

# 2013 AUGLAIZE COUNTY ENGINEER'S ANNUAL REPORT

By: Douglas Reinhart, P.E., P.S., Auglaize County Engineer  
**To the Board of Auglaize County Commissioners:**

One requirement of the Ohio Revised Code is for the County Engineer to annually report to the County Commissioners the status of: 350 miles of county maintained roadways, 344 bridges, 1130 large diameter culverts and the 341 miles of permanent maintenance ditches this department is responsible for. This report fulfills that mandate but also provides to the citizens of Auglaize County, a listing of the Highway Department's and Engineering Staff's accomplishments. The report also provides to the general public an associated cost to the improvements they have witnessed across the county.

I wish to thank the employees for their efforts during 2013. This is my 30<sup>th</sup> annual report and once again, their skills and dedication on the following numerous projects makes me look good. A special thank you to all the landowners adjacent to the improvements by allowing us to use the needed right-of-way to complete the projects efficiently and safely.

## **STATUS OF COUNTY MAINTAINED ROADWAYS**

CR# 33A was resurfaced with the aid of a federal gasoline tax grant which provided 80% of the \$ 1,670,037 dollar project. This 8.9 mile improvement will keep CR#33A one of the best maintained county roads for the next decade. Due to the statewide demand for these grant dollars, they only become available every 6-7 years.

Once the 20% match (\$334,000) was removed from the roadway capital improvement fund, only 6.7 of the other 341 miles of County maintained roadways received a new coat of asphalt. The cost of resurfacing one mile of roadway 20' wide @ 1 1/4" thick has now reached \$62,000. The 15.6 mile paving may sound somewhat impressive until you consider there exists a 350 mile system which equates to a road being resurfaced every 22 years. Early estimates for the 2014 paving program lean towards being able to pave less than 10 miles.

The last increase to County road/bridge funds was passed by the Ohio General Assembly in 2003. Costs of construction related items then and now will be made throughout this report. Because of a decline in funding along with the considerable inflation to construction related materials, the Auglaize County maintained roadways will see constant maintenance practices being used to preserve the integrity of the pavement.

## **STATUS OF COUNTY MAINTAINED BRIDGES**

I am proud to report that by the end of the 2013, none of the 344 bridges under our jurisdiction were posted with load limit restrictions. This was accomplished by the aggressive program of casting our own concrete bridge beams up to 33' in length and constructing three sided concrete boxes for the shorter spans less than 16'. Since 1967, this department has manufactured 169 sets of bridge beams and since 1997, 73 structures have been replaced using our three side boxes. It is not uncommon for the bridge crew to cast over 400 cubic yards of concrete each winter preparing for the upcoming construction season. In 2013 nine bridges and culverts were replaced using county manufactured beams and boxes.

There are only limited dollars in State Issue I bridge funding and federal gas tax grants to assist in paying for the longer span structures. Every year this department emphasizes on rehabilitating several of these bridges but you can only do that so many times before the entire structure is in need of replacement. Without increased funding, I do not know how many more years I can tout "zero" bridge postings.



The above three employees reached a major milestone and celebrated their 40<sup>th</sup> year with this department in 2013. (L to R) Dan Bennett, Bridge Engineer; Rick Miller, Road Superintendent and John Jauert, Surveyor. The above right photo shows one of the numerous road improvements completed for township trustees during 2013. The abandoned railroad crossing on Goshen Road (above right) was removed and a new 24" diameter storm drain was installed.



## **CONSTRUCTION INFLATION**

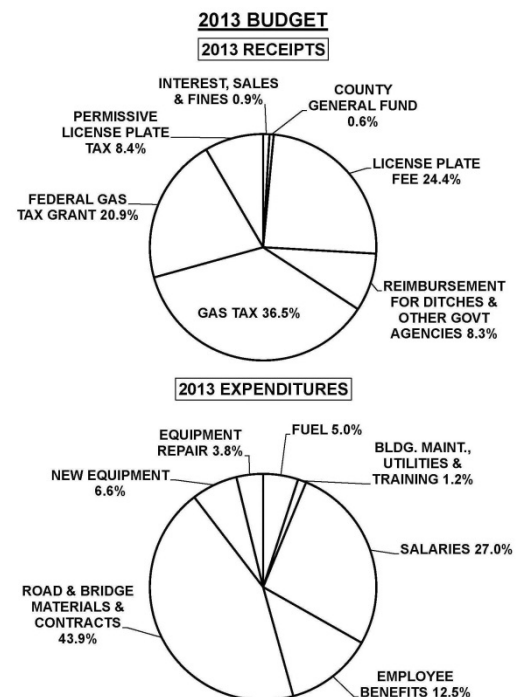
Since 2003, the last year this department received an increase in highway funding, the cost of inflation for many construction materials/equipment has increased annually by double digits. The following is just a partial list:

<u>2003</u>		<u>2013</u>
\$ 27.40	Ton of Hotmix in Place	\$ 74.65
\$ 93,920	Tandem Dump Truck	\$ 155,280
\$ 64.95	Cubic Yd. of Concrete	\$ 85.00
\$ 386.	Ton of Reinforcing Steel	\$ 761.
\$ 1.27	Gallon of diesel fuel	\$ 3.54
\$ 0.89	Gallon liquid Asphalt	\$ 1.94



In order to create more income to subsidize the budget, County Crews were hired by several townships to perform maintenance and safety improvements. The above photo shows the county grader widening 1.5 miles of the East Shelby Road for St. Marys and Washington Townships. A total of 1,015 tons of recycled asphalt grindings was placed in order to widen the pavement by three feet.

## **2013 BUDGET ITEMS TO NOTE**



The federal gas tax grant for the CR#33A project made that project a reality. Without the grant, no capital road improvements in Auglaize County would have been made for two entire years.

The 2013 income from License Plate and Gasoline Tax fees was \$116,000 less than what was seen in 2008. Unless grants are found as an added source of income, these fees amount to 88% of this department annual income.

In 2003, \$108,000 was spent on diesel fuel versus \$320,000 in 2013.





Kettlersville Road South of Glywood Road has been designated as a haul route for heavy truck traffic since 4-lane SR# 33 was built in 1974. Even though the pavement width was adequate, safety shoulders were non-existent in many areas. The Moulton Township Trustees hired County crews to move the side ditches away from the edge of the pavement and construct a minimum of six foot wide safety shoulders (above left photo). A major December rainfall event not only closed highways due to flooding, but the crop residue on the roadway (above right) created further problems for the traveling public. Front end and skid loaders spent days after the flood cleaning debris that plugged culverts, catch basins and bridges.

**2013 ROAD IMPROVEMENTS**

**Snow and Ice Control:** The winter of 2012-2013 was again another milder than normal winter. Trucks were dispatched on 33 different events and applied a total of 1,130 tons of pure salt (2,260 tons 1:1 salt/sand mix). Total labor and material costs amounted to \$ 152,700. The cost of a ton of salt this past year was \$ 68.30 versus \$ 36.69 in 2003, an 86% increase.

**Chip and Seal:** County Crews applied 88,476 gallons of liquid asphalt emulsion and 2,844 tons of #8 limestone as they completed sealing a 20’ wide pavement on 19 miles of county roads. Another 16,400 gallons and 550 tons of aggregate were applied on just the edges of 7.6 miles during the strip sealing program. Another 41,240 gallons of liquid asphalt and 1,447 tons of aggregate were applied to numerous township roads across the county. Full sealing a roadway seals the cracks and provides a new wearing surface at a material cost of \$ 10,465/mile. Paving a mile of highway with hotmix now costs \$62,000. Six miles can be sealed versus one mile being covered with hotmix asphalt. In 2013, #8 stone was purchased for \$9.45/ton, up 83% from the 2003 cost of \$ 5.15/ton. Liquid asphalt increased 218% over that same time period.

**Crack Sealing:** Over 9,000 gallons of liquid asphalt was applied through a machine called a “durapatcher” which heats the asphalt to 160° and then adds #8 limestone at the nozzle to spray a mix of the two in order to seal cracks. Also, 22,260# of polymerized crack sealant (heated to 300°) was squeegeed into the cracks after they have been blown clean with an air compressor to another 11.6 miles.

**Roadway Storm Drains:** The ongoing program to update the century old storm drains within the road right-of-way included the replacement of: 932 feet of reinforced concrete pipe through the pavement; 10,300 feet of storm drains running parallel to the roadway and 64 new catch basin inlets.

**2013 ROADWAY RESURFACING**

<u>Road Name</u>	<u>Length</u>	<u>Location</u>	<u>Tons/Hotmix</u>	<u>Cost</u>
Botkins Angle	0.93 Miles	New Knoxville to Southland	745	\$ 58,377
Canal Road	0.50 Miles	7 <sup>th</sup> St. Minster to SR# 119	438	\$ 34,049
Minster Egypt	2.27 Miles	Minster to SR #364	1,822	\$ 143,003
Wapak Fryburg	2.70 Miles	Fryburg to Wapak Fisher	2,178	\$ 170,187
CR#33A	8.90 Miles	Wapak to St. Marys	20,543	\$1,670,037*

(\* A total of 3,020 square yard of waterproofing fabric was also placed on over 700 construction joints)



One of the most valuable pieces of equipment updated during 2013 was the sewer camera. A “push” camera can be used for smaller diameter tile. The camera shown to the left is used for lines 8” diameter and larger pipe and can travel up to 800 feet depending on the structural integrity of the pipe. This unit has not only excellent lighting, but has the ability to “look” up laterals to inspect their condition. Failures in storm sewers under and along a highway can easily be pinpointed without multiple excavations.



The Emerald Ash Borer completely devastated the ash trees in Auglaize County. This department is being proactive and working with the adjacent landowners to remove these dead trees (above photo) near the roadway before they fall and become a hazard to the traveling public.



Because most of the drainage ditches in Auglaize County have very low gradients due to the flat terrain, excavators stay busy throughout the year removing silt in order to provide needed capacity. This side ditch along Santa Fe Line Road has less than 1” of fall per every 100’ of channel.



The personnel in the shop show off their talents in the above photo by building a trailer to haul construction equipment such as mowing tractors, skid loaders, seeding equipment, etc. The trailer has two 7,000# axles and was put together with less than \$3,000 worth of materials.



33A Paving (above) showing half of the roadway (15’) being resurfaced in one pass.





The above photo shows a crane setting 66' long concrete box beams on the bridge on the Salem Noble Road just 120' west of CR#66A. County crews removed the existing deteriorated deck and rehabilitated the abutments. A bid was let to purchase and set the beams and was partially financed by a 0% 20 year loan from the Ohio Public Works Commission. This 66' long by 28' wide deck cost just over \$100,000. In 2002, a similar box beam deck on Greenville Road was 72' in length and 32' in width was purchased for \$57,000.



A two-span structure on Townline Kossuth was replaced using our forces and county manufactured precast concrete beams. The above photo shows the piling for the center pier in place and the redi-mix truck delivering concrete for the fabrication of the north abutment. The finished product (below) consists of two sets of beams 27' and 19' long, two new abutments and a center support pier with rip-rap placed preventing bank erosion. Total cost of this bridge, including the guardrail, approaches, and asphalt placement amounted to \$92,000 or \$ 74/sq. ft.. A recent study comparing county force account projects versus contracted projects using federal funds and guidelines found those project cost taxpayers over \$160 per square foot.



# BRIDGES & CULVERTS

County Engineers across Ohio are responsible for 26,900 bridges located on county and township maintained highways. Currently 1,933 of those structures are posted with load limit restrictions and 81 have been closed. 3,900 bridges are presently over 50 years of age and 5,641 are deemed either structurally deficient (SD) or functionally obsolete (FO).

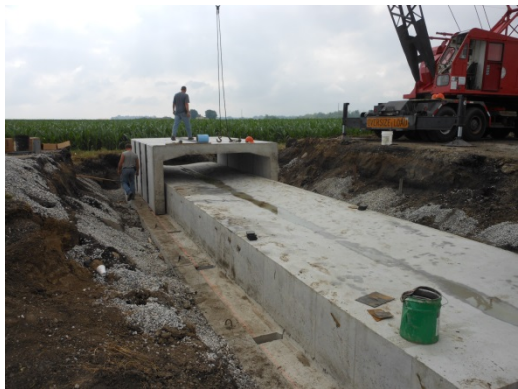
Of the 344 bridges under this department's jurisdiction, no bridges are posted nor closed and 42 are over 50 years old and just six SD or FO. . This status is attributed to the aggressive work being completed by our own forces and obtaining state and federal grants whenever possible. These additional funds are very limited and highly competitive and will become even more so as construction inflation continues on its upward spiral as income from gasoline and license plate fees declines.

## REAUTHORIZATION OF OPWC FUNDING

On this upcoming May primary ballot there will be a bond issue to extend the existing funding through the State's Ohio Public Works Commission for another 10 years. The program provides grant and 0% interest loans to local governments to replace/improve roads, bridges and sewer lines and has provided over \$700,000/year for local projects with no additional tax increases to the citizens of Auglaize County. Even though these funds will only provide only a small percentage of the funding needs, it is imperative this issue pass. Over a dozen large span bridges have been replaced in Auglaize County over the past 28 funding rounds and without the OPWC grants, those bridges would definitely have restricted load limits or be closed. Every township, village and city in this county has received much needed dollars from this program for infrastructure improvements. I am asking for your support this upcoming May to pass this bond issue.

## 2013 BRIDGE/CULVERT REPLACEMENTS

Location(Road)	Description/Span/Length	Cost
<b>COUNTY MANUFACTURED CONCRETE BEAMS</b>		
Townline Kossuth S/Lock 14	Two Span 27' & 15' Beams	\$ 91,979
Amsterdam East of Tri-Twp.	Two span 25' & 15' Beams	\$ 62,449
<b>COUNTY MANUFACTURED 3- SIDED CONCRETE BOXES</b>		
Townline Lima N/Fryburg East	44 lin. ft. 10' x 5' box	\$ 34,890
Vogel Rd. E/Townline	44 lin ft. 10' x 7' box	\$ 41,722
Winner Rd. East of Mercer line	52 lin. ft. 14' x 7' box	\$ 44,627
Winner Rd. @ Mercer line	60 lin. ft. 14' x 7' box	\$ 50,045
Fryburg East/ East of Townline	44 lin. ft. 10' x 5' box	\$ 35,924
Fairmont West of SR# 196	44 lin. ft. 10' x 5' box	\$ 38,941
Boundary north SR# 67	60 lin. ft. 14' x 7' box	\$ 51,090
<b>PURCHASED PRESTRESSED CONCRETE BEAMS</b>		
Salem Noble over 6-mile Creek	66' long x 28' wide deck	\$169,500
<b>LARGE DIAMETER CULVERTS</b>		
66A north SR#66	40' of 48" diameter & 240' of 18" diameter pipe	\$ 17,200



Seven smaller structures were replaced in 2013 using county manufactured concrete three-sided boxes. Since the program began in 1997, a total of 73 structures with 10 feet to 14 feet spans have been set. The upper left photo is a low profile 10' x 5' box with a poured concrete floor being placed on Townline Lima just north of the Fryburg East. This box along with one to the southeast on Fryburg East were installed in conjunction with the Huebner petitioned tile ditch project where landowners are having 5,700 feet of 18" and 24" diameter subsurface tile installed at an assessed cost to them of \$179,853. Two 14' x 7' three-sided boxes were set on Winner Road just east of the Mercer County line. The upper right photo shows one of the boxes set on precast footers, waterproofing membranes placed on the joints and the crew grouting the sections into the footer.



## **2013 PETITIONED DRAINAGE PROJECTS**

Along with the engineering, design and inspection of the numerous road and bridge improvements outlined in this report, 2013 was one of busiest in terms of engineering for petitioned ditches. Miles of century old subsurface tile mains are failing resulting in numerous petitions being filed with the County Commissioners and Auglaize SWCD. Our office performs all aspects of the petitions with the commissioners includes: surveying; design; preparation of plans; assessment determination; presentations at the public hearings; preparation of the bid documents and contracts; inspection and certification of payment to the contractor.



Above photo shows a trencher placing 15" diameter tile on the Klosterman Ditch in Pusheta Township. Due to the excessive depth at this particular location (8 feet), the contractor had to remove two feet of soil prior to the installation. The polyethylene pipe is replacing a clay tile installed through a petition in 1905.

### **COUNTY PETITIONED PROJECTS INSTALLED IN 2013**

Klosterman Ditch in Pusheta Township – 4,310 feet of 6" through 18" tile; Project Cost = \$ 69,773

Headapohl Ditch in Washington Township – 5,724 feet of 8" through 18" tile; Project Cost = \$73,431

Evans Ditch #2 in Clay Township – 1,160 feet of 15" tile; Project Cost = \$ 32,954

### **PROJECTS APPROVED FOR 2014 CONSTRUCTION**

Gutman #3 Ditch in Clay Township – 4,120' of 15" through 18" tile; Project Cost = \$ 64,980

Huebner Ditch in Clay & Pusheta Townships – 5,702 feet of 18" & 24" tile; Project Cost = \$179,853

Wheeler Ditch in St. Marys Township – 1,900 feet of 15" and 12" tile; Project Cost = \$ 33,222

Mackenbauch Ditch in Noble Township – 800 feet of 8" tile; Project cost = \$ 13,555

Dearbaugh Ditch in Clay Township – 2565 feet of 24" tile; Project cost = \$ 87,341

### **EMPLOYEE ACHIEVEMENTS**

Annually several counties in the area come together in late fall for a snow plow rodeo, equipment competition and OSHA training. Chad Kohlrieser was 1<sup>st</sup> place in the backhoe and Scott Sidener obtained a 1<sup>st</sup> place in the skid loader competition. The team of Bowersock, Kohlrieser, Snider and Schmerge came in second in the snow plow team event (photo below).



Bottom Row L to R: Mike Bowersock; Kevin Snider; Scott Sidener  
Top Row L to R: Chad Kohlrieser; Mike Schmerge

## **CURRENT EMPLOYEES**

Just prior to Christmas each year, personnel from the Highway, Sanitary and Tax Map Departments set down together for a meal together (weather permitting). Seems like once a decade we take employee photos and it was time. Shown below are the current staff members of those three departments organized by years of service.



**0 TO 10 YEARS SERVICE (ABOVE PHOTO):** front Row L to R: Thad Hemleben; Katie Ruck; Andrew Baumer; Jesse Hein.  
Back Row L to R: Tim Rostorfer; Jamie Turner; Seth Rohrbauch; Nick Piehl; Scott Sidener. Absent was Chad Scott



**10 TO 20 YEARS SERVICE (ABOVE PHOTO):** Front Row L to R: Kurt Rodeheffer; Dustin Kohlrieser; Jeff Steinke; Kevin Snider. Back Row L to R: Tony Drexler; Denny Steinke; Toby Lee; Mike Schmerge  
Absent was Chad Myers



**20 to 30 YEARS OF SERVICE (ABOVE PHOTO):** Front Row L to R: Ronette Kill, Clay Rodeheffer, Brett Fledderjohann; Back Row L to R: Kim Weiler; Gary Kuck; Mike Bowersock; Chad Kohlrieser; Mike Etzkorn; Absent were Howard Bair; Mary Lou Hume; Randy Cummins; Fred Wierwille; Denny Lhamon



**OVER 30 YEARS OF SERVICE (ABOVE PHOTO):** Front Row L to R: Doug Reinhart; John Jauert; Dan Bennett. Back Row L to R: Bill Piehl; Kevin Schnell; Rick Miller; Steve Rimmer.