

# 2018 AUGLAIZE COUNTY ENGINEER’S ANNUAL REPORT

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

One of the numerous mandates within the Ohio Revised Code is for the County Engineer to provide to the County Commissioners a status of the infrastructure under the Engineer’s jurisdiction. Whether or not this is a mandate, I feel such an annual report is imperative to keep the citizens of Auglaize County informed pertaining to: budgetary items; costs associated to the improvements completed during 2018 and the overall condition of our roadways, bridges and drainage systems. It is my belief that this report is not just for the Commissioners but needs to be provided to the residents of the county. In order to keep costs in line, I and my staff develop the report which is printed locally and then distributed countywide as an insert through our local newspapers for just \$ 0.27 per copy which is less than ½ the cost of a stamp.

One of the keys to the success to many of this departments roadway/bridge improvements is due to the cooperation of the adjacent landowners. In order to properly provide the necessary drainage and safety shoulders property owners this past year allowed our crews to work outside the road right-of-way and on private property on numerous occasions. This cooperation reduced the overall cost of the improvement by not confining our crews and allowed the safety improvements to extend beyond the highway easement, resulting in a much safer roadway for everyone. Special “THANKS” to those many landowners.

Special “THANKS” to the employees at the Highway/Engineering Department for their efforts during this past year. Even with stagnated income, through a more efficient operation of the department, this report outlines a very successful 2018 as we strive to make our highways safer for the citizens of Auglaize County.

## ROADWAY IMPROVEMENTS



One of the safety improvements completed by County crews in 2018 was the re-alignment of the intersection of Dicke Road with Bremen Knoxville (left photo). Prior to the relocation the intersecting angle of the two roads made it difficult for those stopped on Dicke Road to see oncoming traffic, especially for semi, panel truck and school bus traffic. The new alignment provides for a perpendicular positioning and adequate radii for truck traffic. Special thanks to the German Township Trustees for their monetary assistance.

**WINTER SNOW/ICE REMOVAL:** The winter of 2017-18 seemed to never end with the first event occurring on December 9<sup>th</sup> and the last time trucks were dispatched was March 21<sup>st</sup>. A total of 3,892 tons of 1:1 salt/sand mixture (1,946 tons of pure salt) along with 9,730 gallons of salt brine/beet juice was applied to the County’s 350 mile system on 36 separate storms. Several icing events made the salt consumption the 2<sup>nd</sup> highest total in 33 years.

**RESURFACING WITH HOTMIX:** The price per ton of hotmix in place went to a record \$83/ton in 2018 which is up from \$47.50 per ton in 2006, a 75% increase. During that same period of time, the Highway Departments budget increased just 5.3%. Currently hotmix resurfacing one mile of roadway, 20’ in width at 1 ¼” depth costs \$ 69,100 with \$83/ton asphalt. Due to the fact the cost of materials has far outpaced the income; only 6.4 of the county’s 350 mile highway system saw a new mat of hotmix in 2018 which equates to a 54 year rotation.

### 2018 Hotmix Resurfacing

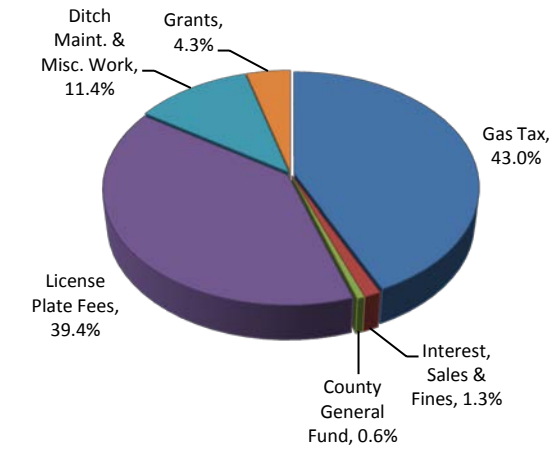
Road Name	Location	Tons/Hotmix	Cost
Santa Fe Line	Fairmount to Allen County Line	1,226	\$ 107,382
McBeth	SR#33 to Logan County Line	1,571	\$ 129,741
Wapak Cridersville	Water Street to Infirmary	565	\$ 46,786
Williams	Rapp to SR# 197	1,524	\$ 124,854
St. Marys River Rd.	SR#116 north to SR#33	278	\$ 22,733
		5,164 tons	\$ 431,496

CR#25A throughout the entire county (unincorporated areas only) is planned for resurfacing in 2019. A sewer camera was used to inspect all the storm sewers crossing under the pavement. In 2018 the department began the replacement of all sewers that were deteriorated and failing. The photo to the right shows the replacement of both a 12” diameter subsurface tile main and a 15” overflow pipe 2 miles south of Wapakoneta. County crews had the pavement cut and pipe with catch basins delivered to the site the day before the closure. At 8:00 a.m. 25A was closed to traffic, both pipe installations were made, excavated material hauled away, trench backfilled and pavement repaired prior to 3 p.m. that same day opening traffic through the site.



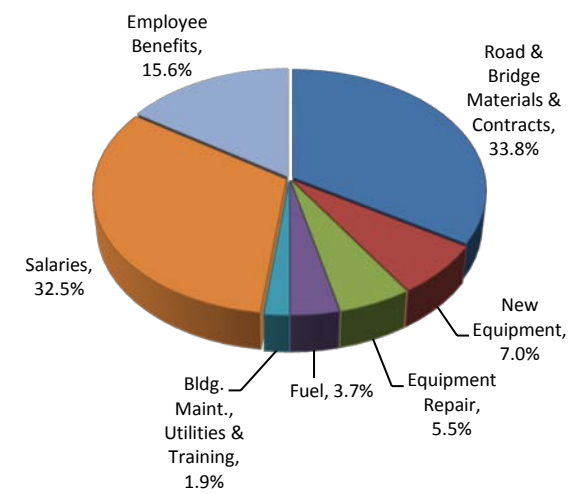
**MAINTENANCE IMPROVEMENTS:** With the shortage of funding, a more intense effort is being made to maintain the integrity of the pavements until funds can be provided by the Ohio General Assembly for hotmix resurfacing. Multiple “tools” in our maintenance “toolbox” for 2018 includes the following: 22 miles of County roads were full sealed and 22.6 miles strip sealed using 161,190 gallons of liquid asphalt and 4,870 tons of cover aggregate for a material cost of \$ 367,347; the full seal program was followed with a fog seal, a second application using 23,440 gallons of liquid asphalt at a material cost of \$ 26,959; a durapatch machine applies 180° asphalt (13,240 gallons) mixed with limestone aggregate (330 tons) on the pavement where severe deformation occurred; 21,700# of a polymerized asphalt, heated to 300° was squeegeed into surface cracks; 9,780’ of failing storm sewers were replaced within the county road right-of-way along with 81 new catch basins. Other annual maintenance measures included new centerline striping on 178 of the county’s 350 miles at a cost of \$ 47,771.

## 2018 RECEIPTS



82.4% of the income for 2018 was generated from the Gasoline and License Plate user fees. Since 2006, those sources of income has increased just 5.3% which was far outpaced by the inflation cost of construction materials (see examples below). Only 0.6 of one per cent of the income comes from real estate taxes. Ditch maintenance and construction projects for the township trustees and villages has now increased to 11.4% which is much needed to help overcome the stagnant revenue from the highway user fees.

## 2018 EXPENDITURES



ITEM	2006	VS. 2018	% INCR.
Hotmix/ton	\$ 47.50	\$83.00	75%
Aggregate/ton	\$ 5.65	\$11.25	99%
Concrete/yd.	\$ 80.00	\$106.00	33%
Liquid Asphalt	\$ 1.15	\$ 1.80	57%
Tandem Dump Truck			
With plow	\$103,146	\$165,617	61%
Plastic pipe/ft.	\$ 18.05	\$20.56	14%
Bridge deck cu/ft	\$16.00	\$21.55	35%
Excavator	\$130,700	\$186,860	43%



Denny Steinke retired in March with over 22 years of service with Auglaize County. He was an excellent equipment operator and could skillfully run most any piece of equipment the county had. The majority of his time was spent in the backhoe installing hundreds of pipe installations over and around a multitude of buried utility lines. It is estimated Denny logged over 10,000 hours in the backhoes while serving the County. Special “THANKS” to Denny for his many years of dedication and best wishes in his retirement.



2018 BRIDGE IMPROVEMENTS

As we wrap up 2018 we can still say that out of our 350 bridges we do not have a structure with a load limit restriction. Statewide there are county maintained bridges that are rated structurally deficient or functionally obsolete. Hopefully the Ohio General Assembly will provide increased funding in 2019 so we can maintain that status. The five person bridge crew completed the following multiple types of bridge repair/replacement: two 3-sided concrete boxes; repaired two bridges resulting from accidents with county beams; three new bridges using county concrete beams; installed one steel beam bridge deck; placed a waterproofing membrane and new wearing surface on three bridges and installed a large elliptical concrete pipe.



Above left photo shows 32’ long county manufactured beams on Wrestle Creek Road prior to the placement of a 6” deep concrete poured deck. Upper right photo shows the county crews placing a similar 6” deck over 27’ long county beams on the Heitkamp Road. This 6” extra depth provides for a total beam depth of 20” and the needed load carrying capacity for today’s highway loadings.

<u>ROAD NAME</u>	<u>TYPE OF WORK/STRUCTURE</u>	<u>COST</u>
Thrush	14’ x 7’ three sided concrete box	\$ 51,822
Swartz	14’ x 5’ three sided concrete box	\$ 41,281
Townline Kossuth	Repaired one 18’ concrete beam	\$ 4,737
Heitkamp	New Bridge with 27’ county beams	\$ 90,563
North Corp.	New Bridge with 25 ½’ county beams	\$ 75,546
Lock Two	Repaired one 31’ county beam	\$ 6,990
Townline Lima	New 50’ steel beam deck	\$ 75,436
Wierth Ditch	14’ x 5’ three sided box	\$ 19,767
Wrestle Creek	32’ county beams/deck only	\$ 60,642
Harrod	48” x 76” elliptical concrete pipe	\$ 28,153
Waterproofed four bridge decks with new wearing surface		\$ 33,163
66A	66’ prestressed beams (deck only)	\$253,089*

Total for Labor, Equipment, Material & Contracts = \$741,189.



The above photos are two of the three sided box installations manufactured and installed by the county crews. The left photo is on the Thrush Ditch that drains five hundred acres and thus requires 7’ deep legs to provide the needed capacity. Upper right photo on the Swartz Road is a similar box with just 5’ legs (three foot opening) and a concrete floor due to a much smaller 100 acre watershed.



The bridge on 66A over Six Mile Creek had serious issues with deterioration of the concrete deck to the point where it soon was to be posted for load limit restrictions. Six years ago, as its condition became more critical, an application was made for federal funding due to the excessive cost of a long span structure. Finally after six years of programming through federal gas tax funding, the old deck was removed, abutments rehabilitated and new concrete deck with waterproofing was installed for \$ 253,089\* of which only 20% was local funds. The above photo shows the beams lined up on 66A in preparation for placement.

2018 SAFETY/DRAINAGE IMPROVEMENTS

Along with the multiple maintenance improvements this department does plan to work on roadside safety projects throughout the summer. Just a few of the shoulder widening locations include Hardin Pike (left), Wapakoneta Criddersville just east of Water Street and North Gossard Road where an adjacent hill was removed and that material used to widen nearby safety shoulders.



The permanent maintenance program taking care of drainage improvements approved by the Commissioners and Soil & Water grows with every approved project. Along with the 350 miles of roadways and 345 bridges, this department is now maintaining 370 miles of open channels, subsurface tile mains along with annual logjam removals on the St. Marys and Auglaize Rivers. The upper left photo shows the excavator in the background removing a logjam (estimated to have 300 trees) in the St. Marys River approximately 1/3 mile north of Glynwood Road. That excavator is setting on the jam in the middle of river and is four feet above water level. In order to subsidize our budget we have agreed to assist some of the other governmental agencies and be reimbursed for installing some of their storm sewers. Upper right photo is the replacement of the Wierth tile ditch, originally installed in 1899 through New Bremen. 1,900 feet of 15” and 18” deteriorated clay tile was replaced with smooth walled polyethylene piping.



PETITIONED DITCH PROJECTS: Two projects petitioned through the Commissioners and designed and inspected by this department were the Fisher #2 and the Blasé #2. The Fisher #2 in Salem Township (upper left) included the installation of 1000 feet of 24” diameter seal plastic tile through a wooded area and 800 feet of open channel at its outlet at an assessed cost of \$ 38,000. The Blasé #2, upper right photo, is located in St. Marys and German Townships and included the installation of 10,455 feet of 6” through 24” diameter plastic pipe. The landowners within the 430 acre water shed were assessed \$ 167,300. Currently there are ten new projects petitioned through the commissioners with this office in charge of the hearings, surveys, plan design, assessments and construction inspection.



DRAINAGE EXPO: In August the department hosted the 2018 Ohio Drainage Expo at the fairground with approximately 100 attendees including county highway departments, soil and water conservation districts, contractors, suppliers and equipment suppliers. Nine vendors supported the expo (upper right) exhibiting their products used in all aspects of drainage improvements. Upper left photo depicts where attendees were taken to a drainage channel just south of town where vendors had test plots showing the effectiveness and proper application procedures for applying herbicides for broadleaf weed and brush control. Special thanks to the fairgrounds, the Buckeye Antique Tractors Association and Klosterman farms for their assistance in making the Expo a success.