

2020 AUGLAIZE COUNTY ENGINEER’S ANNUAL REPORT

By: Douglas Reinhart, P.E., P.S., Auglaize County Engineer

Even though the Ohio Revised Code mandates this report annually to the County Commissioners, I have always felt it was necessary to inform all the citizens of this county of the work accomplished each year by this department with their tax dollars. It enables you to associate a cost to the many improvements you see our crews complete and it also sets a standard each year for road, bridge and drainage improvements that we are challenged to exceed the following year.

This is hopefully my 37th and last annual report as your County Engineer. It has truly been an honor to have served the citizens of this county and I have a lot of “THANK YOU’S to hand out. The first one goes to my wife Trudie. She has been a saint all these years putting up with the phone calls, the crazy hours and my rantings about how meteorologists can’t predict the weather. Whether its snow/ice control or building a road/bridge improvement, the weather dictates how successful we are. We have a bad day when the weather does not perform the way it was predicted that morning. My second “THANK YOU” goes to the employees here at the department. They are so skilled and dedicated and make me look good each and every year. My last and certainly not my least “THANK YOU” goes to the citizens of Auglaize County for the support you have given to me and this entire department during my tenure. Property owners adjacent to our projects have constantly allowed us to work off the dedicated road right-of-way in order to provide a safer roadway shoulder, flatter sideditch slope and/or better drainage for the project and their property.



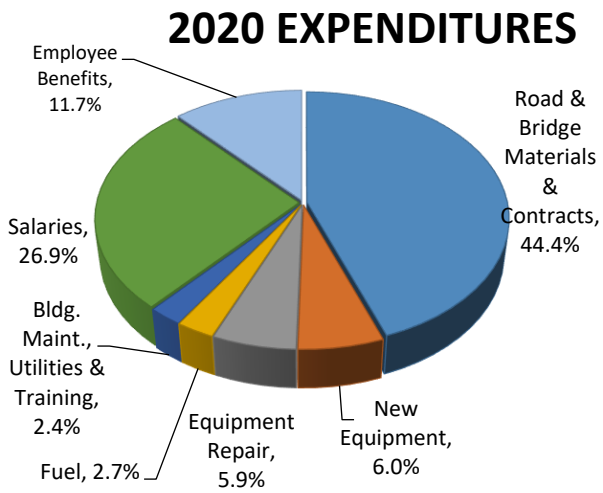
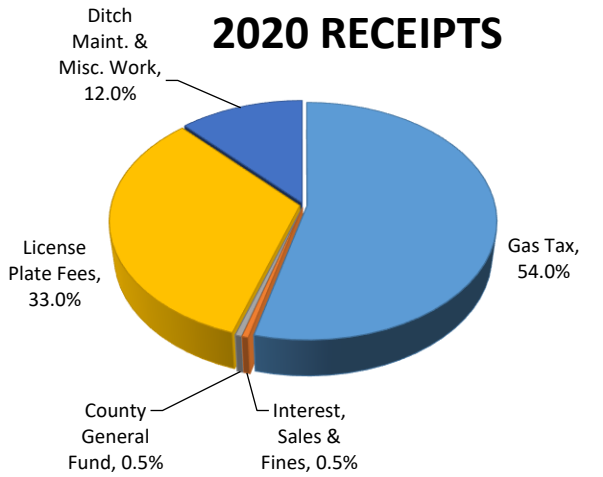
The photo to the left is the completed structure on Lock Two Road just to the west of the Shelby County line and northeast of New Bremen. A 60+ year old steel multi plate pipe was replaced using precast county manufactured concrete beams. Since the program of casting our own bridge beams in 1967, over half of Auglaize County’s 347 bridges have been either completely replaced or rehabilitated using this design. Between snow and ice events, crews are bending, tying reinforcing steel and casting bridge components. It is not uncommon to pour 400 cubic yards of concrete over a winter in preparation for the upcoming construction season.

To hold the office of County Engineer in Ohio requires that person to hold both a Professional Engineer and Professional Surveying licenses (dual) due to both the many engineering and surveying requirements mandated by the Ohio Revised Code. To obtain both licenses an individual must complete all of the following: Graduate with a degree in Civil Engineering from an accredited college; pass two eight-hour exams in engineering given by the State Board of Registration while completing four years of apprenticeship; pass two eight-hour exams after four years of apprenticeship in surveying. Therefore, after graduating college with an engineering degree, an individual is required to pass 32 hours of testing and complete a minimum of eight years of apprenticeship to be allowed to take the final exams. Because of these stringent requirements, of the 11.7 million persons in Ohio, there exists 800 dual licensed individuals with 88 being County Engineers.

In some Ohio counties, when a county engineer decides to leave office, a statewide search is made for a replacement due to the lack of qualified individuals. I am pleased to let the citizens of Auglaize County know, as I soon step down, Andrew Baumer, P.E., a Minster graduate is soon to take his surveying final exam, thus qualifying him to hold the office. Andrew has worked for this department beginning as a summer intern while attending Ohio Northern University and then full time for the past eight years. He currently is this county’s Bridge Engineer and Assistant County Engineer. He is very knowledgeable concerning the roads, bridges and drainage needs of this county and has the full support of the employees here at the department. He not only is a brilliant young man, but also has common sense when tackling the daily challenges of this office. He, his wife and three children live just north of Minster. I could not be more pleased that Andrew wishes to be your next County Engineer. All that I ask is that the citizens of this county support him as you have me.

SNOW AND ICE CONTROL: Trucks were first dispatched during the winter of 2019/2020 on November 12th and last went out to treat the 350-mile system on February 28th, totaling 19 times throughout the winter. A total of 2,490 tons of a 1:1 mix of salt and sand, treated with 10,600 gallons of combination of beet juice and salt brine during those 19 events. Total material cost for the winter amounted to \$ 138,365.

PAVEMENT MAINTENANCE: Due to the fact income had stagnated for the past decade and a half while the price of hotmix asphalt more than tripled, a program to maintain the integrity of the pavement surface is imperative. **Chip and Seal:** 2020 saw 42.7 miles of roadways full and strip sealed with 153,300 gallons of liquid asphalt and then covered with 4,045 tons of #8 limestone to provide a new wearing surface. This aggregate was then sealed with a second “fog” seal to eliminate all the dust and loose stone and provide an additional crack sealant. Total material cost for all three applications was \$13,300 per mile while paving that same mile with hotmix asphalt in 2020 was \$ 75,380. **Crack Seal:** 4,800 lbs. of polymer-modified asphalt was heated to 300° and squeegeed into longitudinal and transverse cracks due to pavement surfaces oxidizing and becoming brittle.



ITEMS TO NOTE CONCERNING THE 2020 BUDGET
INCOME: In recent years, gasoline tax receipts accounted for just over 40% of the total income. With the aid of an increase by the Ohio General Assembly in the 2nd half of 2019, fuel taxes now represents 54%. With that added funding, 2020 saw 28.65 miles of roadways resurfaced with hotmix (@ \$ 75,300/mile) versus the past 7-year average of 8.7 miles per year.
EXPENDITURES: The purchase of new equipment has averaged just 6% of the annual budget for the past several years. What has been annually creeping larger is the percentage going to equipment repair, which is 5.9% in 2020. The number represents just parts only and not the labor costs and down time for those repairs. The equipment looks great but that is only because the mechanics and employees have done well caring and maintaining what the taxpayers have provided. 58% of all trucks and 53% of all construction equipment are in excess of 11 years of age. It is apparent that equipment replacement will need a larger percent of the budget. Fuel consumption for the fleet of trucks and construction equipment represents just 2.7% of the budget. Even with a fuel tax increase, during 2020 gasoline and diesel fuel was one to two dollars cheaper per gallon than just a few short years ago.



A roadside safety/drainage improvement (above) was completed by county crews along the west side of Townline Lima just to the south of Buckland Holden. The existing roadside ditch was relocated providing a safety shoulder and flatter side slopes for traveling safety and maintenance. The south end of this improvement will see a large 3-sided county manufactured concrete box installed to alleviate constant roadway flooding. Special Thanks to the owner, Franklin Shaw in allowing us to obtain the needed ground and to Harrod Family Farms for not farming several acres adjacent to the layover so we had adequate room to build the improvement.



Along with County roadway projects, the department widened a half mile of Enneking Road for the Jackson Township Trustees. Recycled asphalt grindings were placed 8” deep and two feet wide on each side of the existing pavement (left photo) and compacted to transform a 16’ wide pavement to 20’. Material cost of the grindings used was at \$10/ton versus new base hotmix at \$75/ton.

2020 Hotmix Resurfacing Program

With the influx of additional funding from the 2019 fuel tax, 28.5 miles of roadways were resurfaced in 2020 versus the past seven year average of just 8.7 miles per year. More miles were anticipated early in the year but COVID19 greatly reduced miles driven and fuel consumption for several months in the spring and early summer thus reducing the January 1st estimated incomes by just over \$250,000. The following is the list of those roads, their length, tons of hotmix applied and the corresponding cost for that individual project. The total cost includes the berm stone placed by the County.

Road Name	Length	Tons of Hotmix	Cost
Holden Line	1.5 miles	1,174 Tons	\$ 105,442
Fairmont	4.06	3,283	\$ 295,292
Gant	1.0	801	\$ 73,153
Maier Barber	4.0	3,373	\$ 301,395
Erie	0.6	486	\$ 41,845
Lock Two	4.0	3,220	\$ 273,870
Winner	1.13	896	\$ 75,672
Osterloh	1.13	896	\$ 75,522
Moulton Angle	1.35	1,086	\$ 96,762
St. Marys Kossuth	2.0	1,698	\$ 150,998
Gutman	2.73	2,175	\$ 192,340
Glynwood	1.5	1,506	\$ 139,207
Buckland Holden	<u>3.65</u>	<u>3,646</u>	<u>\$ 338,230</u>
TOTALS	28.65 MILES	24,240 TONS	\$2,159,729



Photo left shows the bridge crew setting the 26’ long precast county beams (cast in February) on the Auglaize Hardin County line. Nine beams will provide for a 27’ wide deck. Thanks to Mike Smith, Hardin County Engineer for assisting with the cost of this structure.

2020 Bridge/Culvert Program

Road Name	Type of Structure	Cost
Hardin Co. Line	26’ span County precast beams	\$ 94,229.
Lock Two Road	26’ span County precast beams	\$ 95,458.
Stiles Road	24’ span County precast beams (rehabilitated existing abutments)	\$ 61,252.
Blank Pike	40’ of 14’ x 7’ precast concr. box	\$ 56,372.
Eisley	40’ of 36” elliptical concrete pipe	\$ 12,574.
Santa Fe Line	64’ of 14’ x 7’ precast concr. box	\$ 58,030.
Wapak Buckland	23’ span County precast beams (outside beams only)	\$ 11,202.
Moulton Ft. Amanda	64’ of 36” elliptical concrete pipe	<u>\$ 15,054.</u>
Labor, Equipment & Material Total =		\$ 404,171

Photo to the right is one of the two 3-sided concrete boxes manufactured and installed during 2020 on the Santa Fe Line over the St. Joe Ditch. 16 of the four-foot wide sections were used along with precast concrete footers and headwalls. The installation replaced a 60-year-old multi-plate steel pipe that was exhibiting structural issues. The bridge sections were cast at the County Garage in February, which consumed a total of 105 cubic yards of concrete



ROADWAY DRAINAGE IMPROVEMENTS



During 2020 county crews installed 8,885 feet (1.7 miles) of smooth walled polyethylene pipe within the road right-of-ways replacing century old subsurface clay tile along with 81 new catch basin inlets. The upper left photo shows such an installation and how premanufactured fittings can be utilized to make turns and connections. All fittings are water tight to prevent the intrusion of tree roots. Also during this past year 896 lineal feet of reinforced concrete pipe was installed to allow surface drainage to pass through the roadway. The upper right photo shows an elliptical pipe installed used when we cannot obtain the minimum of 12” of cover using a round pipe. This installation also used our precast three sided boxes laid on its side to create a “drop box” for surface water to enter the pipe and not erode the nearby sideditches or adjacent fields. At least two days of labor were saved using this precast piece versus forming, pouring, curing and then pulling forms if this same installation was built at the site.

PETITIONED DITCH DRAINAGE PROJECTS

Special thanks to TJ Place, Drainage Technician for making 2020 was one of our busiest years for petitioned ditch drainage projects. He performed all phases of the work this department is required of including: With the use of GPS surveying equipment, he surveyed; designed; drafted construction drawings; calculated assessments; assisted with the viewings and hearings; and then inspected the installations and certified payments to the contractors. Listed below are the names, locations, work completed and total assessments paid by the benefitting landowners

Ditch Name	Twp. Location	Work Completed	Cost
Accuntius	Pusheta	15,370’ of 24”,18”, 12”, tile	\$291,461.
Auglaize Acres	Duchouquet	5,040’ of 18”, 15” 10” tile	\$ 60,551.
Dearbaugh #2	Clay	3,820’ of 15” , 8” tile	\$ 44,621.
Gross Jt.	Pusheta	12,965’ of open channel	\$ 145,000.*
Haruff#2	Union	972’ of 15” and 12” tile	\$ 18,740.
Shindollar	Salem	748’ of 15” and 12” tile	\$ 15,644.
Woehrmeyer	Jackson	12,990’ of open channel	\$ 10,815.
Spallinger	Moulton	1,830’ of 18” and 6” tile	\$ 21,230.*
Woodland Hills	Duchouquet	2,910’ of 18”, 10”, 6”. 4” tile	\$ 36,215.*

*Projects to be completed in 2021



Above left photo is the 15” and 12” diameter tile being installed on the Shindollar ditch which is along the south side of Deep Cut Road in Salem Township. The century old existing clay tile drained not only agricultural ground but also multiple homes and was plugged with tree roots, was replaced with a sealed smooth walled polyethylene pipe. The Auglaize Acres project (upper right photo) was comprised of replacing a 115-year-old clay tile just north of Wapakoneta on County owned property. Having to design and work near twin high-pressure gas lines made the design quite complicated. Special thanks to the City of Wapakoneta for assisting with the project.



The Accuntius Joint County ditch with Shelby County replaced a failed clay tile originally installed in 1904. The photo to the left shows the contractor crossing Winemiller road and the 24” diameter tile strung out for placement with a trencher. This 2.9-mile tile project was by far the

most expensive project of 2020 with many assessments costing over \$700/acre for many of those in the 472 acre watershed.