



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

The mission of the Athens County Engineer's Office (ACEO) is to serve the citizens of Athens County by building and maintaining a safe and modern county highway system; to respond promptly to reasonable road complaints; to process land surveys and property records accurately; and to be good stewards of taxpayer dollars by developing cost effective solutions for road and bridge maintenance problems.

INTRODUCTION	1
ROAD PROJECTS	4
UPDATES	8
ROAD REPAIRS & MAINTENANCE	9
BRIDGE PROJECTS	11
FINANCIALS	14
STAFF	15

TO THE CITIZENS OF ATHENS COUNTY AND THE BOARD OF COMMISSIONERS:

This is my fourth annual report about improvements made to Athens County's roads and bridges in 2016. I have also included a brief summary of 2012 campaign goals achieved during my first term in office (January 7th, 2013 through January 2nd, 2017).

THE FIRST MAJOR PUBLIC / PRIVATE JOINT VENTURE PROJECT

County Road 20 (East Scatter Ridge Road) is the eastern access road to Strouds Run State Park from Ohio State Route 690. We received a \$400,000 State Issue 1 grant in the fall of 2015 to pave this road with hot mix asphalt. The existing road base was in terrible condition, with clay soil coming through the surface in some areas. With severe rutting in the wheel tracks, the transverse cross section was no longer V-shaped, which resulted in water running down the middle of the road during storms. We used traditional methods of base repair during my first three years by excavating the road base and installing 8" of limestone base. That method works, but it is expensive and results in a "checkerboard" fix where an adjacent section would become unraveled the following winter.

I decided to hire GTA Energy, Inc., to drill twelve soil borings and provide design recommendations. The pavement/base combined thickness varied from 5" to 12" thick. I decided to reconstruct the road with an 8" thick cement stabilized base. Reumac Stabilization was hired to provide a stabilizer machine and cement spreader trucks and knowledgeable personnel for less than \$50,000. Athens County Engineer Office (ACEO) operators provided finish grade and compaction, cured the new road base by applying water daily, and provided traffic control. ACEO purchased the cement. The entire road base reconstruction process took four-and-a-half days to build 3.5 miles of new road base. After allowing one week for the cement base to cure, Nuko Paving then started the 3" thick asphalt overlay project. It was completed in about two weeks.

ACEO employees spent several weeks during the summer of 2016 preparing the roadway corridor for the pavement reconstruction project. Adjacent berms were excavated and graded, and several culverts were replaced. The end result is a modern county road that should maintain its profile and structural integrity for decades to come.

There were several ACEO employees that stepped up to the challenge during Labor Day week (September 6th through September 11th) and were true leaders in making this project successful. Employees who worked more than twenty hours of overtime that week were Mike Sheets, Lyle Fuller, Shorty Hawk, Travis Brooks, Mark Meili, Dick Efaw, Matt Booth, and Tracy Bobo. Employees who worked ten hours or more of overtime during Labor Day week were John Brunton, Craig Scott, David Harvey, Bernard Mellinger, and David Holmes. It is important to acknowledge that when asked to step up and get the job done, these guys responded and worked until dark on some of those days. A photograph of all current employees is included on the back page of this report.

ROAD USER MAINTENANCE AGREEMENTS (RUMAs)

There were two new RUMAs established in 2016. The first agreement between Athens County and Texas Eastern Transmission was signed on April 26th, 2016, for a major gas pipeline project that will be constructed in 2017. That agreement includes haul roads to be used; specifications for county road crossings; the location and condition of fourteen bridges on the haul roads; and compensation for any damages caused by the project. The second agreement is with Oxford Mining LLC and was signed on July 7th, 2016, for the future development of a coal mine in northern Trimble Township. That agreement covers reimbursable costs for any damages to Athens County roads, and stipulates that Oxford will pay the cost to build a new bridge on Oakdale Road (CR 31). Both agreements require bonds be provided to the County. The Oxford Mining LLC agreement requires payment for the bridge at least six months prior to the completion of the bridge.

AMERICAN ELECTRIC POWER (AEP) PAYS FOR WOLFE BENNETT ROAD (CR 73) REPAIRS

Although it's been almost two years since AEP started construction on several major transmission line upgrades in Athens County, we have not finalized a RUMA agreement as of this writing. However, we have monitored their construction activities closely. The damage caused by heavy trucks hauling on Wolfe Bennett Road (CR 73) was so severe that the entire road base had to be reconstructed. Soil borings were taken and a pavement design was provided by GTA Energy, Inc. The ACEO staff prepared drawings and bid specifications to rebuild 1.0 mile of road using cement base stabilization, and to pave 1.6 miles of CR 73 (i.e., just south of the Nelsonville City limits). AEP paid approximately \$195,000 for these repairs out of a total engineering/construction cost of approximately \$210,000.

COOLVILLE RIDGE (CR 75) SLIP REPAIR – A PARTNERSHIP WITH ODNR

This landslide had been active for many years. A shallow steel piling wall had been constructed in 2011, but had failed (i.e., rolled over and slid down the hill). We found quite a bit of coal on the site and believed that the presence of an old underground coal mine was the primary cause of the instability. I was aware of an ODNR program in the 1990's where state funds were available for fixing and repairing projects related to reclaiming old coal mine sites. ODNR was contacted and agreed to provide \$220,000 in emergency funding. The ACEO staff provided the engineering design and bid documents, and ODNR took bids on the project and administered the construction project. The details are on page six of this report.

DANGEROUS CURVES NOW HAVE SAFE SPEED SIGNS

Chevron warning signs were provided for the 90 most dangerous curves on the Athens County road system. This project really shows the diversity of the ACEO design staff. Donnie Stevens, the Athens County Assistant Engineer, planned and engineered a ball bank study to determine the safe operating speed for the 90 worst horizontal curves (based on ODOT accident data). The study was used to post the safe operating speed limit signs which motorists could use to maneuver through each curve. Although Donnie had no prior experience with these ball bank studies, he easily maneuvered through the design process. Donnie has done nearly all of the field surveying and engineering drawings along with our CAD/GIS Technician, Brandon Williams. Donnie Stevens has been a major asset for this office and saved Athens County tens of thousands of dollars compared to the cost of hiring an outside consulting firm. This project was 100% funded by a \$50,000 HSIP Safety Grant from ODOT as administered by the CEAO (County Engineer's Association of Ohio).

DUTCH CREEK ROAD PROHIBITION

Portions of Dutch Creek Road between State Route 550 and Stanley Road are currently subject to a preliminary injunction by the Athens County Court of Common Pleas precluding the use of asphalt products to resurface the road. That lawsuit remains pending and we hope to resolve it soon.

2012 CAMPAIGN GOALS ACHIEVED

- (1) Be Responsive to Citizen Concerns / Improved Communication with Property Owners:
 - I setup an electronic complaint filing procedure and a system for responding to citizen complaints and recording what action was taken to fix the problem.
- (2) Be a Full-Time, Accessible Engineer:
 - I sold my business, RJM Engineering Co., Inc., and made a full time commitment to this job. I have learned that I cannot respond to every phone call, but if I cannot, then a subordinate does.
- (3) Advise Township and Village Governments:
 - Either I or my staff has responded to township trustees and villages when asked for help. I have looked at many landslides (Glouster, Lodi, and Rome Townships), bridges and culverts (Troy, York, Carthage, and Athens Townships), and designed several paving and slip repair projects for townships.
- (4) Design and Build More Projects In-House
 - Athens County Engineer employees have replaced three deficient bridges with precast concrete box culverts; rehabilitated three bridges by partial demolition and rehabilitation of existing abutments with new superstructures; and constructed ten new bridge decks on existing steel beams.
 - Athens County Engineer employees constructed a major earth fill and grading project to create a level site for a new Salt Storage Building, and expand our yard for materials storage.
 - Athens County Engineer employees constructed a 3.5 mile section of cement stabilized road base for CR 20 in 2016. The smooth profile and transverse section was much smoother and had a better "rideability" than a similar project constructed by a private industry contractor that same year.
 - Athens County Engineer employees have constructed hundreds of culverts and several slip repair projects in the past four years.
 - Athens County Engineer employees have bermed and ditched, graded, placed asphalt leveling patches, chip and sealed roads, and filled potholes on all the county roads during my first term.
- (5) Save \$1 Million in Health Insurance Savings in My First Term
 - The office staff and non-bargaining unit employees were moved to the CEBCO Anthem Health Insurance Plan in 2013, resulting in approximately \$100,000 in savings.
 - The AFSCME Local 103 employees were moved to the CEBCO Plan in 2014, and the total health insurance savings for all County Engineer employees was \$246,770.
 - The total health insurance savings for my first four year term was at least \$850,000 to \$900,000. Actual insurance savings for 2015 and 2016 were not calculated.

Sincerely,



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



2016 ROAD PROJECTS

County Road 20 (East Scatter Ridge Road) – Base Stabilization and Asphalt Paving



Base stabilization begins.



Grading on CR 20.



Compacting the road surface on CR 20.



Work in progress.



CR 20 completed.

- OPWC Issue 1 Grant for \$400,000
- Soil Borings, Design, and Report by GTA Energy, Inc.
- 3.5 miles of Cement Base Stabilization by Athens County Engineer's Office (ACEO) Workers and Reumac Stabilization LLC
- Paving bid date of July 19th, 2016; Asphalt Paving by Nuko Paving of Jackson, Ohio with a low bid of \$507,120
- 4.3 miles of 3" thick asphalt paving x 18' wide
- Total Asphalt Paving costs of \$561,703
- Construction began early September 2016
- Entire project finished in October 2016

Pavement Striping Project – Countywide

- Survey and design by ACEO
- Striping 28.13 miles of Athens County roads
- Lowest quote – Griffin Pavement Striping
- Total cost of \$33,814
- Completed in August 2016



County Road 73 (Wolfe Bennett Road) – Paving Project



Base work begins on CR 73.



Surface being readied for asphalt.



CR 73 paving in action.

- Survey and design by ACEO
- Cement base stabilization – 1.02 miles
- Asphalt paving – 1.57 miles
- Bid date of August 30th, 2016
- Shelly and Sands – low bid of \$205,155
- AEP paid \$194,927 (95%)
- Construction began on November 3rd, 2016
- Project finished on November 22nd, 2016

County Road 1A (Happy Hollow Road) – Paving Project

- Eastern Federal Lands Access Program (EFLAP) Grant - \$104,689 (80%/20%)
- Survey and design by the Athens County Engineer's Office (ACEO)
- Ditched and bermed by ACEO
- 1.5 Miles of Motor Paving / Chip Seal
- Bid date of June 2nd, 2016
- Shelly Company – low bid of \$129,884
- Construction began on August 22nd, 2016
- Project finished on September 6th, 2016



CR 1A damage.



Paving in progress.



CR 1A completed.

County Curve Sign Upgrade Project – Countywide

- HSIP Grant through CEAO (100% funding)
- Ball bank curve studies, design, and installation by the Athens County Engineer's Office (ACEO)
- Included 90 high accident curves in Athens County
- ACEO staff installed over 1,000 signs on curves
- Total cost of signs, posts, and hardware = \$49,078
- Project completed in September 2016



County Road 75 (Coolville Ridge Road) – Slip Repair Project



CR 75 slip damage.



Pier wall drilling.



Pier wall complete.



CR 75 finished.

- Funded by Ohio Department of Natural Resources (ODNR) Grant (100% funding)
- Survey and design by the Athens County Engineer's Office (ACEO)
- Drilled shaft pier wall
- Bid date of August 10th, 2016
- Alan Stone Company – low bid of \$220,225
- Construction began on September 6th, 2016
- Completed on November 3rd, 2016

County Road 33B (Diamond Brick Road) – Slip Repair Project



Slip on CR 33B.



Slope reconstruction and guardrail complete.



View of completed rock channel protection.

- ODOT Emergency Funded (80%/20%)
- Survey and design by the Athens County Engineer's Office (ACEO)
- Slope reconstruction using rock channel protection
- Bid date of December 17th, 2015
- Parker Corporation – low bid of \$117,483
- Completed in Spring 2016



A bird's eye view of the Athens County Engineer's Office (Canaanville Outpost)

2016 UPDATES

GRANTS RECEIVED

State and federal grants are an important part of my strategic plan to overcome a diminishing budget and increasing costs. The grants received and listed below will make the following projects possible:

- | | |
|--|--|
| • County Road 73 Paving Project (completed FY2016) | AEP – Roadway Damage Payment for \$194,927 |
| • ATH-CR20-2.62 Landslide – Strouds Run Road | FHWA Emergency Program (80%/20%) for \$1,033,560 |
| • ATH-CR20-4.47 Landslide – Strouds Run Road | FHWA Emergency Program (80%/20%) for \$540,432 |
| • ATH-CR20-5.27 Landslide – Strouds Run Road | FHWA Emergency Program (80%/20%) for \$221,939 |
| • ATH-CR25-7.95 Landslide – Rock Riffle Road | FHWA Emergency Program (80%/20%) for \$241,445 |
| • County Wide – Pavement Marking Project – FY2022 | CEAO – HSIP (90%/10%) for \$150,000 |
| • County Wide – Inventory Study – FY2017 | CEAO – HSIP (90%/10%) for \$148,626 |
| • SHV Load Rating – FY2017 | CEAO – SPR for \$21,000 |

LAND SURVEYS CHECKED

Property surveys are checked for compliance with the Minimum Standards and for mathematical accuracy, and then forwarded to the Mapping Department at the Athens County Auditor's Office for further processing. Brandon Williams (CAD/GIS Technician) does most of this work with oversight by Donnie Stevens (Assistant Engineer). They checked 358 boundary surveys for accuracy in 2016.

EQUIPMENT REPAIRS AND PURCHASES

To ensure that our employees have the tools they need to get their jobs done efficiently, several pieces of equipment were acquired in 2016:

- 2010 CAT CB64 Vibratory Roller
- 2015 Ford F150 Pickup Truck
- 1999 Freightliner FL60 Box Truck
- Meyer Snow Plow for 3/4 Ton Pickup Truck
- Laser Level

The total for these equipment expenditures was \$82,442. Four dump trucks purchased in 2014 have an annual payment of \$130,543 for five years; also, a backhoe, attachments, and pickups purchased in 2014 have an annual payment of \$40,545 for ten years. All of these expenditures are included in our \$212,985 in equipment expenses shown in the financials on page 14.

EQUIPMENT RENTALS

Renting equipment is also necessary to complete projects efficiently and in a timely manner. Below is a list of equipment rented in 2016:

- SK140 Excavators and Attachments
- Tractor with Boom Mower
- 6" Pump
- 66" Sheeps Foot Roller
- Water Truck

The total cost for these equipment rentals was \$25,923.

2016 ROAD REPAIRS AND MAINTENANCE



2016 – 2017 Snow and Ice Removal

Item	Amount	Total Costs
Labor (includes overtime)	1,075 hours	\$40,408
Fuel	13,471 gallons	\$29,202
Salt	1,327 tons	\$71,145
Grits (includes hauling)	4,582 tons	\$49,254
Total Costs for 2016-2017 Winter Season:		\$190,009

2016 Berming and Ditching

Road Number	Road Name	Berming	Ditching	Total
County Road 20	East Scatter Ridge Road	\$11,437	\$4,955	\$16,392
County Road 1A	Happy Hollow Road	\$9,119	\$2,520	\$11,639
Various	Various	\$63,976	\$66,326	\$130,302
Total Berming and Ditching Costs for 2016:		\$84,532	\$73,801	\$158,333

Proper roadway drainage is important to help preserve the life of the roads. In 2016, a total of \$84,532 labor, equipment, and material was spent on berming, and \$73,801 labor, equipment, and material was spent on ditching. Two roads (East Scatter Ridge Road and Happy Hollow Road) were bermed and ditched to prepare them for paving.

2016 Mowing

Athens County Engineer employees mow both sides of the road, three times a year, along the 363 miles of county roads. Employees logged a total 2,685 hours of mowing, at a total labor cost of \$107,251.

2016 Pothole Patching

Item	Amount	Patching Costs
Labor	2,908 hours	\$80,113
Cold Mix	939 tons	\$87,220
Equipment		\$56,746
Total Patching Costs for 2016:		\$298,934

The tonnage in this table represents around 100 single-axle dump truck loads of cold mix. ACEO employees clean out debris before hand-shoveling the cold mix into the pothole. Compaction of the cold mix into the area finishes the repair.

2016 ROAD REPAIRS AND MAINTENANCE

2016 Roadway Culverts

Road Number	Road Name	Feet of Culvert	Labor	Equipment	Materials	Total Costs
County Road 1	Carbondale/Kimberly	60	\$1,279	\$1,476	\$556	\$3,311
County Road 1A	Happy Hollow Road	375	\$11,511	\$8,471	\$11,330	\$31,312
County Road 10	Baker Road	310	\$6,024	\$7,550	\$11,066	\$24,640
County Road 17	Fisher Road	44	\$785	\$888	\$484	\$2,157
County Road 20	East Scatter Ridge Road	535	\$20,049	\$17,328	\$19,880	\$57,257
County Road 27	Jacksonville Road	40	\$1,901	\$1,662	\$1,236	\$4,799
County Road 38	Sand Rock Road	60	\$1,921	\$38,181	\$788	\$40,890
County Road 51	Plantville Road	40	\$844	\$814	\$773	\$2,431
County Road 57	N. Rodehaver Road	90	\$869	\$425	\$1,428	\$2,722
County Road 57	S. Rodehaver Road	195	\$5,778	\$5,032	\$9,200	\$20,010
County Road 60	Houston Road	40	\$960	\$593	\$84	\$1,637
County Road 67	Goose Run Road	80	\$3,037	\$2,543	\$3,216	\$8,796
County Road 73	Wolfe Bennett Road	170	\$9,793	\$10,498	\$6,886	\$27,177
County Road 75	Dutch Ridge Road	40	\$1,262	\$1,268	\$388	\$2,918
County Road 78	Marion Johnson Road	30	\$439	\$414	\$225	\$1,078
County Road 80	Enlow Road	40	\$1,901	\$1,552	\$1,583	\$5,036
County Road 86	N. Concord Road	120	\$8,522	\$10,826	\$13,230	\$32,578
County Road 99	Robinson Road	60	\$1,322	\$1,080	\$840	\$3,242
Total Roadway Culvert Amounts for 2016:		2,329 feet	\$78,197	\$110,601	\$83,193	\$271,991

2016 Road Leveling

The Athens County Engineer's Office worked on approximately 4.7 miles of asphalt leveling in 2016. We used 727 tons of cold mix; 2,553 tons of hot mix; and 2,554 tons of stone on the following roads: CR 1A, CR 3, CR 4, CR 9, CR 10, CR 15, CR 16, CR 17, CR 18, CR 20, CR 21, CR 24, CR 25, CR 28, CR 31, CR 34, CR 35, CR 36, CR 37, CR 38, CR 39, CR 42, CR 44, CR 46, CR 47, CR 48, CR 51, CR 53, CR 56, CR 57, CR 58, CR 62, CR 63, CR 65, CR 67, CR 69, CR 75, CR 76, CR 81, CR 82, CR 83, CR 84, CR 86, CR 89, CR 90, CR 94, CR 94A, CR 97, CR 98, CR 99, CR 102, CR 110. This work was done at a total cost of **\$398,221** (labor \$72,148; equipment \$77,581; materials \$248,492).

2016 Chip and Seal

Road Number	Road Name	Miles	Labor	Equipment	Materials	Total Costs
County Road 63	Torch Road	1.00	\$4,312	\$4,054	\$11,429	\$19,795

County Road 48 (New England Road) – Bridge Replacement



- Survey, design, and construction by ACEO
- Modified existing abutments and replaced steel superstructure (29'-2" C/C bearing)
- Old bridge width = 18'-6" face-to-face rail
- New bridge width = 22' face-to-face rail
- Labor and materials = \$73,980
- Construction began October 25th, 2016
- Opened on November 18th, 2016



Dover Township Road 225 (Hamley Run Road) – Box Culvert



- Survey, design, and construction by ACEO
- Removed existing bridge and constructed 8'x8'x48' box culvert
- Old bridge width = 10' face-to-face rail
- New bridge width = 22' face-to-face rail
- Labor and materials = \$93,736
- Construction began March 6th, 2016
- Opened on May 18th, 2016



2016 BRIDGE PROJECTS

County Road 90 – Mansfield Road Bridge (OBPP)

- Survey, site plan, and right-of-way plans by the Athens County Engineer's Office
- Bid/letting date of April 23rd, 2015
- Shelly and Sands, Inc. – low bid of \$1,429,382 for four OBPP Bridge projects
- Construction completed April 2016



Rome Township Road 229 – Copeland Road Bridge (OBPP)



- Survey, site plan, and right-of-way plans by the Athens County Engineer's Office
- Bid/letting date of April 22nd, 2016
- DGM, Inc. – low bid of \$1,447,974 for five OBPP Bridge projects
- Construction completed November 2016

Waterloo Township Road 265 – Hamley Run Road Bridge (OBPP)



- Survey, site plan, and right-of-way plans by the Athens County Engineer's Office
- Bid/letting date of April 22nd, 2016
- DGM, Inc. – low bid of \$1,447,974 for five OBPP Bridge projects
- Construction completed November 2016

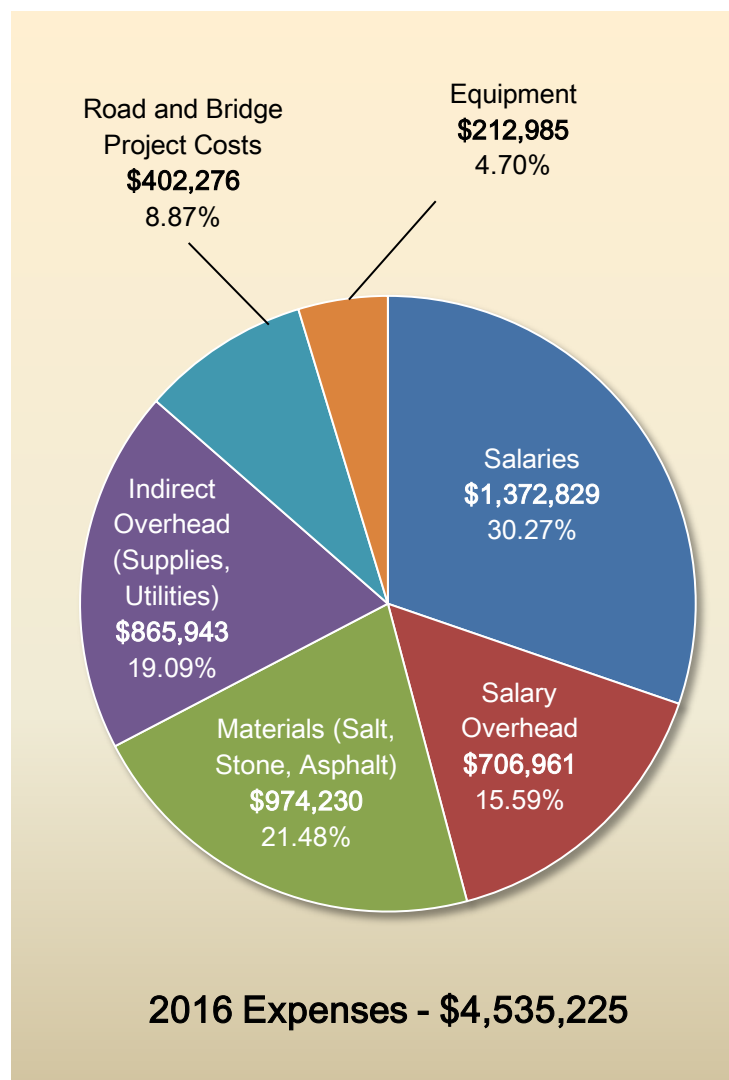
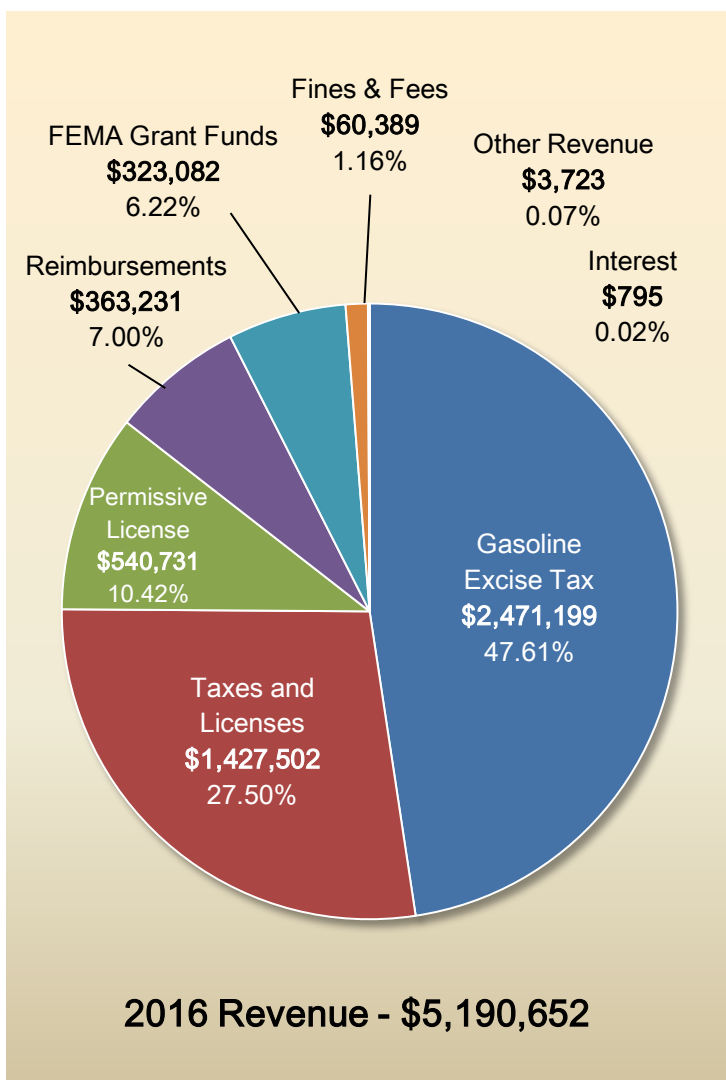


Ohio Bridge Partnership Program Bridges (OBPP) – 2017 Construction

- Survey, site plan, and right-of-way plans by the Athens County Engineer's Office
- Three bridges to be constructed by DGM Inc.
- Athens County Road 24 – South Canaan Road
- Athens County Road 25 – Rock Riffle Road
- Amesville Township Road TR 343 – Linscott Run Road
- Construction completion date of November 1st, 2017



2016 FINANCIAL STATUS



CONSTANT REVENUE SOURCES

The Athens County Engineer's Office is primarily funded by gasoline excise taxes, state registration taxes, motor vehicle registration fees, and county permissive license fees. Other regular sources of income are from fines and interest. In 2016, these constant revenue sources contributed to \$4,500,616 of our income for the year.

VARIABLE REVENUE SOURCES

Some portions of our revenue are highly variable from year to year. The majority of reimbursements come from grant revenue; project costs are paid upfront by ACEO, which the grantor (ODOT, OPWC, etc.) reimburses to ACEO after project completion. The section labeled Other Revenue includes funds from the sale of scrap metal, bid packets, maps, and copies. Refunds are collected due to returns, overpayments, and/or credits from vendors.

CARRYOVER INFORMATION

Our general Road Fund carryover amount on January 1st, 2016 was \$521,719. As shown by the charts above, revenues were \$5,190,652 and expenditures were \$4,535,225. This left a total carryover on December 31st, 2016 of \$1,177,146.

The balance in our Federal Emergency Management Agency (FEMA) Fund on January 1st, 2016 was \$323,082. All projects have been confirmed as complete. These funds were transferred to the general Road Fund, resulting in an ending carryover in the FEMA Fund at the end of 2016 of \$0.

Current Staff

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

Donnie Stevens, P.E., P.S.
Assistant Engineer

John Brunton
Bridge Inspector

Lyle Fuller
Garage Supervisor

Trisha Gail
Administrative Assistant

Michael Sheets
Superintendent

Maria Smith, B.S.
Business Manager

Brandon Williams
CAD/GIS Technician

Canaanville Outpost:

Brian Baker
 Matthew Booth
 Kenneth Coen
 Richard Efaw
 William Gould
 Albert Hawk
 Brent Kasler
 Mark Meili
 Craig Scott
 Travis Six

Coolville Outpost:

Tracy Bobo
 Travis Brooks
 Justin Williams

Nelsonville Outpost:

Bernard Mellinger
 Cory Russell

Redtown Outpost:

David Harvey
 David Holmes
 Geoffrey Moore



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Athens County Engineer's Office
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Front Row: Lyle Fuller, John Brunton, Trisha Gail, Bill Mellinger, Jeff Maiden, Donnie Stevens, Maria Smith, Brandon Williams, Billy Gould
Middle Row: Mike Sheets, Dick Efaw, Craig Scott, Brent Kasler, Matt Booth, Brian Baker, Shorty Hawk, Tracy Bobo, Mark Meili
Back Row: Dave Holmes, Kenny Coen, Geoff Moore, Travis Six, Justin Williams, Dave Harvey, Cory Russell, Travis Brooks

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