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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.

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Athens County Engineer's 2018 Annual Report



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

Record Rainfall in 2018

The year 2018 will be remembered as the year that we experienced one of the highest annual rainfalls in the history of Athens County. Data obtained from NOAA showed 60.6" of precipitation fell at the rain gauge south of Athens in 2018. The average annual rainfall is 39.4 inches. There was more damage to the county road system as a result of severe storms, flooding, and landslides than at any other time in recent history.

February 14th to February 25th (2018) Severe Storms

Ohio Governor John Kasich issued an emergency proclamation on February 24, 2018, and requested federal disaster relief for damages caused by severe storms and flooding that affected southern Ohio. On April 17, 2018, President Trump declared Athens County, along with 16 other counties in southeastern Ohio, eligible for federal disaster relief from the Federal Emergency Management Agency (FEMA).

I met with FEMA inspectors in June 2018, and documented thirty-two (32) damaged sites on the county road system, with eighteen (18) of those sites being major landslides. The total estimated cost for engineering, construction, and inspection was \$4.9 million dollars. The first "obligation" of FEMA funds was not received until November 2018, thereby pushing the majority of the landslide repairs into calendar year 2019. I also met with ODOT and USDOT-FHWA officials and looked at three (3) major landslides that occurred on county roads classified as "federal aid routes". FHWA has committed \$1,197,001 for the repair of those four landslides.

I made 25 site inspections for landslides on township roads including Lodi, Alexander, Ames, Athens, Bern, Carthage, and Rome Townships. We prepared cost estimates and assisted some of those Trustees with the FEMA application process.

June 24th to June 28th (2018) Severe Storms

The Ohio Emergency Management Agency (OEMA) committed \$262,023 for road damage and landslide projects resulting from the severe storms and flooding that occurred from June 24 to June 28, 2018.

County Road 10 Bridge Replacement



American Electric Power (AEP) Settlement

American Electric Power continued the replacement of their transmission lines in the northern part of Athens County. We entered into a Road User Maintenance Agreement (RUMA) with AEP, and existing road conditions were recorded. The construction of the access roads into the transmission sites required substantial amounts of limestone gravel to be hauled across county and township roads. This resulted in significant damage to the roads. In a negotiated settlement, AEP agreed to contribute \$355,050 toward the patching and paving of Kimberly Road (CR1), and the patching of Wolfe Bennett Road (CR73) and Connett Road (CR2).

Making “Cold Mix” Asphalt results in \$100,000 savings

Cochran Transportation has been the only local source for asphalt “Cold Mix” for patching potholes and leveling chip and seal roads. The price was always right as we traditionally paid \$95 per ton for an “oil based” asphalt cold mix. The other alternatives were to buy cold mix in Marietta at \$125 per ton, or in Lancaster at \$140 per ton, and truck it to Athens. The decision was made to start manufacturing the asphalt cold mix ourselves because of short supplies.



This new process required a capital investment consisting of a new concrete slab, with a precast concrete barrier placed around the perimeter for containment. We rented a portable pug mill from an asphalt supplier. Three county employees assisted the pug mill operator by loading the gravel into the mill and moving the cold mix asphalt into piles on the concrete slab after it was made. We manufactured approximately 4,800 ton of cold mix in 2018 that resulted in a cost savings to Athens County taxpayers of approximately \$100,000 (in 2018 alone).

Serving the Citizens of Athens County

Our mission is to provide the best county highway system possible given the funds that are available. The cost of maintaining county roads and bridges has increased dramatically since 2005, but, revenue has remained flat for the last 14 years. In the subsequent parts of this report, I have provided more detailed information about the “macro” condition of Athens County roads and bridges (based on 2018 bridge inspections, and 2017 road inspections). We have made substantial progress since 2013.

My goal is to show strong improvement in the road and bridge conditions in the years ahead as funding levels increase. Our focus has been to become more efficient in all of the services that we provide:

- The vast majority of the engineering and surveying work is done by Donnie Stevens, my assistant engineer. We save tens of thousands of dollars every year in consultant fees.
- We are very aggressive in the pursuit of grants to fund projects. By leveraging local budget dollars, we can do five times as much work.
- We optimize the purchasing of materials by accepting bids from suppliers for limestone and asphalt products, and purchasing salt on the State Contract.

- We optimize the purchase of new equipment by utilizing State Contract pricing. We buy used equipment when it is something that is not used all the time, and the price is right.
- Our workforce is more efficient when our 18 union employees report to the Canaanville depot from April to December. We are more efficient plowing snow in the winter months when some of those union workers report directly to the Nelsonville, Redtown, and Coolville outposts.
- Seasonal workers are utilized during the summer months as a temporary workforce to increase our ability to provide services including traffic control and pothole patching.

One of the most difficult parts of this job is dealing with unexpected projects that occur. My staff responded to 793 complaints in 2018. They cut trees in the middle of the night. They plow snow and treat ice covered roads with salt. I want to thank my entire team for their commitment to make the county road system as safe as possible for the citizens of Athens County. And most of all, I want to thank the citizens of Athens County for the opportunity to do this work and serve you as your Athens County Engineer.

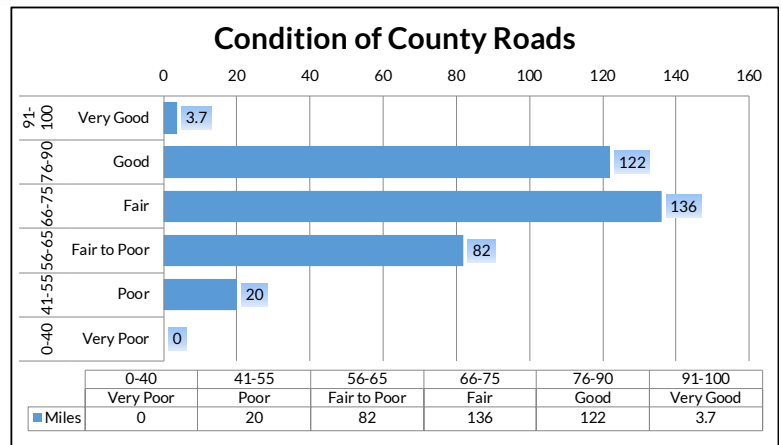
With Gratitude,



Front Row: Cindi Lucas, Lyle Fuller, Mike Sheets, Shelby Vore, Jeff Maiden, Donnie Stevens, Brandon Williams, Trisha Gail
Middle Row: Travis Brooks, Billy Gould, Brian Baker, Matt Booth, Brent Kasler, Mark Meili, Tracy Bobo, Bill Mellinger, John Brunton, Dick Efav
Back Row: Geoff Moore, Dave Harvey, Justin Williams, Craig Scott, Kenny Coen, Cory Russell, Shorty Hawk
Missing: Jeremy Hayes, Dave Holmes

Roads

There are 363 miles of roadway on the County Road System consisting of 154 miles of asphalt, 167 miles of chip and seal, 41 miles of gravel, and 1 mile of concrete. We completed the first inventory of the county road system in 2017, which provided us with Pavement Condition Ratings (PCR's) for road surface conditions. We also performed traffic counts to determine the average daily traffic (ADT) on county roads that had no data. We now use the combination of these factors – traffic load and pavement condition – to prioritize pavement repair and resurfacing projects. The chart summarizes Athens County road conditions as of January, 2018.



Pavement Condition Rating (GA) Chart for 2017

2018 Asphalt Paving Projects (7.1 Miles)

We resurfaced a total 7.1 miles of asphalt road in 2018 that required significant repair prior to the asphalt overlay. Burr Oak Road and Wolfe Bennett Road were paved using federal funding from the Eastern Federal Lands Access Program (EFLAP) with 20% local funds. Kimberly Road was paved using funds from a RUMA Settlement with American Electric Power.

- Burr Oak Road (CR107)- Construction Cost = \$191,970 for 1.0-mile paving
 - Required surface planing and patching bad areas before a 2 layer 3” thick overlay
- Wolfe Bennett Road (CR73)- Construction Cost = \$304,167 for 3.5 miles paving
 - Required asphalt leveling before a single layer of 2.5” thick motor paving
- Kimberly Road (CR1)- Construction Cost = \$245,271 for 2.6 miles paving
 - Required surface planing and patching bad areas before a 1.5” thick overlay

2018 Asphalt Leveling (Grader Patching)

Many of our chip and seal roads have swales in the “wheel track” locations from settlement over the years. Some have deteriorated to the point where the surface has reverted back to gravel. We made a focused effort in 2018 to repair these deteriorated sections by “asphalt leveling” with a motor grader and steel wheel roller. County crews applied 3,450 tons of cold mix asphalt on chip & seal surfaces, and 2,772 tons of hot mix asphalt on asphalt roads.

To put this into perspective, 6,222 tons is the equivalent of 445 tandem dump truck loads of asphalt. If 6,222 tons of asphalt were applied continuously along a roadway (instead of sections), you could pave 8.8 miles of 18’ wide roadway at 1.25” thick!

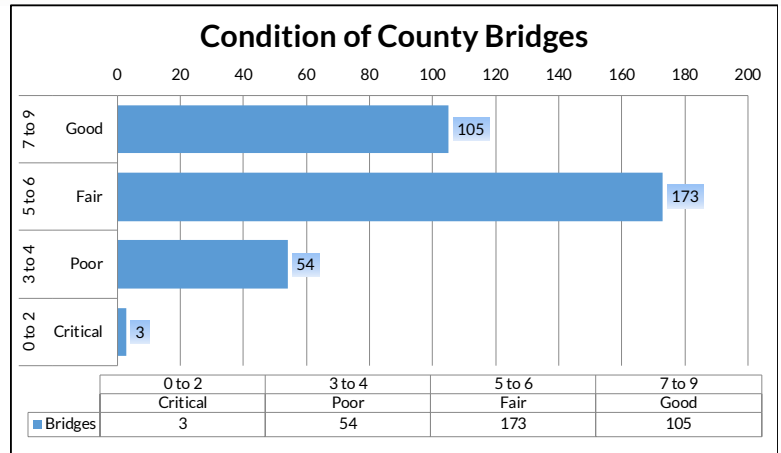


Bridges

The Athens County Engineer is responsible for the maintenance, repair, and replacement of a total of 335 bridges. There are 192 bridges on county roads, and 143 bridges on township roads (i.e., bridges 10' span or longer on township roads). These bridges are inspected annually and receive a General Appraisal Rating (GA) that shows the current condition of Athens County bridges (see Chart on the right).

There are currently 106 bridges that are posted with load limits, and 95 bridges that are “functionally obsolete,” which generally means they are too narrow to accommodate two-lane traffic.

There are only a handful of bridges that are eligible for LBR grant funding through the CEAO/ODOT. The other source for local bridge funding is through the OPWC Issue 1 Grant Program.



Bridge Condition Rating (GA) Chart for 2018

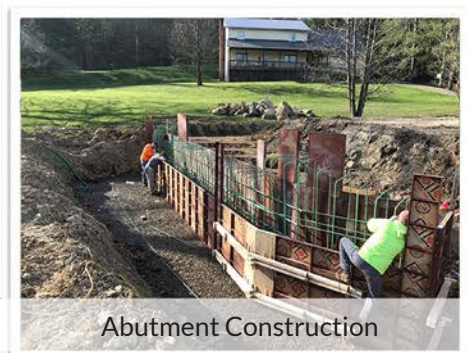


Athens County competes with Belmont, Hocking, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, and Washington Counties for funding for road, bridge, culvert, water, wastewater, solid waste, and storm water facilities. The OPWC Issue 1 program is very competitive and the scoring system favors paving projects versus bridge projects, and it seems nearly impossible to get both funded in one calendar year.

Our strategy has been to buy equipment and train county workers to do bridge repair and replacement projects. We have developed an excellent bridge crew that can compete with any contractor’s workforce.

2018 Bridge Projects

- Baker Road (CR 10-8.30) Bridge
 - Piling, Prestressed Concrete Beams, Paving, and Guardrail were contracted out.
- Parker Road (Lee T9-1.67)- Barrows Rd. (Lee T18-0.03)- and Perry Rd. (Alex T674-0.35)
 - We placed rock as scour protection for these three bridges.
- Wood Road (CR15-0.68) Bridge
 - We removed the bridge and installed temporary culverts.



Slip Repairs

There are usually a few slip repair projects every year. We designed and built 22 slip repair projects from 2013 to 2018 with a total cost of \$2,306,000. Therefore, the average number of landslides are 3-4 each year at an average cost of repair of approximately \$100,000. These slips are directly related to the volume and intensity of rainfall for any given year. In 2018 alone, we had 21 additional landslides, of which 18 were funded by Federal Emergency Management Agency (FEMA) and three were funded by Federal Highway Administration (FHWA).



2018 Slip Repair Projects

These slips were funded by OEMA, then surveyed and designed by ACEO staff in 2017 and constructed in 2018.

- ATH-OEMA Landslide Repairs = \$349,400; 3 Drilled Shaft Walls at these locations: CR24-2.60, CR37-2.55, CR75-4.46
- CR24-2.66 Slip Repair Project= \$85,298; Slope Reconstruction method

2018 FEMA / FHWA Projects - Contracted

There were a total of 22 landslides documented and funded by the Federal Government (FEMA/FHWA) and State of Ohio (OEMA) in the spring of 2018. Due to the sheer volume of work, engineering consultants were hired to drill soil borings and begin engineering design work. FEMA did not begin the final confirmation of funding until November 2018, which was too late to start construction of the drilled shaft repair projects. Twenty-one (21) slip repair projects will be constructed using the “drilled shaft walls” method of repair in 2019.

2018 FEMA / FHWA Projects: Force Account

Athens County employees completed the surveying, design and construction of one slip repair project on East Scatter Ridge Road (CR20-8.89). The slope reconstruction method using rock fill was used to fix the slip at a total cost of \$12,707 and was 100% reimbursed by FHWA.

The Athens County Engineer’s workforce made culvert and road repairs at twelve (12) project sites related to the 2018 February FEMA Disaster (DR4360 event). This “force account” work (i.e., labor, materials, and equipment) was completed in 2018 at a cost of approximately \$177,000 and was 100% reimbursed by FEMA.

Plowing Snow and Fixing Potholes

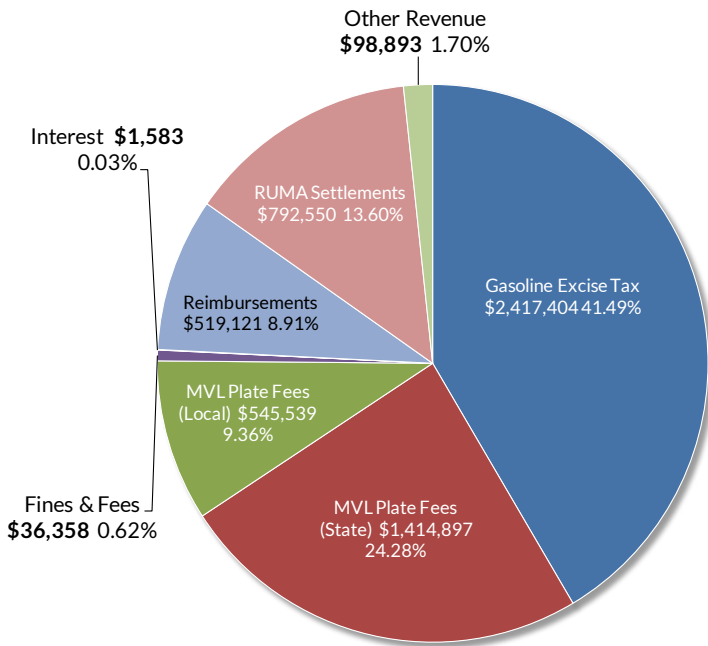
Pothole Patching

Potholes were severe after the extreme precipitation of the winter and spring of 2017-2018. Seasonal workers were hired early in an effort to keep two patching crews working non-stop for several months. County workers placed 1,424 tons of asphalt cold mix in potholes in 2018 – or the equivalent of 178 single-axle dump truck loads.

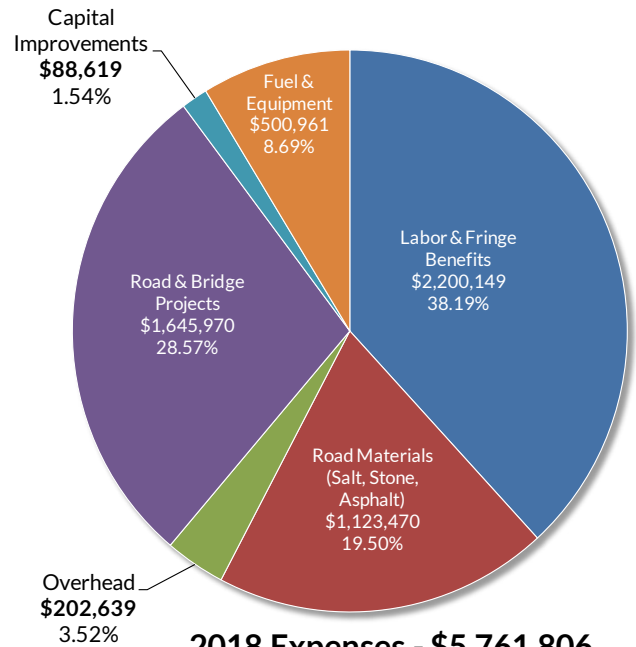
2018 - 2019 Snow and Ice Removal		
Item	Amount	Total Costs
Labor (includes overtime)	1,657 hours	\$69,433
Fuel	19,100 gallons	\$46,530
Salt	1322 tons	\$97,843
Grits (includes hauling)	5,073 tons	\$55,801
Total Costs for 2018-2019 Winter Season		\$269,607

2018 Pothole Patching	
Item	Patching Costs
Labor	\$ 96,873
Fringes	\$ 57,050
Equipment	\$ 94,675
Materials	\$ 136,657
Total	\$ 385,255

The Financials



2018 Revenue - \$5,826,344



2018 Expenses - \$5,761,806

Revenues

The revenue received from fixed sources in 2018 was \$4,415,781. This is the revenue number that we structure the annual budget on each year and consists of Gasoline Excise Taxes; Motor Vehicle License (MVL) Plate fees; and Fines & Fees. The revenue received from variable sources in 2018 was \$1,410,563. We cannot count on variable revenues because they vary each year. They include Reimbursements (mostly state and federal grants), Road User Maintenance Agreement (RUMA) settlements; and miscellaneous other. The total revenue received in 2018 was \$5,826,344. **Reminder: the County Engineer Receives NO revenue from property taxes.**

Expenses

The largest expenditure in 2018 was \$2,220,149 for Labor and Fringe Benefits. Note that “Labor and Fringes” were about 50% of the 2018 fixed revenues. The majority of other expenditures went directly into the county highway system with road and bridge project spending at \$1,645,970; road materials installed by county workers were \$1,123,470; fuel and equipment expenses were \$500,961; Overhead was \$202,639; and Capital Improvements (mostly salt storage building debt) was \$88,619. The total expenditures in 2018 were \$5,761,806.

Carryover

The balance in the Road Fund on January 1, 2018 was \$777,501. If you add 2018 annual revenues, and subtract 2018 annual expenses, you arrive at a year-end balance of \$842,039. Our average monthly expenses in 2018 were \$485,529. Many of our state and federal grants are reimbursable, which means we have to pay the expenses for a project before we are reimbursed. It’s important to carry a cash balance of at least one month of operating costs in the road fund at any specific time, plus a reserve for unexpected emergencies.

Pass Through Revenues and Expenses

Some project costs are paid directly by the State of Ohio to Contractors that build our projects. Although we plan and manage these projects, the revenue and expenses do not show up in the annual financials. The project costs paid directly by the State of Ohio was \$428,097 in 2018. Technically, the 2018 annual sales for the Athens County Engineer’s Office was \$6,254,441.

\$ 7.7 million in 2018 Grants

- 2018 FEMA Disaster: \$4,887,347
- 2018 FHWA Disaster: \$1,197,001
- 2018 OEMA – June Event: \$262,023
- 2018 SHV Bridge Load Rating: \$3,750
- CEAO Sign Upgrades: \$26,600
- OPWC Issue- CR15 Bridge: \$144,670
- LBR Bridge Grants FY 2024: \$1,178,000



Looking Forward to 2019

The 2019 construction season promises to be the busiest, most productive year in the history of the Athens County Engineer's Office.

2019 Paving and Resurfacing Projects

- 17.6 miles of asphalt resurfacing: \$2,668,919
- 11.5 miles of Chip and Seal resurfacing: \$293,829

2019 Bridge Projects

- 5-each bridge replacement projects: \$736,886
- 3-each major bridge repair projects: \$144,724

2018 FEMA Projects- built in 2019

- 18-each Drilled shaft wall projects: \$3,000,000

2019 FEMA Projects

FEMA announced on April 8th, 2019, that federal disaster assistance has been made available to the state of Ohio to supplement state and local recovery efforts in the areas affected by severe storms, flooding and landslides from Feb. 5-13, 2019. There are multiple projects on county and township roads that will qualify for state and federal assistance.

2018 FHWA Projects- built in 2019

- 3-each Drilled shaft wall projects: \$890,000

2018 OEMA Projects- built in 2019

- 10 road & 10 slip repair projects: \$383,626

2019 Guardrail Project

- 7700 feet of guardrail repair work at a cost of \$191,220

2019 Pavement marking (striping) Project

- 142 miles of centerline and edge line striping at a cost of \$157,891

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