

Monroe County Engineer
Amy M. Zwick, P.S., P.E.
Annual Report for 2020

January 19, 2021

Per the Ohio Revised Code, Section 5543.02, I am providing an annual report for the review and record of the Monroe County Commissioners. This report will provide a brief summary of the activities during the calendar year on County-owned roads, bridges and other infrastructure.

The County Engineers office is responsible for the maintenance and upkeep of **372 miles** of County Roads, including all drainage, culverts, signs, mowing, guardrail, snow/ice treatment and embankment stability. The Engineers office is also responsible for all bridges on County Roads, and bridges on Township Roads. Currently there are **178 bridges** on the County Engineers inventory.

The County Engineers budget is financed through a gasoline tax and a vehicle registration tax, as well as minor income from permit fees and sales/services. For several years, this financing has been extremely lacking, limiting the Engineers office's ability to maintain roads and bridges at a safe and good condition. Whenever possible, Federal grant money and Ohio Public Works funds have been applied for, to replace those lacking funds. In more recent years, Oil & Gas industry has moved into Monroe County and the Operators have contributed significantly to the upgrade/improvements of the County's infrastructure. In 2020, Oil & Gas activity took a major downturn in Monroe County, which is reflected in the decrease in permits, RUMAs, and road upgrades/improvements.

In a continued effort to generate additional income and close the gap in the Engineers needed funds, the option of enacting additional permissive vehicle registrations has been discussed. The Commissioners held the two required public hearings in April 2019. Based on public input, the motion was made against enacting any additional permissive taxes at this time.

Thanks to the efforts of many individuals across Ohio, in mid-2019 the State approved an increase in the rate and modification of the distribution of revenue from motor fuel excise taxes (fuel tax). This increase took effect July 1, 2019. Projected data for 2020 indicated that each County Engineer would receive an additional \$1 to \$1.5 million. Unfortunately, with the COVID-19 pandemic occurrence, the impact of the fuel tax increase was offset by the sudden decrease in fuel consumption. The long-term effect of COVID-19 on remote-working is anticipated to reduce the fuel consumption permanently, with an estimate of 25% reduction in fuel excise tax income for County Engineers.

While the County Engineers office continues to stretch each dollar as far as we can, by applying for as many grants as we can afford to match, performing work in-house when cost-effective, and working with Oil & Gas operators to cost-share on projects, the funds required to maintain "status-quo" are still not able to be met solely on the Engineers budget alone. Future plans of additional funding sources will need to be seriously considered, in order to prevent our County infrastructures deterioration.

Please continue to the following pages for more detailed information on the projects and activities of the Engineers Office in 2020.

COUNTY PERMIT SUMMARY

Special haul permits

Special Haul Permits Summary	2020	2019	2018	2017
Total Permits Approved	202	526	787	632
Total permit fees received	\$26,225.00	\$61,500.00	\$85,625.00	\$78,803.50
Total fees paid to consultants	\$0.00	\$0.00	\$1,500.00	\$13,931.50
Total bridges analyzed (at least once)	4	6	5	35
Total bridges analyzed that were not passable	0	1	0	13

Right of Way Work permits

Right-of-Way work Permits Summary	2020	2019	2018	2017
Total Permits Approved	155	156	205	171
Total permit fees received by County	\$4,090.00	\$4,549.00	\$6,770.00	\$6,840.00
Total permit fees paid to Townships	\$500.00	\$900.00	\$950.00	\$1,625.00

COUNTY EQUIPMENT PURCHASES/SALES

In late 2019, the Engineers Office worked with USDA to acquire funding for purchase of two new dump trucks with plow attachments. Our application was approved in 2020 by USDA for \$100,000 in grant money, along with \$197,000 loan money (10-year, 2.125% interest).

The Engineers Office was also approved for an Alternate Project through FEMA funds that were approved for the amount of \$89,094.39. The combination of USDA grant, USDA loan, FEMA Alternate Project funds and County Engineer budget funds allowed for the purchase of multiple pieces of both new and used equipment. Below is a summary of equipment purchases made:

Equipment	2020	2019	2018
2019 F250 Regular Cab Truck x 3			\$89,111.49
John Deere 710 Backhoe Loader			\$143,313.52
Wacker BS60-4A Compactor			\$2,682.00
Meyer Snow Plow & Install x 3			\$16,356.00
Tiger Model Ditch Cleaner Attachment			\$9,250.00
2020 f450 Regular Cab Truck x 1		\$40,136.00	
2021 International HV507 Dump w/ Plows x 2	\$296,728.46		
2018 Case 621G Wheel Loader	\$139,750.00		
2016 Gradall D152	\$149,900.00		
2019 Bomag Roller	\$99,900.00		
Total	\$686,278.46	\$40,136.00	\$260,713.01

As vehicles and equipment age through many hours of use, or through the normal course of technology improvements, they reach a point where they become obsolete, unfit or unneeded for public use. At this point the Engineers Office requests approval from the Commissioners to dispose of these pieces of equipment, either through sale or proper method of disposal. In 2020 the following equipment was disposed of:

2005 Hypac C330B Roller	SOLD	\$20,000.00
2004 Case 621D	SOLD	\$10,580.00
Total		\$30,580.00

PERSONNEL ACTIVITY

Retirements

Sheri Morton, Laborer in Bargaining Unit, retired December 31, 2020 with 32 years of service to the County.

Promotions

NONE

New Hires/Transfers

Marcia Wolfe, Tax Map Supervisor, hired August 24, 2020

Resignations/Terminations

Corey Stollar, Tax Map Supervisor, resigned May 22, 2020

Michael Roth, Laborer in the Bargaining Unit, resigned December 18, 2020

Seasonal Hires

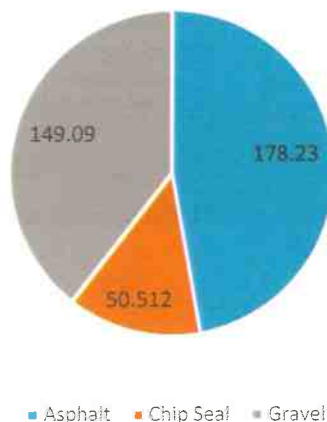
The Engineers Office typically hires seasonal (summer) employees to assist with the increased work load that generally occurs during the summer months. Due to COVID-19 restrictions and budget reduction, no seasonal hires were employed this year.

ROAD & BRIDGE INVENTORY

Monroe County roads are composed of a combination of three types of road surfaces: Asphalt, Chip Seal and Gravel. In recent years, Oil & Gas operators have upgraded several miles of County roads that were previously gravel or chip seal, to asphalt. However, we continue to have nearly 150 miles of gravel County roads, and approximately 50 more that are chip seal.

Road Surface Type	Miles (2017)	% in 2017	Miles (2020)	% in 2020
Asphalt	160.113	43.17%	178.23	47.17%
Chip Seal	54.544	14.71%	50.512	13.37%
Gravel	156.191	42.12%	149.09	39.46%

County Road Surface Summary



All 178 bridges on the County inventory are inspected at least annually and rated on a scale from 1-9, with “9” being new or like new condition. Below is a summary of the rating conditions from 2020 for all bridges on the County inventory.

Bridge Inventory Condition Status	# of Bridges	%
Good (7, 8, 9)	65	36.52%
Fair (5, 6)	92	51.69%
Poor (4 and below)	21	11.80%
Total	178	100.00%

When a bridge is unable to support the required Ohio Legal Loadings, it is load-posted with signage to indicate to the traveling public what weights are allowed to cross the structure safely. Below is a summary of the posted bridges over the past years.

Load Posted Bridges	2020	2019	2018	2017
Number of Posted Bridge	31	32	31	25
% of Total	17.42%	17.98%	17.42%	14.04%

FUNDED PROJECTS SUMMARY – COMPLETED & ACTIVE

Each year the County Engineers office applies for several types of funding, which have specific targets or qualifications that determine what roads, bridges, etc. the funding can be used on. Nearly every funding source also requires local participation through funding match or in-house contributions of labor, equipment and/or materials. Below is a summary of the projects either completed or on-going in 2020, with funding sources associated. Rows that are shaded are complete and the rows with white background are on-going. More details on each project will be included in the following sections of this report.

Project Type	Bridge/Road Number/Description	Percent Funded	Project Total Cost	Funding Year
Bridge	MOE-CR29-0.85	100% Construction, Local - Design costs	\$1,253,847.42	FY2021
Bridge	MOE - CR12-18.00	Engineering - Local responsibility Construction-100% funded	\$331,175.00	2022
Road/Resurfacing	CR2 (6.05 to 9.38)	OPWC Grant \$384,384.78 Loan-Engineer \$278,678.97 Cash/In-Kind \$243,883.23/\$54014.98	\$960,961.96	2020
Drainage/Culvert	CR15, CR105C, CR68, CR88	79%	\$456,583.00	FY2020-2022
Safety Study	Roadside Hazard, Sign compliance - 372 miles	90%	\$24,820.00	FY2021
Sign	Sign Upgrade project-Bridge weight limit signs	80%	\$707.00	FY2020
Sign	Curve Signage - 3 locations	100%	\$1,329.78	FY2020

Infrastructure Improvements, Repairs & Maintenance

The County Engineers Office manages several types of projects each year in order to maintain, and hopefully, improve our County's Roads and Bridge system. Routine project types are:

- (1) Slip Repairs
- (2) Culvert Repairs & Maintenance
- (3) Road Repairs & Maintenance
- (4) Bridge Repairs & Maintenance

These infrastructure improvements, repairs and maintenance are achieved through a number of methods:

- (1) In-house/Force Account – County employees, equipment and material are used
- (2) Contracted out – County awards project(s) to contractor(s). Typically, this is done when the County forces are unable to perform the work needed.
- (3) Outside entity contract – An entity other than the County contracts work to be done on County-owned infrastructure through a Road Use agreement or permit. Typically, this will be done by an Oil & Gas Operator.
- (4) Funded - Funding authority awards project(s) to contractor(s). This can include funds that the County applied for, or funds that were made available due to a weather event, such as flooding.

In the following several sections, summaries and information will be provided on the many different types of projects completed this year.

SLIP REPAIRS

Slip Repairs In-House/Force-Account

Project Type	Route/Location	Force Account Cost
FEMA Slip Removal	CR42	\$4,355.39
FEMA SLIP REPAIR	CR79-4.50	\$4,841.97
Pipe Piling Repair	CR2-4.825	\$41,611.49
Pipe Piling Repair	CR27-3.35	\$3,069.99
Pipe Piling Repair	CR2-5.04	\$22,328.66
Pipe Piling Repair	CR44-3.26	\$62,575.65
Rock Embankment Repair	CR38	\$3,740.72
Slip Leveling	CR27-2.76	\$4,450.17
Slip Removal	CR89	\$3,142.42
Slip Removal	CR4	\$1,106.76
Slip Repair	CR27-3.32	\$25,586.58
Slip Repair	CR60	\$1,709.70
Slip Repair	CR15	\$48,505.62

Total Slip Repair Project force account costs for 2020 = \$227,025.12

Historical Force Account costs: (2019 =\$ 26,357.13) (2018 = \$67,016.52) (2017 =\$139,117.14)



CR15-0.40 County Force
Account Pipe Piling Repair
During Construction (Left)
After Construction (Right)



CR2 County Force Account
Pipe Piling Repair



CR2 - Monroe Drilling Rock Repair

Slip Repairs Contracted

CR2-6.40 Miltonsburg-Calais Road, contracted to Monroe Drilling Operations and was completed in May, 2020. The total project cost was \$20,766.00. The project was funded through the County Engineers budget.

CR2-6.45 Miltonsburg-Calais Road, contracted to Monroe Drilling Operations and was completed in May, 2020. The total project cost was \$22,963.00. The project was funded through the County Engineers budget.

Slip Repairs FHWA Funded

CR81-1.50 Krebs Hill Road – ADR & Associates was awarded the design of an extension of an existing Drilled Shaft H-Piling retaining wall at this location, for a total cost of \$49,900.00. Design was 100% funded through FHWA Disaster/Emergency funds. Construction is slated for 2021, has been awarded to Ohio-West Virginia Excavating and is estimated to cost \$279,324.00. Construction will be funded 80% through FHWA, with the remaining cost being the responsibility of the County.

Slip Repairs OPWC Funded

CR81-0.80 Krebs Hill Road – An extension to an existing Drilled Shaft H-piling retaining wall was awarded to J & J Bridge, with True Inspection Services performing construction inspection, for a total cost of \$226,218.55. Ohio Public Works Emergency funds were used to pay for \$203,596.70, with the remaining \$22,621.85 being paid from the Engineers budget. The road repair work is not yet complete and will be contracted in 2021.



Slip Repairs FEMA/NRCS Funded

2018 FEMA Event

A total of 66 slips qualified and were reported under the FEMA event that occurred late in February, 2018. While a majority of the work for this disaster was completed in 2019, there were two projects that were delayed until 2020, due to accessibility issues. Below are the two projects completed in 2020:

Road No.	Road Name	Location/Log Point	Awarded Contractor	Actual Construction Costs
CR11	Barnes Run Road	0.97mm	Ohio-West Virginia Excavating	\$241,881.00
CR5	Atkinson Run Road	2.95mm	Monroe Drilling Operations LLC	\$14,280.75

2019 FEMA Event

A total of 206 slips qualified and were reported under the FEMA event that occurred in February, 2019. Of the total, 130 locations have been validated by FEMA to-date. NRCS has claimed authority over and approved repairs for 24 locations. The remaining 52 locations are in the appeal process with FEMA, because they were not approved with the initial round of assessment.

Several of the FEMA-approved projects were completed in 2020, with many others having the design work complete and awaiting FEMA approval of construction costs. Below is a summary of all approved FEMA projects, to-date, with the highlighted projects being 100% completed in 2020:

Road No.	Location/Log Point	Type of Repair	Total Costs (to-date)
CR10	0.3	Rock Embankment	\$35,062.70
CR10	1.50	H-Pile/Drilled Shaft	\$87,465.72
CR10	3.93	H-Pile/Drilled Shaft	\$63,695.00
CR10	5.40	H-Pile/Drilled Shaft	\$34,807.85
CR10	5.5	H-Pile/Drilled Shaft	\$87,491.90
CR10	5.58	H-Pile/Drilled Shaft	\$36,506.25
CR10	7.74	H-Pile/Drilled Shaft	\$83,131.00
CR10	8.37	H-Pile/Drilled Shaft	\$69,951.00
CR11	0.19	H-Pile Drilled Shaft	\$67,500.00
CR11	1.70	H-Pile/Drilled Shaft	\$502,361.57
CR11	1.87	H-Pile Drilled Shaft	\$107,500.00
CR138	0.08	H-Pile/Drilled Shaft	\$167,822.21
CR14	1.34	Pipe Piling	\$50,724.07
CR15	0.40	Asphalt, Base & culvert Only	\$84,475.80
CR15	3.06	Rock Embankment	\$17,950.70
CR15	7.92	H-Piling/Drilled Shaft	\$29,195.00
CR16B	1.94	H-Pile/Drilled Shaft	\$85,032.50
CR16B	3.74	H-Pile/Drilled Shaft	\$138,491.72
CR22	1.20	H-Pile/Drilled Shaft	\$487,450.13
CR25	1.10	Rock Embankment	\$8,827.68
CR25	2.45	Asphalt surface and base only	\$0.00
CR25	2.80	H-Pile/Drilled Shaft	\$60,440.00

CR26	3.93	Pipe Piling	\$26,500.00
CR26	4.38	Pipe Piling	\$21,500.00
CR29	0.57	H-Pile/Drilled Shaft	\$53,790.66
CR29	1.86	H-Pile/Drilled Shaft	\$57,800.00
CR29	4.05	H-Pile/Drilled Shaft	\$42,155.75
CR29	6.46	H-Piling/Drilled Shaft	\$21,420.05
CR31	6.16	H-Pile/Drilled Shaft	\$54,646.00
CR31	6.68	Pipe Piling	\$18,500.00
CR31	7.00	H-Pile Drilled Shaft	\$194,568.00
CR33	2.38	Rock Embankment	\$62,140.78
CR35	0.17	Rock Embankment	\$25,266.36
CR35	1.00	H-Piling/Drilled Shaft	\$24,119.50
CR37	1.05	H-Pile/Drilled Shaft	\$55,670.00
CR38	5.45	H-Pile/Drilled Shaft	\$64,924.06
CR39	3.70	ASPHALT SURFACE	\$29,442.00
CR39	3.8	ASPHALT SURFACE	\$26,630.00
CR4	0.15	Washout and ditch repair	\$47,821.00
CR42	5.36	Rock Embankment	\$103,948.50
CR43	0.31	H-Pile Drilled Shaft	\$88,500.00
CR43	0.73	H-Piling/Drilled Shaft	\$72,900.00
CR43	3.96	H-Piling/Drilled Shaft	\$86,200.00
CR43	5.00	Pipe Piling	\$39,500.00
CR43	5.84	Pipe Piling	\$106,979.50
CR43	7.87	H-Pile/Drilled Shaft	\$91,800.00
CR43	7.40 (additional)	H-Pile Drilled Shaft	\$331,996.45
CR43	7.50 (additional)	H-Pile Drilled Shaft	\$471,194.91
CR45	0.74	H-Pile Drilled Shaft	\$350,004.00
CR45	1.92	H-Pile Drilled Shaft	\$328,574.00
CR5	0.69	Rock Embankment	\$11,274.75
CR5	0.89	Rock Embankment	\$6,384.00
CR53	0.54	H-Pile/Drilled Shaft	\$208,160.50
CR53	5.33	Asphalt & base only	\$44,671.40
CR53	5.44	Asphalt & base only	\$43,739.00
CR64	0.27	H-Pile Drilled Shaft	\$47,018.00
CR64	0.57	H-Pile/Drilled Shaft	\$48,072.05
CR64	1.95	H-Pile/Drilled Shaft	\$147,460.95
CR64A	1.97	H-Pile/Drilled Shaft	\$137,845.05
CR64A	2.22	H-Piling/Drilled Shaft	\$153,382.49
CR68	0.98	Rock Embankment	\$9,823.00
CR77	1.75	H-Piling/Drilled Shaft	\$25,451.47
CR77	5.30	Rock Embankment/Culvert replacement	\$18,104.10
CR79	4.50	H-Pile/Drilled Shaft	\$273,400.00
CR79	4.65	Road & Culvert repair ONLY	\$14,000.00
CR85	0.59	H-Pile/Drilled Shaft	\$73,500.00
CR88	0.70	Rock Embankment	\$40,883.68
CR89	3.41	Pipe Piling	\$39,000.00

CR92	0.12	H-Pile/Drilled Shaft	\$111,101.00
CR92	0.18	H-Pile/Drilled Shaft	\$101,261.00
CR92	3.50	H-Pile/Drilled Shaft	\$48,275.00
CR96	0.43	H-Piling/Drilled Shaft	\$29,750.00
CR96	0.60	H-Piling/Drilled Shaft	\$72,237.51
CR96	1.15	H-Piling/Drilled Shaft	\$29,168.84
CR96	1.17	H-Piling/Drilled Shaft	\$35,051.94
CR96	2.97	H-Pile Drilled Shaft	\$67,300.00

TOTAL COST ESTIMATE to-date

\$7,351,676.30

All FEMA qualified projects are funded 75% by FEMA and 25% by the State of Ohio, EMA. No local match is required.

NRCS projects were not approved to start design until the end of December 2020, so no work has been completed. NRCS projects will be 90% funded through NRCS funds, and the remaining 10% will be funded through the State EMA match. The NRCS projects are summarized in the table below and are anticipated to be completed in 2021.

Road No.	Road Name	Location/ Log Point	Type of Repair	Cost Estimate
CR11	Barnes Run Road	0.20	H-Pile Drilled Shaft	\$77,875.00
CR11	Barnes Run Road	0.56	Gabion Baskets	\$67,650.00
CR11	Barnes Run Road	0.76	H-Pile Drilled Shaft	\$78,987.50
CR11	Barnes Run Road	0.77	H-Pile Drilled Shaft	\$78,987.50
CR11	Dogskin Road	5.65	Rock Embankment	\$28,600.00
CR15	Witten Creek Road	5.14	Rock Embankment	\$50,600.00
CR15	Witten Creek Road	5.50	Rock Embankment	\$675,287.50
CR15	Witten Creek Road	5.53	H-Piling/Drilled Shaft	
CR15	Witten Creek Road	5.55	H-Piling/Drilled Shaft	
CR15	Witten Creek Road	5.58	H-Piling/Drilled Shaft	
CR19	Brownsville County line	0.10	Rock Embankment	\$12,100.00
CR22	Bares Run Road	2.08	Rock Embankment	\$50,600.00
CR22	Bares Run Road	2.14	Rock Embankment	\$48,950.00
CR29	Sunfish Creek Road	5.62	H-Pile/Drilled Shaft	\$709,775.00
CR29	Sunfish Creek Road	5.64	H-Pile/Drilled Shaft	
CR29	Sunfish Creek Road	5.69	H-Pile/Drilled Shaft	
CR29	Sunfish Creek Road	5.74	H-Pile/Drilled Shaft	
CR29	Sunfish Creek Road	5.77	H-Pile/Drilled Shaft	
CR45	Moose Ridge Road	4.86	Rock Embankment	\$47,300.00
CR45	Moose Ridge Road	4.99	Rock Embankment	
CR72	Wolf Pen Road	2.10	Rock Embankment	\$29,150.00
CR72	Wolf Pen Road	2.15	Rock Embankment	
CR72	Wolf Pen Road	2.20	Rock Embankment	
TR471	Eddy Ridge Road	1.90	Embankment repair & debris removal	\$36,850.00
			TOTAL	\$1,992,712.50

CULVERT REPAIRS AND MAINTENANCE

Culvert Replacement In-House/Force-Account

Project Type	Route/Location	Force Account Cost
Catch Basin	CR37-5.29	\$5,408.99
Culvert Replacement	CR1	\$5,086.10
Culvert Replacement	CR2-4.87	\$3,024.17
Culvert Replacement	CR11-1.456	\$5,779.64
Culvert Replacement	CR11-2.606	\$17,414.22
Culvert Replacement	CR27-2.96-7.22	\$35,250.53
Culvert Replacement	CR31-4.22,5.51,6.6.97&7.35	\$11,472.45
Culvert Replacement	CR37	\$61,596.36
Culvert Replacement	CR19-1.30	\$6,517.54
Culvert Replacement	CR25	\$11,975.43
Culvert Replacement	CR44	\$79,962.41
Culvert Replacement	CR105B-0.24	\$2,781.25
Culvert Replacement	CR77-2.92	\$3,183.33
Culvert Replacement	CR5	\$33,521.82
Culvert Replacement	CR27-3.07	\$3,319.04
Culvert Replacement OPWC	CR2	\$55,172.37
Culvert Replacements	CR59	\$10,303.01
Culvert Replacements	CR2-1.19 & 1.20	\$4,889.44
OPWC Culvert Replacements	CR2	\$54,014.98

Total Culvert Project force account costs for 2020 = \$410,673.08

Historical Force Account costs: (2019=\$246,008.63) (2018 = \$102,593.82) (2017 = \$518,126.46)



County Force Account Drainage
Improvements – CR15

Culvert Inventory Condition Status	# of Culverts	%
Good (A)	1223	37.20%
Fair/Functional (B)	808	24.57%
Poor/Failed(C, D)	1257	38.23%
Total	3288	100.00%

ROADWAY REPAIRS AND MAINTENANCE

Chip Seal In-House/Force-Account

Project Type	Route/Location	Force Account Cost
Chip Seal	CR44	\$78,637.31
Chip Seal	CR18	\$91,567.01
Dust Strip	CR96	\$22,043.29
Reshaping/ Dust Strips	CR106	\$29,065.39

Total Chip Seal Project force account costs for 2020 = \$221,313.00

Historical Force Account Costs: (2019 = \$9,726.54) (2018 = \$32,027.65) (2017 = \$79,268.10)

Chip Seal Contracted/Funded – NONE in 2020

Emergency Services

Snow & Ice Removal - County forces provide snow & ice removal for all 372 miles of County Roads during the winter months. In 2020, a total of \$201,917.94 was spent on this service.

Labor = \$60,085.19

Materials = \$77,404.01

Equipment Usage = \$64,428.74

Debris & Tree Removal – County forces respond AFTER HOURS to trees and debris that fall into the roadway, causing a hazard for the traveling public. In 2020, over 247 man-hours were spent for a total of **\$9,399.55** in OVERTIME Labor costs for this service. Equipment and fuel costs are not included in the total. Debris & Tree removal during normal business hours is not included in the total.

All Emergency service costs are paid from by the County Engineers Budget.

Roadside Mowing

County-Wide Road side mowing - County forces provide roadside mowing for all 372 miles of County Roads throughout the year, with a goal to make at least 2 passes on each road annually and spend as much time as feasible to make additional passes to increase the width we can clear along the roads. In 2020, a total of **\$493,015.50** was spent on this service.

Labor = \$187,283.90 (5776.50 man-hours)

Equipment Usage = \$305,731.60

Miscellaneous Road Improvements In-House/Force-Account

Project Type	Route/Location	Force Account Cost
2020 Fall Cold Mix		\$36,642.55
2020 Mowing	ALL County Roads	\$493,015.50
2020 Snow and Ice Removal	ALL County Roads	\$201,917.94
Asphalt Repair	CR18	\$42,104.52
Grader Patching	CR73	\$34,813.05
Shoulder Back Up	CR25 & CR37	\$43,979.03

Total Miscellaneous Road Improvement Project force account costs for 2020 = \$852,472.59

Historical Force Account costs: (2019 = \$567,101.21) (2018 = \$110,527.00) (2017=\$510,840.47)

Miscellaneous Road Improvements Contracted

County Road 29 Asphalt Mill & Fill Repairs – K and F Excavating was contracted to perform Asphalt Mill & Fill patch repairs on 18 locations of County Road 29, for a total cost of \$47,452.50. This was entirely funded through the Engineers Budget.

Miscellaneous Road Improvements Funded

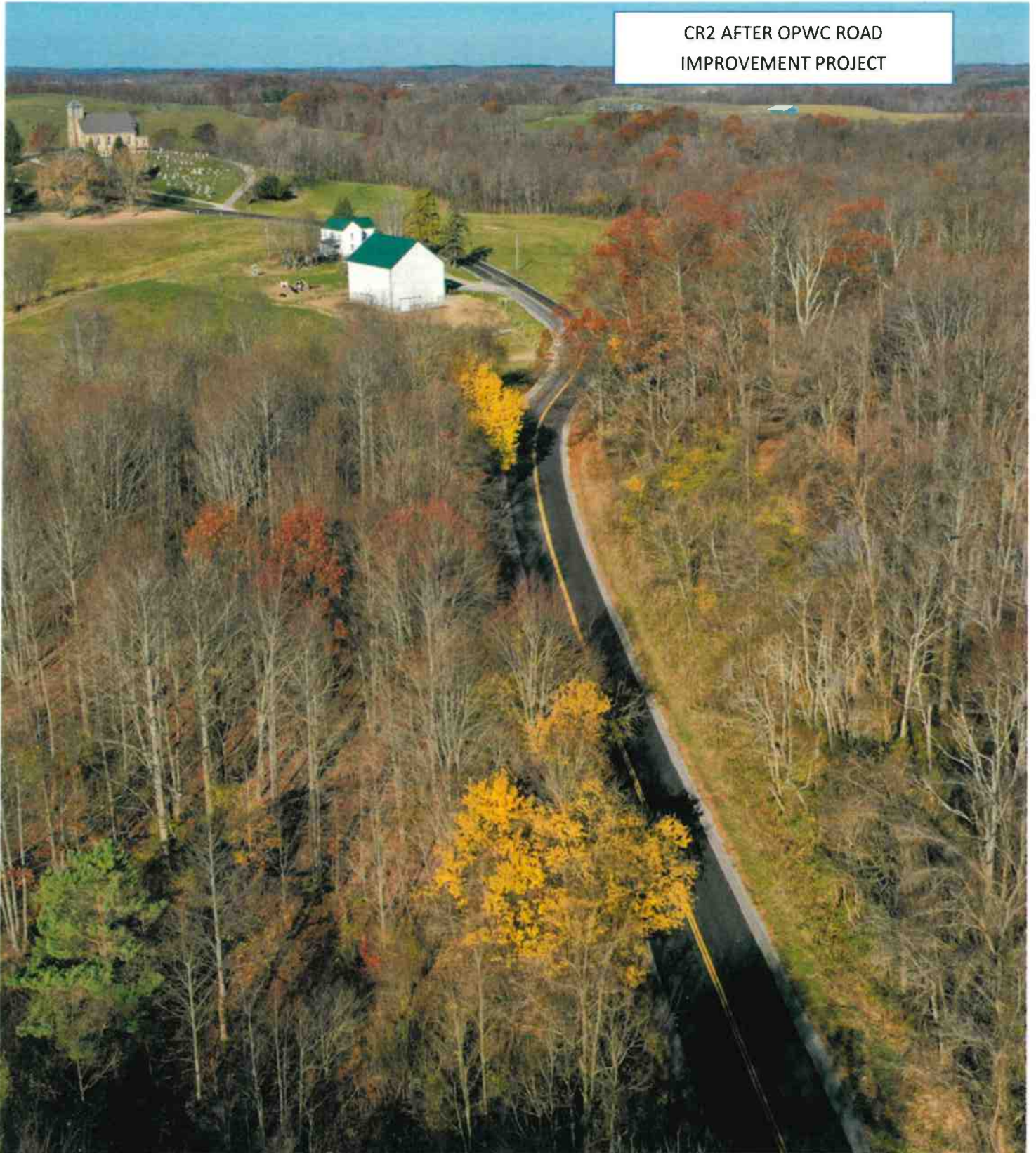
Ohio Public Works Commission (OPWC) Project – Cement Stabilization with an asphalt overlay, culvert replacement and drainage improvements for 3.33 miles of County Road 2.

The cement stabilization & asphalt overlay portion of the project was awarded to Shelly & Sands Inc.. Their portion of the project work totaled \$906,946.98. The County replaced culverts and performed drainage improvements, at a cost of \$54,014.98, for a final project cost of \$960,961.96. OPWC Grant covered \$384,384.78 of the project costs. OPWC Loan for \$278,678.97 was taken by the Engineers Budget. The remaining project costs 31% (\$297,898.21) was paid from the Engineers budget, with \$54,014.98 of that being in-kind county forces work.



CR2 BEFORE OPWC ROAD
IMPROVEMENT PROJECT

CR2 AFTER OPWC ROAD
IMPROVEMENT PROJECT



BRIDGE IMPROVEMENTS AND REPAIRS

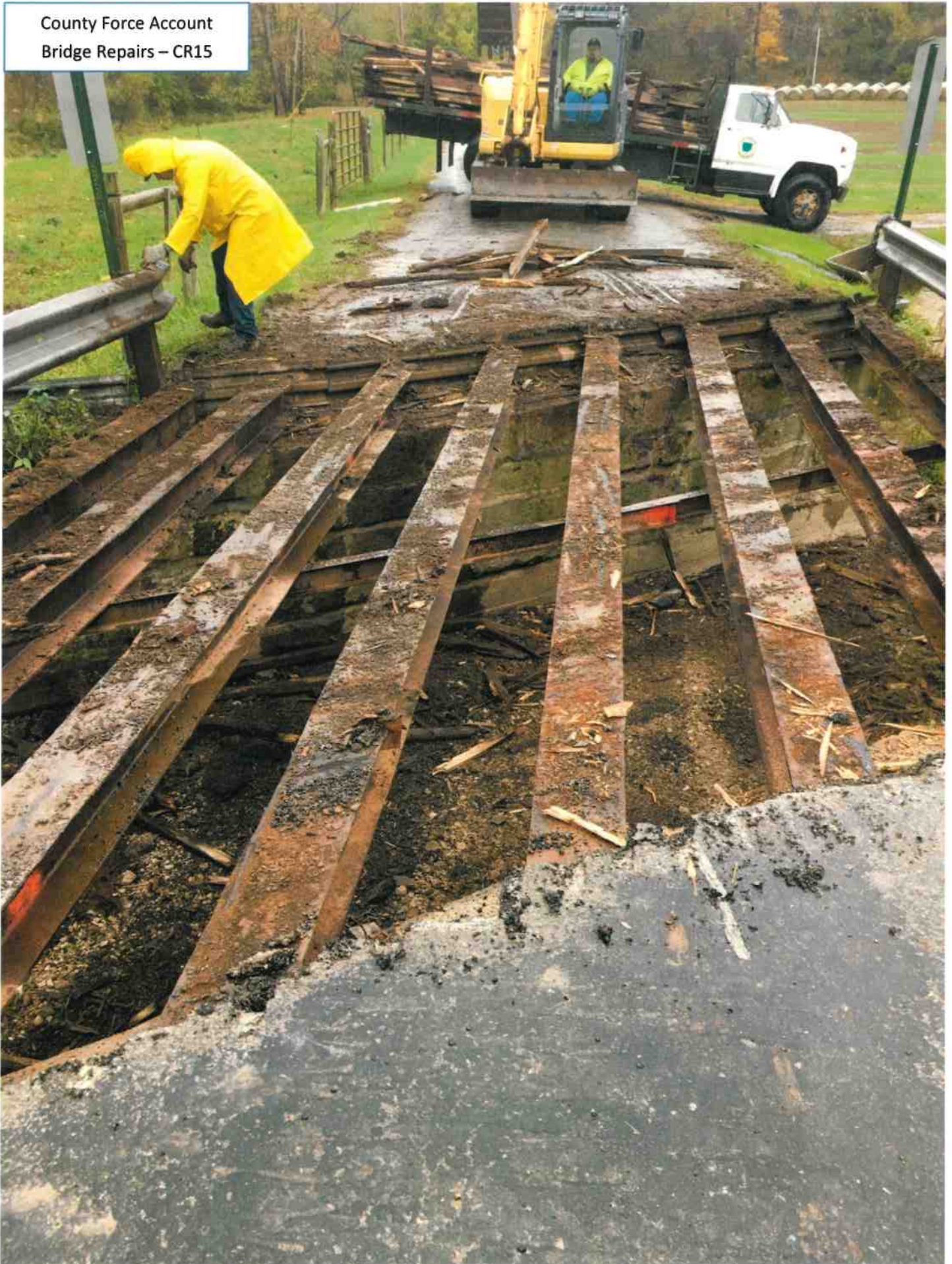
In-House/Force Account

Project Type	Route/Location	Force Account Cost
Bridge Repair	Benton TWP 526	\$4,292.58
Bridge Repair	Benton TWP2705	\$2,162.89
Bridge Repair	CR9	\$561.48
Bridge Repair	CR29-8.79&9.02	\$5,250.88
Bridge Repair	CR44-1.61	\$1,371.89
Bridge Repair	CR88-0.19	\$2,150.41
Bridge Repair	Franklin TWP 834	\$2,253.13
Bridge Repair	Franklin TWP1041	\$3,066.78
Bridge Repair	Green TWP 472	\$2,764.12
Bridge Repair	CR10A	\$1,771.14
Bridge Repair	CR16-0.02	\$3,556.71
Bridge Repair	CR29-8.54	\$2,067.31
Bridge Repair	Jackson 3.04	\$6,409.57
Bridge Repair	Seneca 55	\$651.76
Bridge Repair	Lee Twp. 476	\$1,648.12
Bridge Repair	Center Twp. 350	\$946.46
Bridge Repair	CR15-3.32	\$17,837.40

Total Bridge Project force account costs for 2020 = \$58,762.63

Historical force account costs: (2019 = \$58,967.16) (2018 = \$77,459.20) (2017 = \$102,268.09)

County Force Account
Bridge Repairs – CR15



Contracted/Funded

CR29-0.85 Bridge replacement project design was completed in 2020, by HammonTree & Associates, with a total design cost of \$35,000.00. The design costs for the project are 100% funded through the Engineers budget, while the construction will be 100% funded through FHWA/Ohio Bridge Partnership Program funds. Estimated construction cost is \$1,214,000.00.



CR12-18.00 Bridge replacement project design was completed in 2020, by Stahl Sheaffer, with a total design cost of \$28,675.00. The design costs for the project are 100% funded through the Engineers budget, while the construction will be 100% funded through FHWA/Ohio Bridge Partnership Program funds. Estimated cost for construction is \$280,000.00.



CR12-20.15 Bridge replacement project design was completed in 2020, by Stahl Sheaffer, with a total design cost of \$22,025.00. The replacement of this bridge is planned for 2021, with an estimated construction cost of \$400,000.00 This project does not have any approved funding sources and will have to be entirely at the burden of the County to finance.



OIL & GAS ACTIVITY

There are currently 19 different Oil & Gas Companies with at least one active RUMA in Monroe County. These 19 companies hold a total of 103 RUMAs. Below is a summary of RUMA activity:

O & G RUMA Activity Summary	2020	2019	2018	2017
New RUMAs	7	13	30	30
Renewed RUMAs	42	46	19	41
Terminated RUMAs	11	19	35	19
Total Number of Operators with at least one RUMA	19	23	23	19



As part of their activities, these Oil & gas Companies often need to improve the County's current infrastructure. The following table is a summary of the Infrastructure Improvements made by Oil & Gas Companies in 2020. Maintenance items such as dust control and temporary patching are not included in this list.

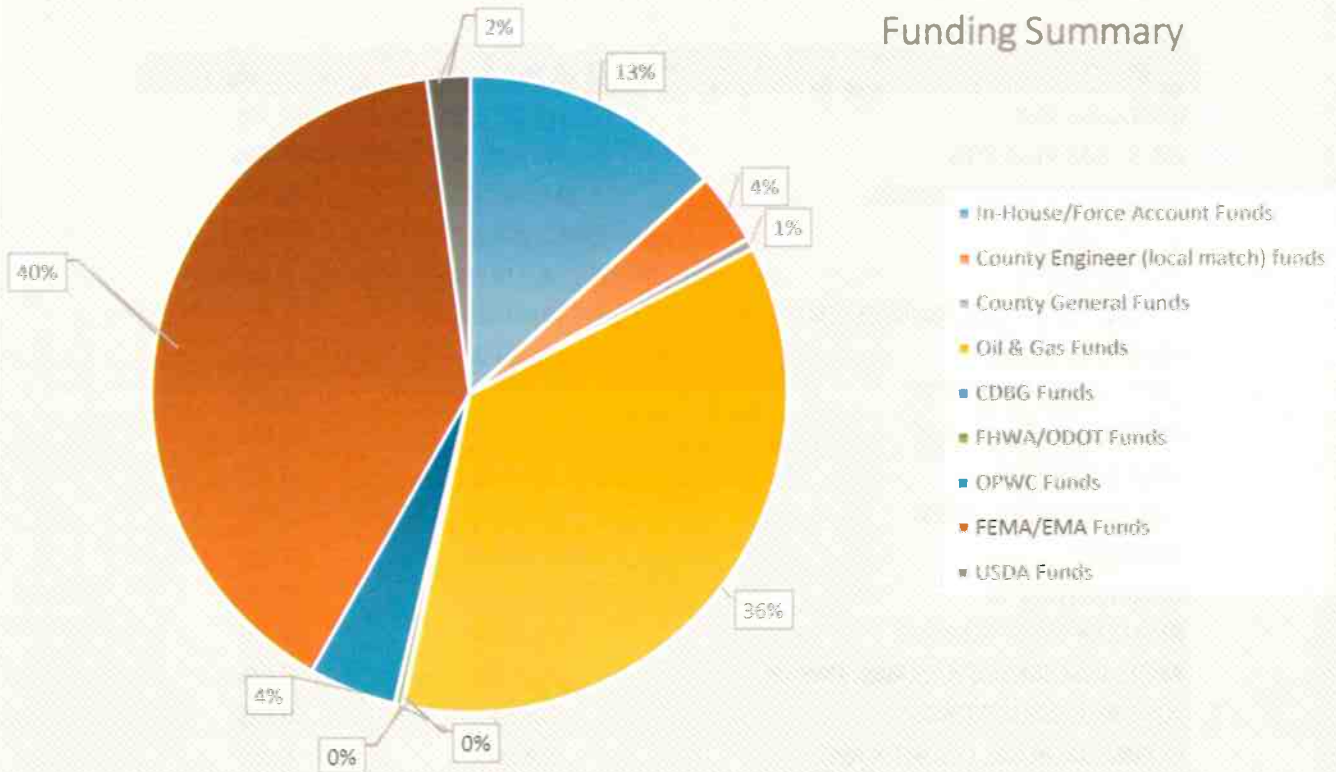
Company	Road #/Name	Improvement/Work Done	Total Cost of Improvements
Montage	CR10, Benwood Rad	Asphalt Widening	\$247,600.00
Montage	CR96, Baptist Ridge Road	Chip and Seal/ Slip Repair	\$77,410.50
Montage	CR43, Long Ridge Road	Asphalt Repairs & Chip and Seal	\$51,760.00
Montage	CR84, John Lengacher Road	Asphalt Paving/FDR/ Ditching & Retaining Walls	\$554,075.66
Montage	CR10, Benwood Road	Asphalt Overlay	\$121,694.04
Equitrans	CR64A, Cochran Hill Road	Asphalt Mill & Fill Repairs	\$5,850.00
Equitrans	CR29, Sunfish Creek Road	Asphalt Repairs	\$10,725.00
Eureka	CR5, Atkinson Run Road	Culvert Replacement	\$35,523.00
Eureka	CR64A, Cochran Hill Road	Chip Seal Repairs	\$5,750.00
Eureka	CR29, Sunfish Creek Road	Chip Seal Repairs	\$4,600.00
Eureka	CR96, Baptist Ridge Road	Chip Seal Repairs	\$6,909.13
Eureka	CR101, Roy Watson	Chip Seal Repairs	\$21,754.75
Eureka	CR9A, Six Points Road	Asphalt repairs/ Chip and Seal	\$92,090.00
Eureka	CR38, Headley Ridge Road	Chip Seal Repairs	\$8,114.00
Eureka	CR5, Atkinson Run Road	Chip Seal Repairs	\$13,450.40
Equinor	CR4, Sykes Ridge Road	Asphalt base Repairs/ Mill & Fill Repairs	\$103,000.00
Equinor	CR4, Sykes Ridge Road	Asphalt Repairs	\$23,000.00
Equinor/Equitrans/Montage	CR64, Cain Ridge Road	Asphalt & Chip Seal Repairs	\$57,730.28
Equinor	CR43, Long Ridge Road	Asphalt Repairs	\$150,466.32
Markest/Ohio Oil Gathering	CR1, Kings Highway	Base Repair	\$43,700.00
Markest/Ohio Oil Gathering	CR27, Moore Ridge Road	Shoulder Repairs and Base Repairs	\$62,807.50
Markest/Ohio Oil Gathering	CR36, Ozark Eddy-Bridge Road	Base Repair	\$7,675.00
Enbridge/Columbia Leach Xpress/ EPC/Rover	CR44, Swazey Road	Asphalt Paving	\$170,592.55
Rover	CR27, Moore Ridge Road	Asphalt Paving	\$680,030.00
CNX/Enbridge/Rover/Equitrans/Summit/Eureka/Dominion /ORS/Columbia Leach	CR37, Boltz Hill Road & CR25, German Ridge Road	Shoulder back up & Asphalt Repairs	\$1,934,790.25
Gulfport	CR23, Pugh Ridge Road	Asphalt Overlay	\$155,000.00
Antero Resources	CR2, Miltonsburg-Calais Rd	Asphalt Repairs	\$120,000.00
Antero Resources	CR39, Harper Ridge Road	Asphalt Repairs	\$29,822.62
		TOTAL	\$4,795,921.00

COUNTY ENGINEER FUNDING, REVENUE & EXPENDITURES SUMMARY

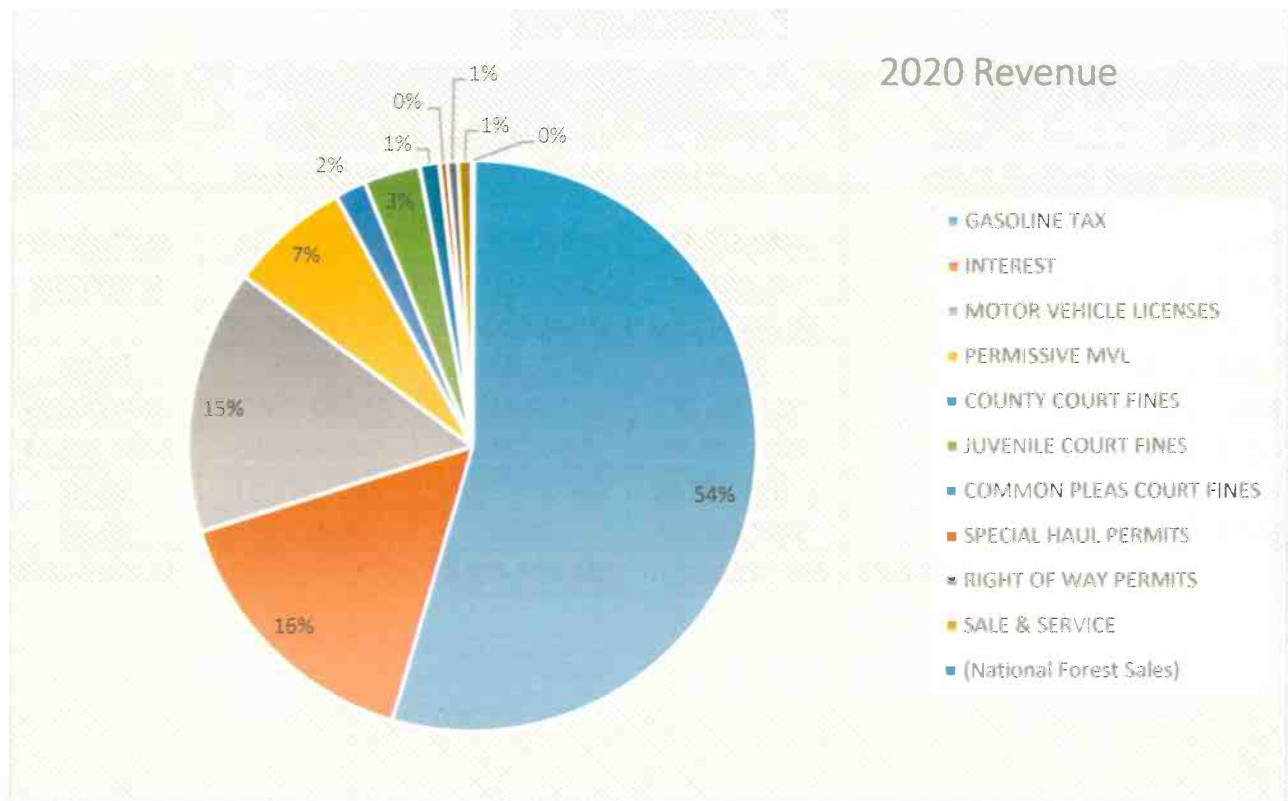
Projects Summary

Road & Bridge Funding Summary	2020	2019	2018	2017
In-House/Force Account Funds	\$1,772,341.29	\$1,670,724.37	\$968,357.29	\$1,194,571.83
County Engineer (local match) funds	\$489,568.83	\$459,055.10	\$573,854.21	\$177,170.31
County General Funds	\$75,000.00	\$102,690.00	\$410,773.62	\$75,000.00
Oil & Gas Funds	\$4,795,921.00	\$10,401,034.55	\$9,610,872.72	
CDBG Funds	\$0.00	\$255,750.00	\$0.00	\$0.00
FHWA/ODOT Funds	\$51,795.38	\$1,778,428.08	\$1,089,558.59	\$449,069.09
OPWC Funds	\$603,596.70	\$652,275.00	\$400,000.00	\$374,772.14
FEMA/EMA Funds	\$5,290,496.00	\$4,734,455.77	\$567,976.81	\$0.00
USDA Funds	\$297,000.00	\$0.00	\$141,000.00	\$0.00
TOTALS	\$13,375,719.20	\$20,054,412.87	\$13,762,393.24	\$2,270,583.37

2020 Project Funding Summary

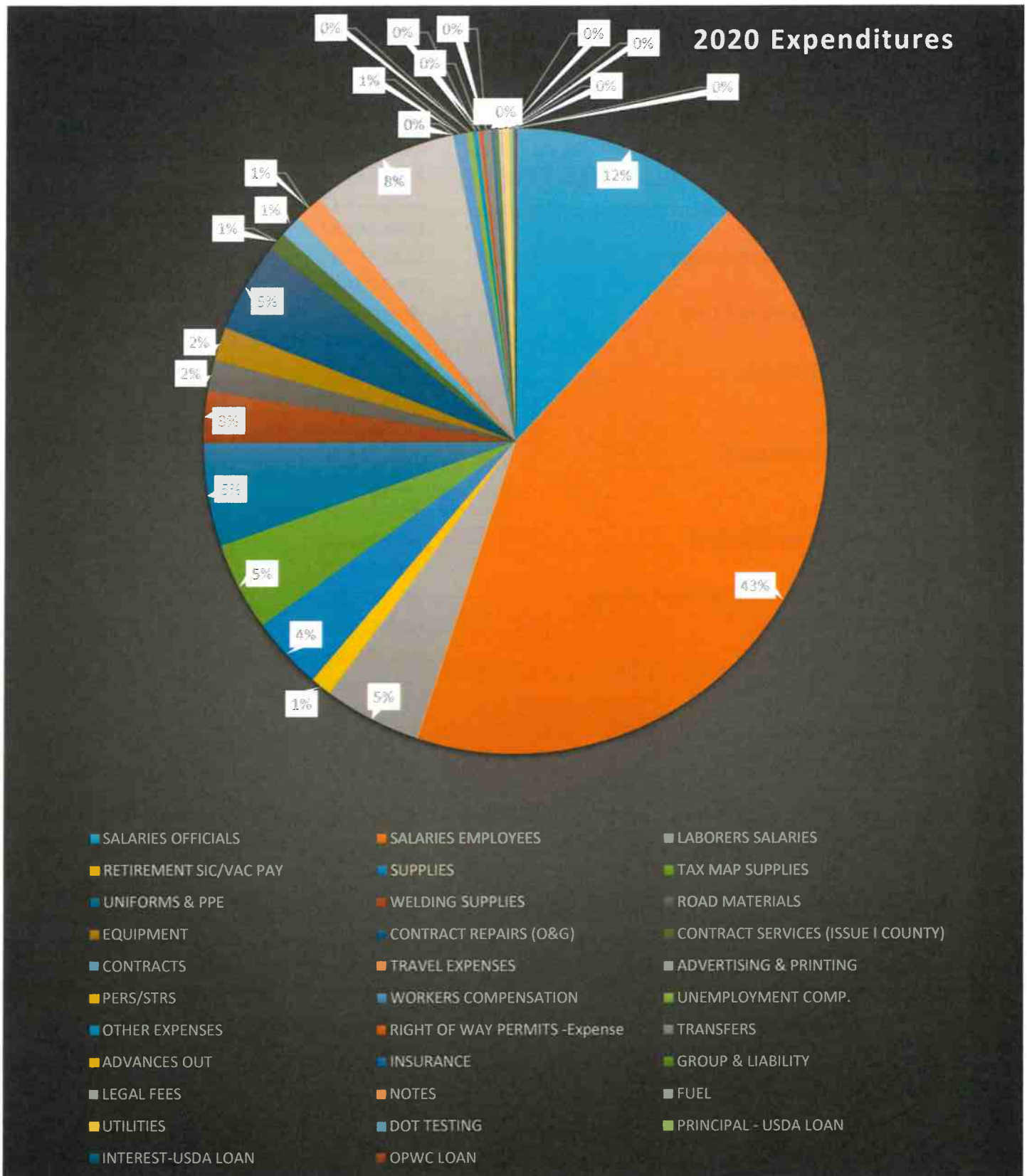


County Engineer Budget – 2020 Revenue Summary



DESCRIPTION	2020 EOY FINAL	% of TOTAL
GASOLINE TAX	\$3,614,207.26	54.1%
OIL & GAS RECEIPTS	\$1,037,111.00	15.5%
MOTOR VEHICLE LICENSES	\$994,762.64	14.9%
ADVANCES IN TRANSFERS IN	\$452,182.07	6.8%
REFUND &/OR REIMBURSEMENT	\$212,040.33	3.2%
PERMISSIVE MVL	\$73,769.23	1.1%
SPECIAL HAUL PERMITS	\$28,400.00	0.4%
(National Forest Sales)	\$38,777.91	0.6%
SALE & SERVICE	\$53,026.56	0.8%
COUNTY COURT FINES	\$8,938.27	0.1%
INTEREST	\$13,142.44	0.2%
OTHER RECEIPTS	\$27,241.38	0.4%
RIGHT OF WAY PERMITS	\$4,320.00	0.1%
MISC. INSURANCE & COBRA PAY-IN	\$667.51	0.0%
JUVENILE COURT FINES	\$6.24	0.0%
COMMON PLEAS COURT FINES	\$0.00	0.0%
TOTAL	\$6,677,411.17	100%

County Engineer Budget – 2020 Expenditures Summary



DESCRIPTION	2020 EOY FINAL	% of TOTAL
LABORERS SALARIES	\$774,998.29	11.9%
CONTRACT REPAIRS (O&G)	\$2,809,478.61	43.1%
ROAD MATERIALS	\$327,597.37	5.0%
ADVANCES OUT	\$71,369.85	1.1%
CONTRACT SERVICES (ISSUE I COUNTY)	\$247,311.13	3.8%
INSURANCE	\$299,181.12	4.6%
SALARIES EMPLOYEES	\$348,238.33	5.3%
PERS/STRS	\$173,509.77	2.7%
FUEL	\$104,391.64	1.6%
VEHICLE MAINT.(IN HOUSE)	\$111,697.11	1.7%
CONTRACTS	\$303,091.33	4.7%
VEHICLE (OUTSIDE REPAIRS)	\$61,854.42	0.9%
CONTRACTS	\$74,100.50	1.1%
SALARIES OFFICIALS	\$94,103.00	1.4%
EQUIPMENT	\$493,241.54	7.6%
TRANSFERS	\$0.00	0.0%
OFFICE MAINTENANCE	\$43,893.27	0.7%
UTILITIES	\$23,817.20	0.4%
MEDICARE TAX	\$16,932.74	0.3%
WORKERS COMPENSATION	\$12,799.39	0.2%
OPWC LOAN	\$28,217.96	0.4%
BUILDING & GROUNDS MAINTENANCE	\$1,502.00	0.0%
OTHER EXPENSES	\$13,714.05	0.2%
GROUP & LIABILITY	\$12,082.00	0.2%
INTEREST - USDA LOAN	\$4,154.00	0.1%
SUPPLIES	\$7,000.28	0.1%
UNIFORMS & PPE	\$7,192.30	0.1%
BRIDGE MATERIALS	\$17,709.79	0.3%
LEGAL FEES	\$3,574.10	0.1%
PRINCIPAL-USDA LOAN	\$10,200.00	0.2%
ADVERTISING & PRINTING	\$4,921.54	0.1%
WELDING SUPPLIES	\$6,510.03	0.1%
DOT TESTING	\$2,424.87	0.0%
DUES	\$269.00	0.0%
RIGHT OF WAY PERMITS -Expense	\$0.00	0.0%
TAX MAP SUPPLIES	\$1,418.92	0.0%
TRAVEL EXPENSES	\$0.00	0.0%
SIGNS	\$2,036.78	0.0%
RETIREMENT SIC/VAC PAY	\$0.00	0.0%
PERSONEL EXPENDITURES	\$1,726,954.94	26.5%
NON-PERSONEL EXPENDITURES	\$4,787,579.29	73.5%
TOTAL	\$6,514,534.23	100.0%

FUNDING & THE FUTURE



FUNDING SUMMARY SHEET (2017-PRESENT)

Project Type	GRANTS RECEIVED	LOANS RECEIVED	LOCAL MATCH	TOTAL FUNDED PROJECTS COSTS
Bridge	\$4,609,570.20	\$0.00	\$653,460.22	\$5,263,030.42
Bridge Load Ratings	\$8,948.25	\$0.00	\$8,948.25	\$17,896.50
Road	\$3,608,170.75	\$637,153.97	\$1,305,811.33	\$5,551,136.05
Drainage	\$366,823.00	\$0.00	\$89,760.00	\$456,583.00
Safety	\$129,181.95	\$0.00	\$14,353.55	\$143,535.50
Sign	\$40,066.04	\$0.00	\$2,049.42	\$42,115.46
Equipment	\$241,405.46	\$314,000.00	\$20,000.00	\$575,405.46
Guardrail	\$300,000.00	\$0.00	\$0.00	\$300,000.00
Slip Repair/Flood Damage	\$22,377,529.80	\$0.00	\$327,861.64	\$22,705,391.44
TOTALS	\$31,681,695.45	\$951,153.97	\$2,422,244.41	\$35,055,093.83
	90%	3%	7%	100%

The County Engineers office takes pride in being able to “stretch a dollar” and find creative ways to accomplish the large amount of work needed, with a less-than-adequate budget. The table above shows just how well we have been able to do that in the past 4 years, with 90% of all funded projects being covered with money OTHER than County funds. You can also see how important it is to be able to supply Local Match money. A mere 10% of match money/loans has afforded the County over \$35,000,000.00 in road, bridge and infrastructure improvements.

With the ever-increase in material and equipment costs, projects will continue to grow in price. Despite the diligent efforts of our crews and the large amount of funding we are able to secure, the County Engineers office still continues to be significantly underfunded. As you can see from the charts below, in order to simply MAINTAIN the infrastructure currently in place and bring the bridges up to Legal Load standard capacity, **the annual Engineers Budget requires an additional \$3,186,960.00.**

Road Surfacing Costs per year							
Road Surface Type	Miles (2017)	% in 2017	Miles (2020)	% in 2020	Cost/Mile to Replace or Maintain	Frequency of Replacement/Maintenance	Average Cost/Year
Asphalt	160.113	43.17%	178.23	47.17%	\$150,000.00	12 years	\$2,227,875.00
Chip Seal	54.544	14.71%	50.512	13.37%	\$30,000.00	6 years	\$252,560.00
Gravel	156.191	42.12%	149.09	39.46%	\$2,500.00	1 year	\$372,725.00
Total			377.832			Subtotal	\$2,853,160.00
Other Road Expenses per year							
Snow & Ice Control (materials only)							\$125,000.00
Culverts (materials only)							\$30,000.00
Guardrail (materials only)							\$5,000.00
Slip Repairs (materials only & contracted work)							\$100,000.00
						Subtotal	\$260,000.00
						TOTAL	\$3,113,160.00
Current Road Materials Budget							\$1,300,000.00
Required Road Materials Budget							\$3,113,160.00
Additional Amount Requested							\$1,813,160.00

BRIDGE FUNDING NEEDS

Bridge Information			Average Annual Bridge Replacement/Rehab Budget	\$ 600,000.00
Total Bridges (All structures with spans >= 10')	178 Each			
Total Bridges < 20 feet Span	65 Each			
Total Bridges >= 20 feet Span (Non Major Bridges)	113 Each			
Posted Bridges (< 100%)	35 Each			
General Appraisal <= 4 (Non Major)	22 Each			
One Lane Bridges (< 16 feet)	49 Each			
Closed Bridges	2 Each			
Average # Bridge Replacements per Year (Non-Major)	1 Each	2019-2, 2018-1, 2017-0		
Average # Bridges Repaired per Year (Non-Major)	1 Each	2019-3, 2018-0, 2017-0		
# Non-Major Bridges Needing Major Rehab / Replacement in Next 5 Years	31 Each	Estimated Cost	\$ 12,400,000.00	Estimated Funding Shortfall Each Year
				\$ 1,373,800.00

Despite the overwhelming amount of work that lies ahead for the County, we will continue to plan and make the most of our funds available. The following table outlines future projects that have funding secured and will be completed over the next few years.

2021 & FUTURE FUNDING

Project Type	Bridge/Road Number/Description	Percent Funded	Project Total Cost	Funding Year
Bridge	MOE-C28-0.56	80% LBR, 15%Credit Bridge, 5% Local	\$760,000.00	FY2023
Bridge	MOE-C29-6.95	80%	\$425,000.00	FY2023
Bridge	MOE-CR29-0.85	100% Construction, Local - Design costs	\$1,253,847.42	FY2021
Bridge	MOE-TR0307-0.75	80%	\$1,106,000.00	2024
Bridge	MOE - CR12-18.00	Engineering - Local responsibility Construction-100% funded	\$331,175.00	2022
Road/Resurfacing	CR12 (SR26 to SR800) HIR & Chip Seal	80%	\$1,085,000.00	FY2023
Road/Resurfacing	CR27/36/65	OPWC Grant \$400,000 Engineer Cash/In-Kind \$269,799	\$669,799.00	2021
Road/Resurfacing	CR28	100% (\$500,000 max)	\$500,000.00	2022
Drainage/Culvert	CR15, CR105C, CR68, CR88	79%	\$456,583.00	FY2020-2022
Safety Study	Roadside Hazard, Sign compliance - 372 miles	90%	\$24,820.00	FY2021
Sign	Curve Signage - 3 locations	100%	\$2,954.00	FY2021
Guardrail	Various CR (CR2, CR37, CR22, CR43, CR138)	100%	\$300,000.00	FY2023



TR307-0.75 Bridge
Slated for replacement in
2024

