Taylorsville Road Bridge Rehabilitation



In the late spring of 2024, the Montgomery County Engineer's office will move forward with the Taylorsville Road Bridge Rehabilitation Project. The existing superstructure's box beams have deteriorated with exposed/broken prestressed steel. In addition to the superstructure, the existing substructure walls have a few areas in need of repairs and a weir wall that needs to be removed. The existing structure was built in 1970, and was rehabilitated in 1992.

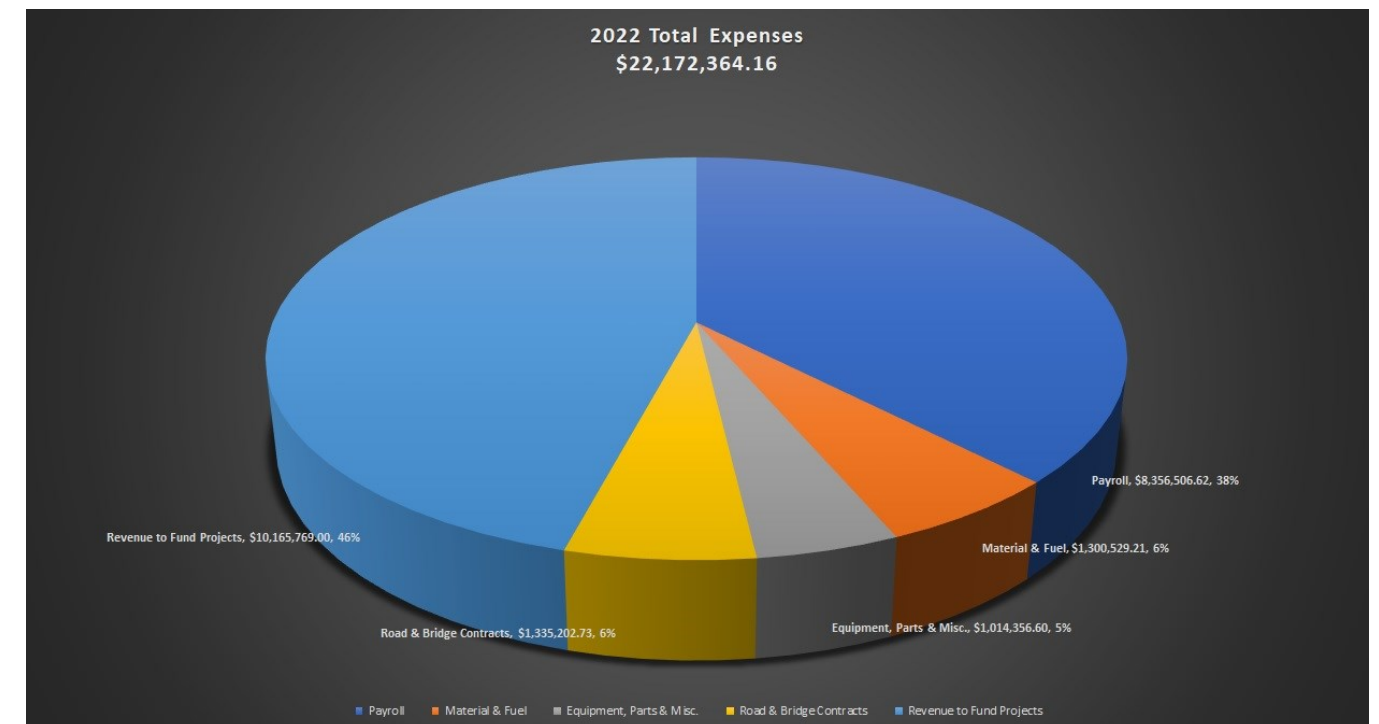
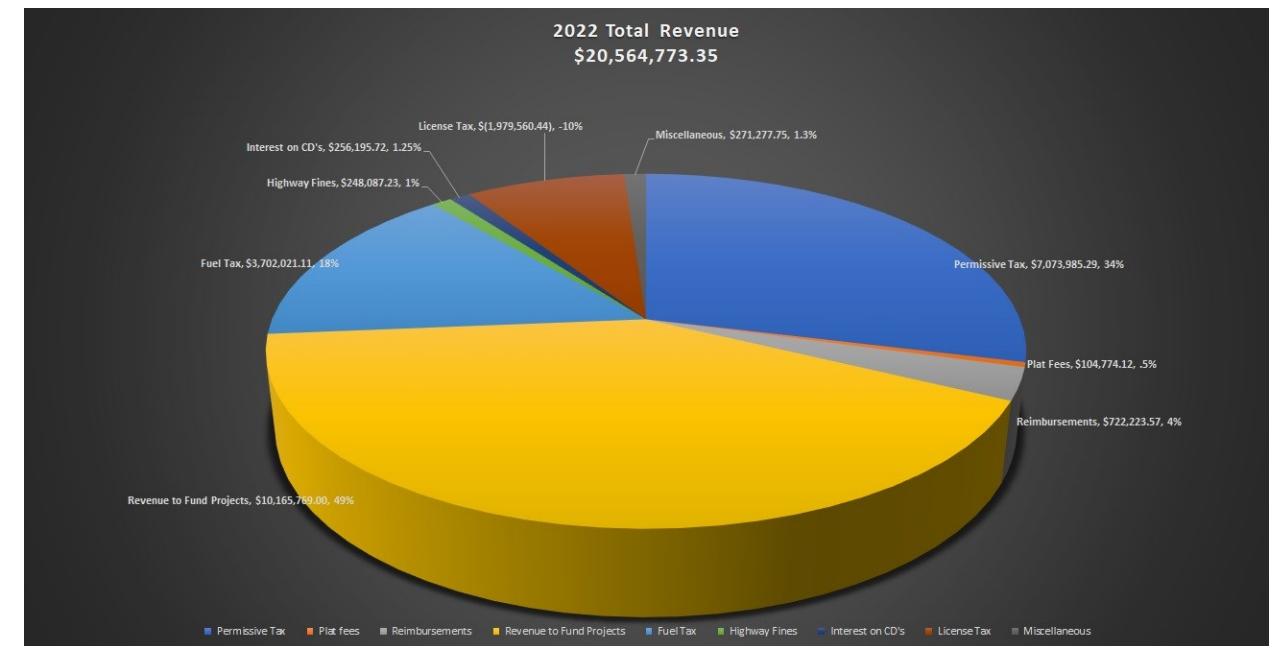
The structure has exceeded its life expectancy. To alleviate all

concerns, the superstructure will be replaced with a new prestressed concrete composite box beam bridge structure. The existing guardrail and bridge rail will be upgraded to today's safety standards.

There will be a new sidewalk and curb. The project is scheduled to be awarded in April 2024 with construction expected to begin in May 2024. Because this location serves over 10,000 vehicles per day and is a main arterial road for area shoppers, the project will maintain traffic with phased construction. A substantial amount of the work will be performed within the existing right-of-way with minor temporary easements as required.



2022 Revenue & Expenses



PLATS & SITE PLANS

Completed Projects in 2022

Plats	
Rivendell Section 1	Miami Township
Paragon Farm	Washington Township
Washington Trace Section 16	Washington Township
Washington Glen Section 15	Washington Township
Site Plans	
Walgreens	HarrisonTownship
2850 Needmore Road	Harrison Township
Redemption Christian Tabernacle 2022 addition	ButlerTownship
Tim Hortons	Harrison Township
DLM Storage and Loading Dock Addition	WashingtonTownship
Hanson Home Audio	WashingtonTownship
J&B Lawn & Landscaping	ButlerTownship
Chick-fil-a #2182	Butler Township
Dollar General	Harrison Township
Grant Park McEwen Road Entrance	WashingtonTownship
Unit 7—The Greens at Paragon Condominium	Washington Township
Buckeye Storage	Washington Township
Ram Precision	Washington Township
Imagine Woodbury Schools	Harrison Township
979 Congress Park	Washington Township

Routine Preservation Contract 2022

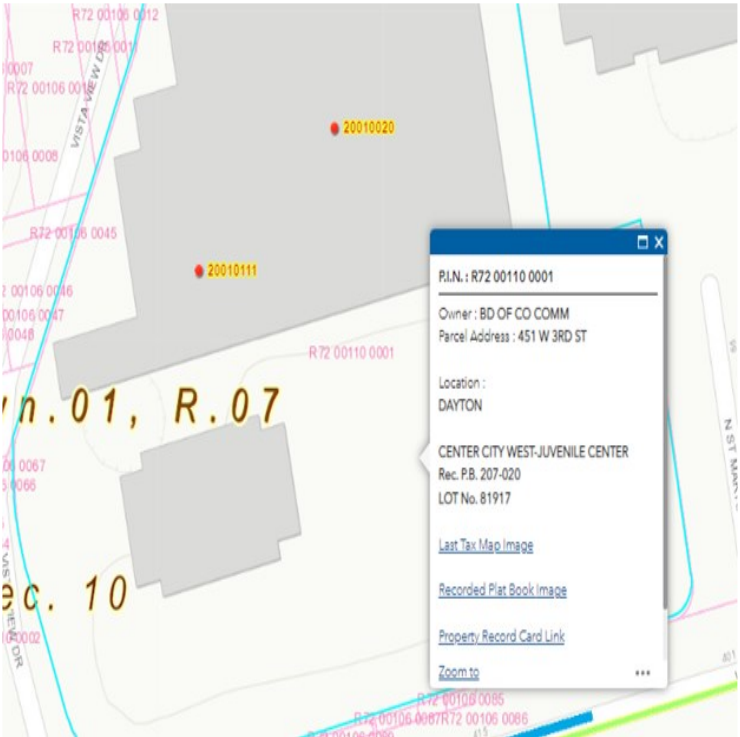
Striping	0 Miles Center line 0 Miles Edge Line	No Striping was done in 2022
Crack Seal	18.65 Miles County 5.29 Miles Township	\$144,435.85
Asphalt	16.2 Miles County 2.48 Miles Township	\$2,770,382.96

GIS/Land Records Manager

In August 2022 Andrew Coleman joined MCE as the GIS Manager/Land Records Manager.

With the help of Woolpert and the Montgomery County Auditor’s Office, he re-established a process for providing users with access to the most recent county-wide parcel data in our online Land Records map. By clicking on a parcel within this map, up-to-date information such as Tax PIN Number, Tax Maps, Plat Books and Property Record Cards can be quickly and conveniently accessed.

[Land Records Map](https://mceo.maps.arcgis.com/apps/webappviewer/index.html?id=6bb8286813f64ef58f748663dd579270) <https://mceo.maps.arcgis.com/apps/webappviewer/index.html?id=6bb8286813f64ef58f748663dd579270>




With input from engineers in our office, Andrew was able to update and improve our online Road Responsibility map. This map helps stakeholders, as well as county engineers, understand where road authority and ownership lie throughout the county.

[Road Responsibility Map](https://mceo.maps.arcgis.com/apps/webappviewer/index.html?id=47b89b8ca1914a6293557230797bf761) <https://mceo.maps.arcgis.com/apps/webappviewer/index.html?id=47b89b8ca1914a6293557230797bf761>

Andrew is in the process of designing a Stormwater GIS Mapping solution for our municipal separate storm sewer system (MS4) permit. This permit helps mitigate water pollution by tracking and controlling sources of pollutants being discharged into our watersheds. The goal of this project from a GIS perspective will be to provide our stormwater program with the ability to update, enter, and maintain GIS data (catch basins, manholes, pipes, etc.) from both in the field and in the office.

MS4 Permit Program

The Engineer's Office made great strides in 2022 towards completing all Ohio EPA permit requirements. The new Stormwater Program Manager and Land Records/GIS Manager worked together to get a significant portion of the stormwater system electronically mapped. Spill response plans were created for four county facilities and implementation has begun. The Department also began actively monitoring erosion at construction sites. Working at any time on up to 20 active sites, MCEO staff educated contractors on erosion control expectations and saw significant increases in voluntary compliance.



Little York Road Bridge Replacement

This project on Little York Road is located approximately 2/3 mile west of North Dixie Drive in Butler Township. The project involved the replacement of a structurally deficient bridge with a 15'-0" span x 4'-0" rise precast reinforced concrete three-sided flat-topped culvert. The length of the structure was increased, and safety grading was installed to eliminate the need for guardrail. Construction began in early June 2022 and was completed in early August 2022 by Brumbaugh Construction at the final cost of \$484,735.45.



MONTGOMERY COUNTY ENGINEER

Force Account 2022

ROADWAY NAME	CULVERT/ BRIDGE #	DATE COMPLETED	ESTIMATED COST	ACTUAL COST
Sedgewick Circle		5/5/22	\$12,260.33	\$1,1453.79
Upper River Rd	39	5/24/22	35,668.42	35,554.21
Mad River Rd	Whg. 79-0.72	6/6/22	27,262.19	26,923.53
Hemple Rd	Jef. 46-0.01	6/9/22	10,877.09	10,364.86
Providence Pk	Per. 34-6.33	6/15/22	10,477.99	9,810.16
Meeker Rd	But. 228-3.75	7/12/22	10,561.78	9,713.24
Providence Pk	Per. 34-1.18	7/20/22	\$6,254.87	6,084.94
Philadelphia Dr	Har. 159-0.75	8/1/22	20,482.45	20,185.96
Philadelphia Dr	Har. 159-1.15	8/8/22	21,682.60	21,213.00
Philadelphia Dr	Har. 159-1.20	8/10/22	12,387.57	12,732.26
Crawford Tom's Run Rd	Per. 7-1.00	8/17/22	6,262.26	5,837.10
Manning Rd	Ger. 64-0.44	8/23/22	6,594.18	6,297.41
Manning Rd	Ger. 64-0.20	8/25/22	9,310.53	9,937.76
Dayton Cincinnati Pk	Har. 99-0.69	8/31/22	8,400.23	8,052.80
Miamisburg Springboro Pk	Mia. 166-3.90	9/15/22	19,824.35	19,655.32
Manning Rd	Ger. 64-4.02	10/25/22	6,903.64	6,353.76
Jackson Rd	But. 10-0.01	11/9/22	9,784.13	9,848.92
		Total Bridges/Culverts =	\$ 234,994.61	\$ 230,019.02

Montgomery County Opens First Roundabout on County System in 2022



In August 2022, the \$1,000,000 project to construct a modern roundabout at the Mad River Road-Alex Bell Road intersection in Washington Township opened to traffic! As expected, the roundabout has greatly improved traffic operations and enhanced safety at this busy location.

Roundabouts reduce the number of conflict points encountered at traditional intersections and eliminate traffic signal energy consumption and maintenance, all while

reducing traffic delays, congestion, and queues!

The design for the Mad River-Alex Bell roundabout included planting over 800 perennials, 130 deciduous shrubs, 190 evergreen shrubs, and six sweetbay magnolia trees. Washington Township participated in the project by providing the design and construction of an irrigation system to keep the landscaping growing, healthy, and beautiful.

The new roundabout was constructed by general contractor R.B Jergens, Inc. RBJ's electrical subcontractor, Security Fence Group, responded to supply-chain problems in obtaining critical street lighting components by designing and installing temporary street lights that allowed the roundabout to open on schedule in August before the school year began. SFG came back to install the permanent street lights in October.



North Dixie Drive Resurfacing

North Dixie Drive within Harrison Township was resurfaced from roughly the Great Miami River to Needmore Road, a distance of 2.2 miles. In addition to the resurfacing, 52 ADA ramps were either replaced or installed to current ADA standards. Barrett Paving Materials began work in early June 2022 and completed the work at the end of August for a total cost of \$1,314,934.32.



OXFORD ROAD RECONSTRUCTION PROJECT

The Montgomery County Engineer’s Office planned the reconstruction of the Oxford Road Bridge #GER-60-4.75 over Mudlick Branch Creek. The existing bridge had deteriorated beams which placed the inspection rating of this bridge in fair condition, rated 5. This bridge was built in 1964 and had exceeded its useful life.

The proposed superstructure replacement consisted of removing the old 33” non-composite box beams and installing new 33” composite box beams. This project also included new rock channel protection and replacement of the safety rail to meet the current State standards. All of the necessary improvements enhanced the inspection rating of this structure.

The project was contracted to Eagle Bridge Construction. The project began construction on May 16, 2022 with substantial completion of the project, (road open to traffic), on August 8, 2022. The final contract amount was \$602,033.95, and the project was partially funded by the Ohio Public Works Commission and by the Montgomery County Road A & G sources.



Carnation Road Bridge Reconstruction



This project concerned a single-span bridge built in 1963 located on Carnation Rd in Miami Township over Owl Creek. Prior to construction, this structure was rated as being in 5-Fair condition with significant spalling, exposed rebar, and longitudinal cracking with efflorescence and stalactites. In addition to the condition of this bridge, the MCEO did not have construction drawings for the original structure. Given the exposed rebar and an unknown internal beam design, we determined the

best course of action was to conduct a superstructure replacement. To fund this project, we received a grant from the Ohio Public Works Commission in the amount of \$96,000 and the remaining \$288,000 was funded by the Road A&G account. Work was completed in November 2022, and consisted of replacing the existing double-T beams with prestressed box beams and patching the abutment walls as needed.



Philadelphia Drive Bridge Rehabilitation

This project consisted of a four-span prestressed concrete box beam bridge located in Butler Township over the Stillwater River. Project planning began in 2015 with the application for a grant administered by the Ohio Department of Transportation. The existing structure had a superstructure, substructure, and general appraisal of 4-Poor. Many of the beams had multiple prestressing strands exposed and/or broken. The concrete of the existing piers was spalling, leaving some of the reinforcing steel exposed. The existing beams were removed and replaced, and the piers and abutments were patched and resealed. The original structure was constructed to an outdated thoroughfare plan and was unnecessarily wide.



While the bridge was wide enough to accommodate four lanes, it was only striped for two. This left the bridge with 12-foot shoulders on both sides of the road. As a part of this project, the structure was narrowed to reduce cost. This project was fully funded by LBR (80%) and OPWC (20%) grants for a total of \$2,755,588.20. Construction was completed more than a month early due to construction techniques employed by the contractor. These techniques eliminated the need for a temporary causeway, and reduced the environmental impacts to the Stillwater River.

2022 DEFICIENT BRIDGES

The Montgomery County Engineer owns and maintains 521 bridges with 499 in fair or better condition. Our office has an aggressive bridge program for repair and replacement with a focus on safety of the traveling public. In 2022, four bridges rated poor or less, were repaired or replaced. Additionally, we have seven scheduled to be repaired or replaced in 2023.

There are 22 bridges in Montgomery County rated poor or less which is ~4% of our total inventory. The average of total bridges in the State of Ohio in poor condition is 6%

1.	5736080	HARRISON TWP	Shoup Mill Rd	Storm sewer	C0074	0.460	1968	2
2.	5765714	TROTWOOD	Free Pike M0032	Dry Run	M0032	1.420	1977	3
3.	5766494	BROOKVILLE	Arlington M0009	Trib to Wolf Creek	M0009	0.750	1930	4
4.	5740193	JEFFERSON TWP	Lutheran Chrch C19	Trib to Little Bear Crk	C0019	3.830	1975	4
5.	5740096	JEFFERSON TWP	Dayton Liberty C42	Opossum Creek	C0042	4.390	1938	4
6.	5734401	GERMAN TWP	Astoria Road C0062	Trib. to Brown's Run	C0062	0.290	1980	4
7.	5736013	HARRISON TWP	Shoup Mill C0074	Ditch	C0074	0.830	1968	4
8.	5770653	RIVERSIDE	Woodman M0074	Lilly Creek	M0074	1.590	1961	4
9.	5746477	MIAMI TWP	Alex Bell C0078	Drainage Ditch	C0078	1.170	1968	4
10.	5770807	RIVERSIDE	Burkhardt Rd M0122	Creek	M0122	0.960	1955	4
11.	5746450	MIAMI TWP	Lamme Road C0175	Holes Creek	C0175	1.370	1957	4
12.	5770602	RIVERSIDE	Airway Road M0194	Lilly Creek	M0194	0.880	1933	4
13.	5740088	JEFFERSON TWP	Diamond Mill C217	Bear Creek	C0217	5.660	1957	4
14.	5770114	HUBER HEIGHTS	Taylorville Road	Wildcat Run	M0218	3.510	1970	4
15.	5734363	GERMAN TWP	Germantown-Middletown	Shawnee Creek	C0526	2.110	1991	4
16.	5740509	JEFFERSON TWP	Hemple Historic TR	Bear Creek	C46HS	2.590	1927	4
17.	5760577	DAYTON	Spur of Grt Miami	Great Miami River	RIPRP	0.130	1924	4
18.	5765439	TROTWOOD	Seybold Rd M0019	Poplar Run	M0019	4.370	1900	4
19.	5740398	JEFFERSON TWP	Huffman Road T0042	Bear Creek	T0042	0.430	1969	4
20.	5740460	JEFFERSON TWP	Huffman Road T0042	Trib to Bear Creek	T0042	1.820	1900	4
21.	5766737	MORaine	Shank Road T0044	Opossum Creek	T0044	4.800	1964	4
22.	5769167	CLAYTON	Wenger Road M020B	Moss Creek	M020B	2.060	1988	4

2022 DEFICIENT BRIDGES (CONT.)

