



Athens County Engineer

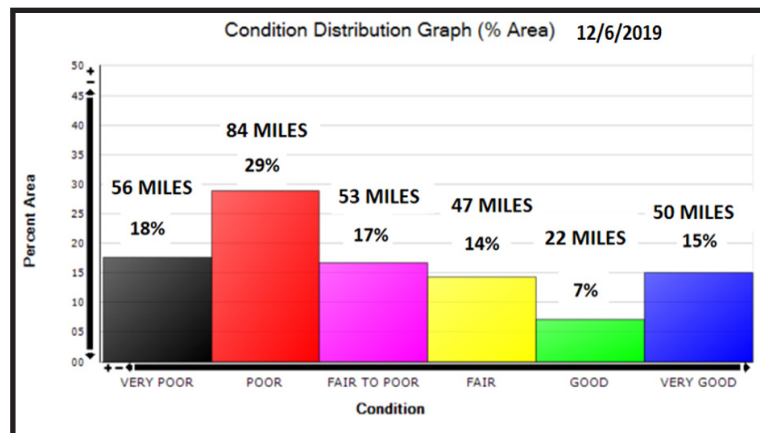
2022 Annual Report

This is my tenth annual report on the condition of the county roads, bridges, and culverts as required by Section 5543.02 of the Ohio Revised Code.

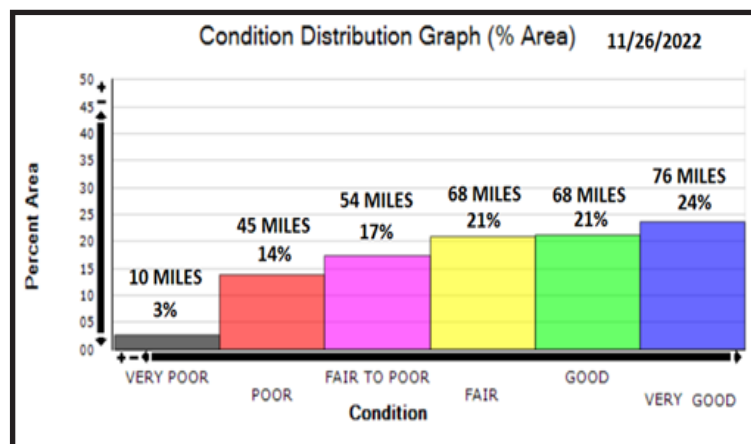
ATHENS COUNTY ROADS ARE IMPROVING EVERY YEAR!

The condition of Athens County roads have improved significantly over the last three years. Kindler and Associates, LLC were hired in the fall of 2019 to inspect and evaluate asphalt and chip seal county roads. The pavement condition index (PCI) ratings determined by Mr. Kindler along with the average daily traffic (ADT) counts are used by the Engineer's office to prioritize county roads for resurfacing and road improvement projects. In 2022, another complete PCI inspection was performed for all county asphalt, chip seal, and bituminous cold mix pavements and the results are as follows:

December 6, 2019 Pavement Conditions:



November 22, 2022 Pavement Conditions:



The graphs illustrate movement to the right, or an overall improvement from 2019 to 2022. The county road mileage ratings of fair to good or very good increased dramatically; the fair to poor roads stayed about the same; and the very poor to poor roads decreased substantially. The average PCI was 73 at the end of 2022 which is a great improvement when compared to the average PCI of 59 at the end of 2019.

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ATHENS COUNTY ROADS ARE IMPROVING EVERY YEAR

Continued from cover:

According to Mr. Kindler's report, this steady improvement is very impressive and is attributed to the following:

- Manufacturing cold-mix in house, making the material more affordable, has enabled the Engineer's Office to do more asphalt leveling which has moved many of the poor and very poor sections into the fair and good condition categories.
- Attention to drainage, improving culverts, and ditching efforts kept some fair and good sections from sliding into poor and very poor.
- Choosing the correct treatments and pavements to resurface and chip seal kept them in the very good and good categories longer.
- Attention to needed maintenance kept problem areas from progressing faster and growing larger.

The Inspection Process Explained:

The ASTM D6433 inspection methodology was followed. Sample areas of 2,500 square feet within each section of pavement were inspected for distress type, severity, and quantity. This data was input into PAVER, the pavement management system, which processed the data and produced a PCI for each section of pavement (from intersection to intersection).

The PCI scale used for each rating description is shown in the following chart:

Name	LowValue	HighValue	Color
VERY GOOD	91.00	100.00	Blue
GOOD	76.00	90.00	Green
FAIR	66.00	75.00	Yellow
FAIR TO POOR	56.00	65.00	Magenta
POOR	41.00	55.00	Red
VERY POOR	.00	40.00	Black

SPECIAL THANK YOU TO THE BOARD OF COMMISSIONERS

Signed into law on March 11, 2021, the American Rescue Plan Act (ARPA) provided funding to political subdivisions including the State of Ohio, county/township governments, cities, and villages. The Athens County Commissioners received \$12,689,004 in ARPA funds and committed \$233,993 to the purchase of MARCS radios for the Engineer's Office and \$474,250 toward the local match for the Athens County CSTP paving project. The MARCS radios will make our field operations much safer. The \$474,250 CSTP allocation will allow us to build the original project and not have to scale it back because of construction inflation. Thank you, Board of Commissioners, for providing these funds to the Athens County Engineer's Office.

Thank you for the opportunity to serve as your Athens County Engineer for the past 10 years!



Respectfully,

Jeff Maiden, P.E., P.S.
Athens County Engineer

RESURFACING PROJECTS

CONSTRUCTION INFLATION DELAYS MAJOR PAVING PROJECT TO 2023

The County Engineer's Office received a \$2,000,000 grant for the asphalt paving of major collector roads through the County Surface Transportation Program (CSTP). The grant was awarded in December 2017, but the funds were not available for construction until Fiscal Year 2023 (which began on July 1st, 2022).

The unit price bid for asphalt increased 56% from \$128 per cubic yard in 2021 to \$200 per cubic yard in 2022. Although we allowed for a 20% increase in inflation when we scoped the project, the low bid was 17% over the engineer's estimate. The low bid was rejected in 2022 and the project was rebid on February 16th, 2023. The project was awarded to Shelly & Sands, Inc., for \$3,061,849 and will be paved in the summer and fall of 2023. The Athens County Commissioners contributed \$474,250 in ARPA Funds toward this project .

RESURFACING PROJECTS

The 2022 Athens Motor Paving Project consisted of 6.2 miles of 2.5" asphalt overlay on North Peach Ridge Road (CR 26), Mush Run Road (CR 34), and Hooper Ridge Road (CR 36) using cold-mix asphalt. Drainage improvements were made on these roads prior to being paved. The project was paved by The Shelly Company of Thornville, Ohio at a cost of \$646,558. Funding was secured through a \$400,000 grant from the Ohio Public Works Commission Issue 1 Program and \$246,558 in local funds from the Engineer's budget .

Project	Road No.	Road Name	Project Limits	Length (miles)	Surface Treatment	Construction Cost
ATH-Motor Paving 2022	CR26	N Peach Ridge Rd	Bean Hollow Rd to SR550	1.9	Motor Paving	\$ 646,558
	CR34	Mush Run Rd	SR690 to New England Rd	2.8		
	CR36	Hooper Ridge Rd	Fleming Rd to Swett Hollow Rd	1.5		
Total Motor Paving =				6.2	miles	\$ 646,558



Mush Run Road

2022 MOTOR PAVING



North Peach Ridge Road



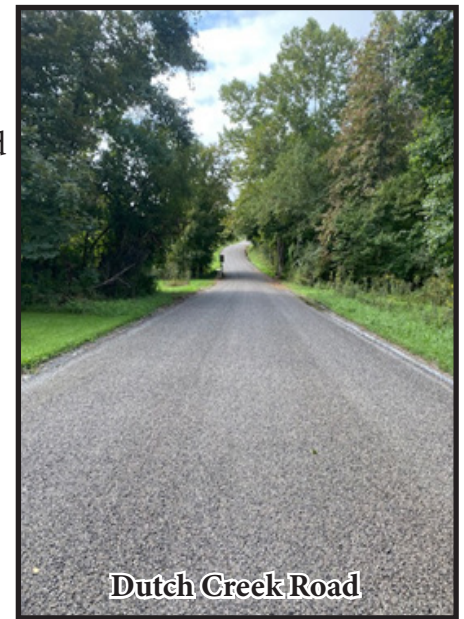
Hooper Ridge Road

CHIP AND SEAL

The 2022 Dutch Creek Road Chip Seal Project required a significant amount of preparatory work and two layers of chip seal resurfacing. Drainage improvements were completed first that included culvert replacements and ditch improvements. Several test holes were excavated that showed an existing chip and seal surface underneath the gravel. We swept most of the gravel off of the areas where the existing chip and seal surfaces were covered. We then used cold mix asphalt to level those areas. The double chip seal consisted of:

- 1st layer of #67 stone @ 35#/SY and CRS-2P emulsion @ 0.6 Gal/SY
- 2nd layer of #8 stone @ 24#/SY and CRS-2P emulsion @ 0.40 Gal/SY

This chip seal work was completed by The Shelly Company on September 2nd, 2022 at a cost of \$126,876 for 2.3 miles of roadway.



Dutch Creek Road

Project	Road No.	Road Name	Project Limits	Length (miles)	Surface Treatment	Construction Cost
Dutch Creek Rd Chip Seal	CR34	Dutch Creek Rd	N Peach Ridge to 13901 Dutch Creek	2.3	Double Chip Seal	\$ 126,876
Total Chip Seal =				2.3	miles	\$ 126,876

ASPHALT LEVELING (GRADER PATCHING)

County roads that are scheduled to be paved and/or chip sealed each year are repaired before they are resurfaced. The level of repair that is required depends on many factors including the severity of the winter and how many times we had to plow the roads. Cold mix asphalt leveling is typically used on existing chip seal surfaced roads; hot mix asphalt leveling is typically used on asphalt roads. We continued our focused effort in 2022 to improve these deteriorated sections by asphalt leveling with a motor grader and steel wheel roller. County crews applied 9,595 tons of cold mix asphalt on asphalt and chip seal surfaces, and 467 tons of hot mix asphalt on asphalt roads. To put this into perspective, 10,062 tons of asphalt would pave 11.5 miles of county road at 18' average width with a 1.5" asphalt overlay. County roads that received asphalt leveling by grader patching in 2022 are the following:

CR2, CR3, CR15, CR16, CR17, CR18, CR19, CR24, CR34, CR36, CR37, CR39, CR42, CR44, CR48, CR51, CR53, CR57, CR64, CR65, CR69, CR73, CR76, CR84, CR86, CR89, CR94, CR97, CR109

ASPHALT LEVELING (GRADER PATCHING)				
Labor & Fringes	Materials	Equipment	Subcontract	Total
\$127,090	\$776,122	\$142,511	\$107,858	\$1,153,581
	9,595 tons cold mix		McKee Paving	
	467 tons hot mix		CR1, CR16, CR20, CR24, CR 26, CR33A	



Leveling Fossil Rock Road

COLD MIX MANUFACTURING

The Athens County Engineer's Office partners with the Marietta office of Asphalt Materials, Inc. to manufacture cold mix asphalt at the Engineer's Depot located in Canaanville. We purchase the asphalt emulsion from Asphalt Materials, Inc., and they also provide the portable pug mill to mix the asphalt with limestone. The #67 limestone was purchased from Shelly Materials in Fultonham, Ohio for asphalt base; and the #8 limestone was purchased from Diamond Stone in Albany, Ohio for asphalt top.

2000 TONS BASE & TOP COAT COLD MIX MADE ON 08/31/22 and 09/01/22	Unit Quantity	Materials	Labor	Equipment	Total Cost	Price/Ton
Bare Cost to Manufacture- Per Ton	2,000					\$77.48
Asphalt Emulsion per Gallon + Freight	23,955	\$88,634.00			\$88,634.00	
Pug Mill Rental + Mobilization	1			\$5,200.00	\$5,200.00	
#8 Limestone- TOP	1000	\$29,500.00			\$29,500.00	
#67 Limestone- BASE	1000	\$27,850.00			\$27,850.00	
Operator 1 (34 hrs) + Superintendent (8 hrs)	8		\$2,019.00		\$2,019.00	
Case Loader/ Caterpillar Loader = 17 hrs each	8			\$1,753.55	\$1,753.55	
Cost to Load Trucks - per ton	8		\$23.74	\$29.65		\$6.67
Administrative Cost- Billing						\$7.85
Direct Cost to Townships & Villages Per Ton =						\$92.00

The bare cost to manufacture cold mix asphalt was \$77.48 per ton.

The cost to purchase cold mix asphalt in Marietta was \$140.00 per ton.

The trucking cost from Marietta to Canaanville was approximately \$10.00 per ton.

The net savings per ton of asphalt was \$72.52

Total cold mix manufactured in 2022 = 10,852 tons

Total Savings from Manufacturing Cold Mix in 2022 = \$786,987

2022 Total Cold Mix Sold (in tons)	
Township/Village/City	Cold Mix
Alexander	230.44
Ames	17.77
Athens	62.72
Canaan	3.02
Carthage	289.24
Dover	42.12
Lodi	9.25
Rome	16.89
Trimble	16.05
City of Nelsonville	41.57
Village of Albany	3.62
Village of Glouster	1.69
Village of Jacksonville	3.14
2022 TOTALS	737.52

Cold mix is sold to townships, villages, and the City of Nelsonville to patch potholes throughout the year. Although the price of \$92/ton includes a small fee for loading the material and an administrative fee for billing, it still represents a substantial savings to these local governments compared to purchasing cold mix and trucking from Lancaster or Marietta.



Manufacturing Cold Mix- Engineer's Depot

BRIDGES

Grants received through the 2022 Bridge Formula Program

The Bipartisan Infrastructure Law (BIL), the largest federal investment in public transportation in the nation's history, established the Bridge Formula Program (BFP) to replace, rehabilitate, preserve, protect, and construct highway bridges. The federal government will cover 100% of the construction cost for an off-system bridge that is owned by a local agency or federally recognized Tribe with the local agency covering the total cost for inspection and construction engineering costs.

BRIDGE FORMULA FUNDED BRIDGES							
Structure	Road No.	Road Name	Project Description	Design	Construction	Fed Max	Fiscal Year
ATH-TR 471-0.01	TR 471	Allison Rd.	22' span- Design/ Build Bid	\$ 60,000	\$ 350,000	\$ 475,000	FY 2023
ATH-TR 83-1.40	Lodi TR 83	Jeffers Rd.	34' span- Design/ Build Bid	\$ 75,000	\$ 500,000	\$ 625,000	FY 2023
ATH-TR 315-0.01	TR 315	Moore Rd.	70' span- Construction Only	\$ 103,000	\$ 1,030,000	\$ 1,352,950	FY 2024
TOTAL VALUE OF GRANTS =						\$2,452,950	

The Allison Road and Jeffers Road bridges will bid as design/build contracts on June 13, 2023. The successful contractor will develop the most economical design subject to the approval of the County Engineer. The completion date for this project is October 2024.

Grants received through the CEAO Local Bridge Program

We apply almost annually for Local Bridge (LBR) grant funds through the County Engineer's Association of Ohio. These bridges must be classified as a federal bridge with a clearspan greater than or equal to 20 feet. This is a very competitive program where we compete with 87 other Ohio counties. We currently have the following bridges funded and in development for replacement:

LOCAL BRIDGE PROGRAM (LBR) FUNDED BRIDGES						
Structure	Road No.	Road Name	Project Description	Construction	Fed Max	Fiscal Year
ATH-CR 49-0.04	CR 49	Joy Rd.	59' span Construction Only	\$ 580,000	\$ 684,950	FY 2022
ATH-TR 231-1.62	TR 231	Sharps Run Rd.	50' span Construction Only	\$ 285,950	\$ 404,700	FY 2023
ATH-TR 196-0.71	TR 196	Marietta Run Rd.	31' span Construction Only	\$ 341,050	\$ 459,800	FY 2025
ATH-CR 46- 0.96	CR 46	Blackwood Rd.	70' span Covered Bridge	\$ 760,000	\$ 1,070,650	FY 2025
TOTAL VALUE OF GRANTS =					\$2,620,100	

The Joy Road bridge project was bid on June 28, 2022. The low bidder was BUDS, Inc. at a total bid of \$487,509. Due to material delays, the bridge construction began in the spring of 2023 and is expected to be completed in June 2023.

The Sharps Run Road bridge project is scheduled to bid on May 30th, 2023 and expected to be completed in December 2023.

The current plan for the Blackwood Covered Bridge is to construct a steel beam superstructure that spans from abutment to abutment to support the traffic loads on the bridge. The steel will be visible from under the bridge but the aesthetic appeal of the covered bridge should remain unscathed.

BRIDGES

2022 Bridge and Box Culvert Projects

The Athens County bridge crew completed one new bridge replacement project in 2022- the Oakdale Road precast concrete box culvert project- and three other bridge repair projects.

Structure	Road No.	Road Name	Project Description	Contractors	Labor & Fringe	Material	Equipment	Total
ATH-CR25-5.08	CR 25	Long Run Rd	Poured concrete berm		\$ 2,632	\$ 512	\$ 987	\$ 4,131
ATH-CR31-1.04	CR 31	Oakdale Rd	8'x3' box culvert	\$ 37,915	\$ 17,604	\$ 3,290	\$ 14,644	\$ 73,453
ATH-CR46-0.96	CR 46	Blackwood Rd	Bridge deck repair		\$ 15,662	\$ 4,996	\$ 6,917	\$ 27,575
ATH-CR111-0.72	CR 111	Alderman Rd	Washout behind abutment		\$ 2,374	\$ 1,575	\$ 2,111	\$ 6,059
TOTALS =				\$ 37,915	\$ 38,272	\$ 10,373	\$ 24,658	\$ 111,218
**Labor/Equip/Mat = The portion of these bridge projects subject to "Force Account" rules								

Oakdale Road Box Culvert Project (CR 31-1.04)

The existing concrete box culvert was removed using a trackhoe equipped with a hoe ram breaker and a new 8' wide by 3' high box culvert was constructed. The precast concrete box culvert was built by county workers at a total cost of \$73,453. The field surveying and design was done by Donnie Stevens, Deputy Engineer.



Blackwood Covered Bridge Repairs (CR46-0.96)

The county bridge crew removed and replaced four new wood floor beams (12" x 13" x 16' long) and new wood decking. The bridge was temporarily closed when it was discovered that the first vertical member in the truss had sheared and the truss had an 8" sag in the middle. The County Engineer has been collaborating with Woolpert to develop a structural repair solution for the truss. The bridge repairs will be made in the summer of 2023.



LANDSLIDE REPAIRS

The Engineer's Office programmed, managed, and completed six landslide repair projects in 2022. The Pearlwood Road (CR 97-1.42) slip repair project was a slope reconstruction method of repair. The project was built by county road crews using force account option.

Landslide Site	Length	Road Name	Funding Source	Construction Cost	OEMA/FEMA	OPWC	Local	Contractor
CR20-4.95	95'	Strouds Run Road	OPWC	\$ 245,743		\$ 221,169	\$ 24,574	Alan Stone Company
CR97-1.42	N/A	Pearlwood Road	FEMA	\$ 36,256	\$ 36,256	\$ -	\$ -	Athens Co. Engineer
ATH-CR 90/ Various Landslide Repairs Project								
CR36-3.02	65'	Hooper Ridge Road	OEMA	\$ 147,797	\$ 110,848	\$ 33,254	\$ 3,695	Ohio-W.Va. Excavating
CR39-0.68	84'	Wrightstown Road	OEMA	\$ 127,868	\$ 95,901	\$ 28,770	\$ 3,197	Ohio-W.Va. Excavating
CR59-0.19	40'	Four Mile Creek Road	OEMA	\$ 112,140	\$ 84,105	\$ 25,232	\$ 2,804	Ohio-W.Va. Excavating
CR90-1.69	50'	Mansfield Road	OEMA	\$ 106,828	\$ 80,121	\$ 24,036	\$ 2,671	Ohio-W.Va. Excavating
SUBTOTAL= ATH-CR 90/ VARIOUS LANDSLIDE REPAIRS =				\$ 494,633	\$ 370,975	\$ 111,292	\$ 12,366	
TOTAL= 6 LANDSLIDE REPAIR PROJECTS IN 2022=				\$ 776,632	\$ 407,231	\$ 332,461	\$ 36,940	
** Note: Two other projects CR2-3.27 and CR76-0.12 were 95% complete with only paving remaining in 2023.								

ATH-CR 90/ Various Landslide Repairs Project

Four slip repair projects approved for OEMA State Disaster Relief funds were packaged together into one project for bidding purposes. The final funding formula ended up being 75% OEMA State Disaster Relief funds; 22.5% OPWC emergency funds; and 2.5% local funds. Bids were accepted August 2022 and the project was awarded to the Ohio-West Virginia Excavating Company of Shadyside, Ohio.

- Buckley Group of Athens, Ohio- Field surveying and engineering design
- Terracon of Columbus, Ohio- Soil borings and geotechnical report
- True Inspection Services of Urbana, Ohio- Construction inspection/engineering

The project was successfully completed in December 2022.

ATH-CR 20-4.95 Stroud's Run Road Project

Emergency grant funds were received from the Ohio Public Works Commission (OPWC) for the construction of this \$245,743 project. Bids were accepted on July 12, 2022, and the project was awarded to the Alan Stone Company of Vincent, Ohio. The Buckley Group did the field surveying and plans; Terracon did the soil borings and geotechnical report; and Beverly Sargent provided inspection and construction management services.



CR20-4.95 Landslide Repair

FORCE ACCOUNT

Processing Boundary Surveys

The county engineer's staff checked 298 boundary surveys in 2022 for compliance with the minimum standards for boundary surveys pursuant to Chapter 4733-37 of the Ohio Administrative Code.

Processing Utility Permits in County Road Right of Way

Brandon Williams reviews utility permit applications for compliance with county regulations and completes a field review at the proposed site. The County Engineer's office reviewed and approved 82 utility permits in 2022.

Snow and Ice Removal

The 2022-2023 winter season (December 1, 2022 - March 31, 2023) was a very mild winter with only a few snow and ice events. This resulted in a stockpile of salt and grits that will be carried forward into the 2023-2024 season.

2022-2023 Snow and Ice Removal		
Item	Amount	Total Cost
Labor (in hours/includes overtime)	326	\$ 16,854
Fuel (gallons)	638	\$ 2,552
Salt (in tons)	216	\$ 18,196
Grits (in tons)	653	\$ 9,632
Limestone Gravel (in tons)	431	\$ 11,745
Total Cost for 2022-2023 Winter Season		\$ 58,979

Culvert Replacement

County road workers replaced 35 culverts on 16 different county roads in 2022.

CULVERT REPLACEMENTS- by Athens County Engineer Employees					
County Road	Labor + Fringe	Equipment	Materials	Culvert (Feet)	Total
Totals	\$60,073	\$77,845	\$50,124	1485	\$188,042

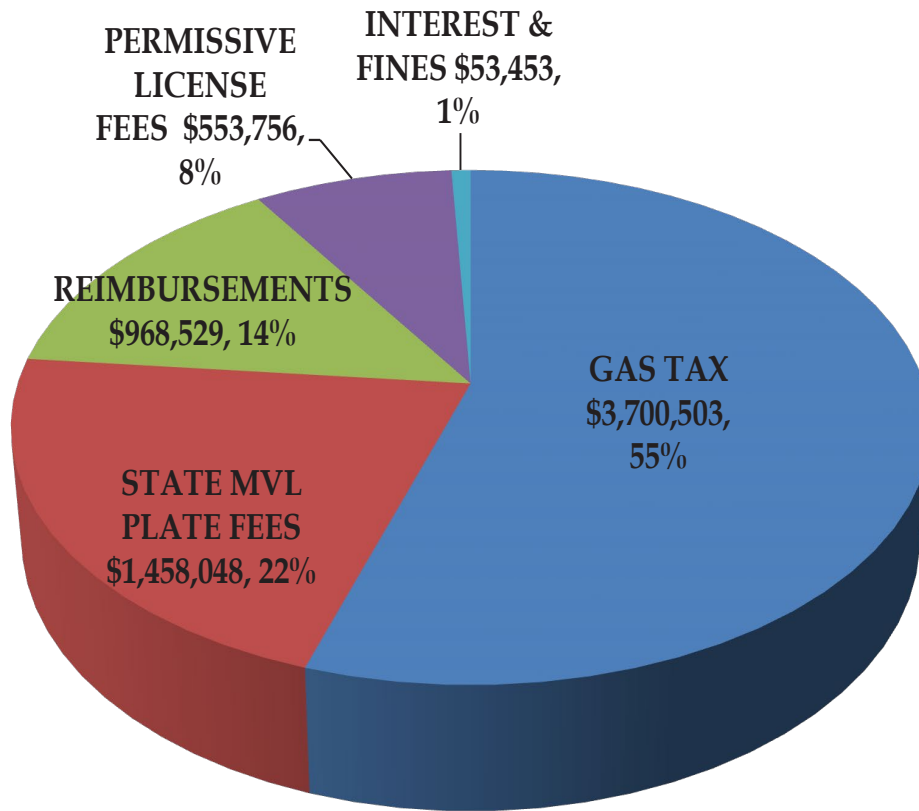
Berming- Mowing- Ditching- Tree Removal

County road workers removed 922 trees from the right-of-way; completed 3 complete rounds of mowing; and ditched and bermed 27 miles of roadway.

2022 BERMING- DITCHING- MOWING- TREE REMOVAL						
Work Item	Manhours	Labor Plus Fringe	Equipment	Materials	Total	Description
Berming	602	\$ 28,786	\$ 34,325	\$ 2,235	\$ 65,346	27 miles of road
Ditching	1770	\$ 86,162	\$ 94,817	\$ 2,472	\$ 183,451	
Mowing	2275	\$ 103,498	\$ 119,590	\$ -	\$ 223,088	3 rounds/ 1083 miles
Tree Removal	2546	\$ 129,473	\$ 82,111	\$ -	\$ 211,584	922 Trees Removed
Totals =		\$ 347,919	\$ 330,843	\$ 4,707	\$ 683,469	

FINANCIALS: REVENUE

REVENUE- 01/01/22 - 12/31/22: \$6,734,289



FIXED REVENUE

Total revenue received in 2022 was \$6,734,289 with fixed revenue coming in at \$5,765,760. Fixed revenues are the amounts used for annual budget projections and consist of gas tax, MVL plate fees, permissive license fees, and interest/fines. Our main source of income, the gas tax, is distributed equally among Ohio's 88 counties. For smaller counties, it is the primary source of revenue making up 64% of the fixed revenue received by the Athens County Engineer's Office.

VARIABLE REVENUE

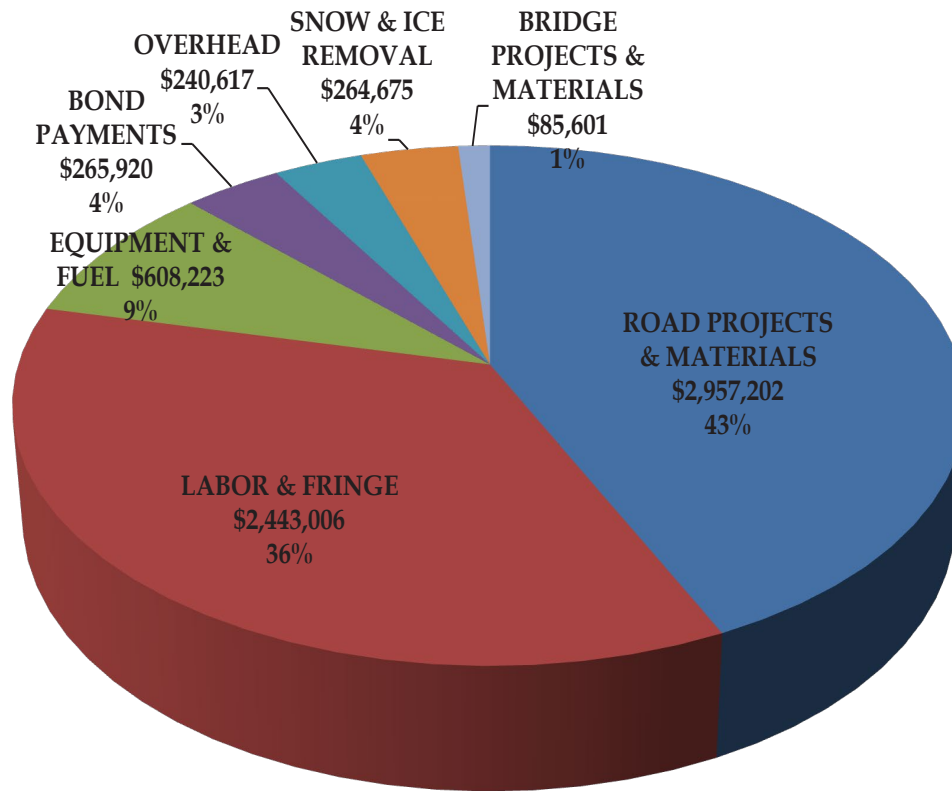
Variable revenues were reimbursements that totaled \$968,529. This category consisted of FEMA/OEMA grant reimbursements, salt and cold mix asphalt sales to township/villages/cities, and ODNR timber receipts.

PASS THROUGH REVENUES

Pass through revenues are funds paid on behalf of the county directly to contractors. Pass through revenues in 2022 included a \$400,000 OPWC Issue 1 Grant for the motor paving of various county roads, \$415,654 in OPWC grant funds for emergency slip repairs, and \$275,427 in FHWA funds for a pavement marking project. With pass through revenue included, total revenue for the Engineer's Office totaled \$7,825,370.

FINANCIALS: EXPENSES

EXPENSES- 01/01/22 - 12/31/22: \$6,865,244



EXPENSES

Expenses for the Athens County Engineer's Office totaled \$6,865,244 in 2022. Road projects and materials accounted for \$2,957,202 of expenses, or 51% of fixed revenues. Road projects consist of revenue paid to contractors for county road projects including asphalt paving, slip repairs, road striping, chip seal, guardrail, and signs. Road materials consist of limestone aggregates for gravel roads, cold mix asphalt, culvert pipe, etc. Labor and fringe benefits came in \$2,443,006 or 42% of fixed revenues. Fuel, oil, and other fluids expenses totaled \$288,129 which includes the purchase of 63,840 gallons of diesel fuel (on-road and off-road) with the average price of \$4.09/gallon.

CARRYOVER

The balance of the road fund on January 1st, 2023 was \$1,125,058. With the total revenue for 2022 at \$6,734,289 and expenses at \$6,865,244, in 2022 our department spent \$130,955 from our 2021 year end carryover (\$1,256,013).



ATHENS COUNTY ENGINEER 2022

Row One: Brandon Williams, Cody Hill, Donnie Stevens, Jeff Maiden, Andrea Frendscho, Mike Sheets, Jay Pickell, John Brunton, Shorty Hawk Row Two: Rick Nott, Cory Russell, Brian Baker, Justin Carder, Dave Harvey, Tom Snyder, Brent Kasler, Mark Meili, Bill Mellinger Row Three: Justin Williams, Tracy Bobo
Not Pictured: Travis Brooks, Dick Efaw, Jeremy Hayes, Craig Scott

ATHENS COUNTY ENGINEER'S MANAGEMENT TEAM:

Jeff Maiden, P.E., P.S.

Engineer

Donnie Stevens, P.E., P.S.

Deputy Engineer

Cody Hill

Road Superintendent

Mike Sheets

Road Superintendent

John Brunton

Bridge Superintendent

Brandon Williams

CAD/GIS Technician

Jay Pickell

Garage Supervisor

Andrea Frendscho

Business Manager

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