



County Engineer

**DELAWARE**  
**COUNTY** *Ohio*

# Delaware County Engineer's Office 2020 Annual Report

**March 1, 2021**

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**Chris Bauserman, P.E., P.S.**  
Delaware County Engineer



**To the Citizens of Delaware County:**

I respectfully present the Delaware County Engineer's 2020 Annual Report for your review. This report serves to summarize the activities of my office over the last year.

As your County Engineer, I have the pleasure of serving as a steward of the county's roads, bridges and drainage systems. I take seriously my responsibility to keep you informed and up-to-date on the status of our infrastructure and all that we are doing to keep it functioning safely and efficiently.

I believe that most Delaware County residents understand the critical impact of our federal, state and local highway infrastructure upon our residential and business community. All of us depend upon the safety and efficiency of our infrastructure network on a daily basis – whether it is our everyday commute, or paying a visit to our friends and family. Our roads ensure the health and success of our economy by ensuring easy access to local businesses, and timely delivery of mail and parcels. Our roads also keep us safe by allowing first responders to reach emergencies quickly.

Over the past 25 years in serving as your County Engineer, I have had the sincere pleasure of helping to deliver the much needed improvement and expansion of our local roadway and bridge infrastructure. In 2020, we completed \$38 million of upgrades to our network, including resurfacing and repairing 118 miles of pavement, replacing and rehabilitating 3 bridges and 18 culverts, upgrading 4 intersections and expanding over half a mile of roadway.

Most people aren't aware of the months and years of planning and engineering that takes place before a road or drainage project ever makes it to construction. Our staff of engineers, surveyors, technicians and other transportation professionals spend many hours designing, planning, managing and preparing projects before they become reality. We strive to make our work zones safe, and to minimize disruption to the traveling public when we work on our roads. We have been able to forge strong relationships with our fellow transportation agency partners and our businesses in Delaware County to leverage other public and private funds to upgrade existing roads and build new infrastructure to support our current and future residents. And our operation and maintenance staff plays an important role in keeping our current roads safe through monitoring road conditions and performing regular maintenance to keep our highways open and traffic flowing.

I hope you take a few moments to review this report and to visit our website at [www.delawarecountyengineer.org](http://www.delawarecountyengineer.org) for additional information about our office. As always, your feedback is encouraged and welcomed, so please feel free to contact me at any time with any questions or concerns surrounding the operations of the County Engineer's office, and the status of our projects. Thank you, and I wish you a very successful and prosperous 2021!

Respectfully yours,



Chris E. Bauserman, P.E., P.S.  
Delaware County Engineer

## GENERAL INFORMATION

As of the end of 2020, Delaware County has an estimated population of about 214,000, per the U.S. Census Bureau, with an estimated 74,520 housing units at a median value of \$293,900 per unit.

Delaware County, founded in 1808, measures 457 square miles, with four (4) major reservoirs that serve to supply drinking water to the surrounding areas. The County is comprised of two (2) cities (Delaware and Powell), and includes portions of the three (3) other cities; Columbus, Dublin, and Westerville. Delaware County has five villages (Ashley, Galena, Ostrander, Shawnee Hills and Sunbury, and eighteen (18) townships (Berkshire, Berlin, Brown, Concord, Delaware, Genoa, Harlem, Kingston, Liberty, Marlboro, Orange, Oxford, Porter, Radnor, Scioto, Thompson, Trenton, Troy), and portions of Washington Township.



One interstate highway (I-71) and three (3) U.S. highways (US 23, US 36 and US 42) pass through Delaware County, and serve to provide for stable and effective county-wide travel.

## OUR COUNTY ENGINEER



Chris Bauserman has served as the County Engineer in Delaware County, since February of 1996. Prior, he served as Delaware County's Chief Deputy Engineer for seven (7) years. He has also worked previously as a project engineer in the construction and private engineering consulting industry.

Chris holds a Bachelor of Science degree in Civil Engineering from Ohio Northern University. He is active in local transportation issues, and has served as president of the County Engineers Association of Ohio (CEAO) and the National Association of County Engineers (NACE).

The Delaware County Engineer's Office provides many important services to the citizens of Delaware County, including maintaining 336 miles of roadway, 382 bridges and thousands of culverts, streams and ditches within the public rights-of-way. The office prepares construction plans, specifications and cost estimates for any needed improvements to the county roadway infrastructure.

As the County Engineer, Chris serves as the engineering advisor to 18 townships in Delaware County, assisting with township road maintenance and improvements. In addition, his office also inspects and maintains all bridges located on township and county roads, as well as maintaining traffic signals on any county roads that intersect other county or township roads. The Engineer's Office oversees the new commercial and residential construction projects in the unincorporated areas for conformance to public street construction standards, as well as enforcing the grading and erosion control requirements. His office also inspects all work conducted within public road rights-of-way by the local utility companies to ensure the safety of our residents and motorists.

The County Engineer is an elected official, serving terms of four years. Ohio law requires the County Engineer to be both a registered professional engineer and professional surveyor. In addition to the engineering responsibilities of the office, the County Engineer oversees the county Map Department which maintains the county tax maps, reviews surveys for property transfers, and creates subdivision lot numbers and street address numbers.

## Certified Road Mileage in Delaware County (Centerline Miles)

U.S. and State Routes	231.93 miles
County Roads	335.93 miles
Township Roads	638.48 miles

## 2020 Construction Projects

The Delaware County Engineer's Office completed a number of road and bridge construction projects during 2020, including both county and township funded projects administered by DCEO.

Road Name	From	To	Construction Cost (\$)
Africa Road	Cheshire Road	Jaycox Road	4,276,735
Cheshire Road	Lackey Old State Road	Africa Road	1,336,309
Graphics Way Ext.	Orange Point Drive	Menards Creekside	433,930
Liberty Road		Seldom Seen Road	985,567
South Old 3C	Mt. Royal Ave.	Freeman Road	6,567,507
<b>Total</b>			<b>\$13,600,048</b>

## Upcoming Projects

6 multi-year road construction projects were started in 2020 that will be completed in 2021 and 2022:

Road Name	From	To	Construction Start	Planned Completion
Hyatts Road	1/4 mile west of US23	1/8 feet east of US 23	June 2020	June 2021
East Powell Road	Old State Road	Bale Kenyon Road	August 2020	November 2021
East Orange Road	Post Office	Green Meadows Drive	August 2020	October 2021
Worthington Road	At Africa Road		October 2020	June 2022
Sawmill Pkwy.	At Hyatts Crossing		October 2020	June 2021
North Road	Peachblow Road	1/4 mile south	November 2020	August 2021



## Resurfacing Projects

The 2020 Annual County-wide Resurfacing Project was performed between May and October. Delaware County competitively bids out this project every year, working cooperatively with all local participating townships to resurface roadways throughout the county. In 2020, a total of 118 miles of roadway were resurfaced as part of \$6.1 million in total project costs.

### 2020 County and Township Totals

Location	Centerline Miles	Construction Cost (\$)
<b>County Roads</b>		
Delaware County Roads	47.50	\$2,966,255
<b>Township Roads</b>		
Berkshire	0.66	67,002
Berlin	12.22	370,021
Brown	10.24	174,626
Concord	3.41	193,639
Delaware	6.53	21,459
Genoa	2.99	114,936
Harlem	3.46	147,322
Kingston	2.60	40,649
Liberty	7.62	1,039,520
Marlboro	1.00	19,018
Orange	3.17	708,401
Porter	4.11	78,401
Scioto	1.51	14,946
Thompson	7.54	93,464
Troy	4.11	49,512
<b>Total</b>	<b>118.67</b>	<b>6,099,177</b>



## Ohio Public Works Commission

The County Engineer's Office partners with Delaware County Township's in securing additional funding for road projects through the Ohio Public Works Commission. In 2020, six (6) township projects were identified and accepted for 8.33 miles of road repair, and totaled over \$1.8 million in construction costs.



## Bridge and Culvert Construction Projects

In accordance with Sections 5591.02 and 5591.21 of the Ohio Revised Code, Delaware County is responsible for maintaining the 370 roadway bridges and over 1,000 culverts within County boundaries.

### 2020 County Workforce Bridge Projects

Road Name	Feature	Date Opened (2020)	Force-Account (\$)	Contract Portion (\$)
Kelly-McMaster	Pittman Ditch Bridge	9/11	72,365	10,950
Plantation Road	Big Walnut Creek Tributary	11/20	79,460	11,500
<b>Total</b>			<b>151,825</b>	<b>22,450</b>



**2020 County Workforce Culvert Projects**

<i>Road Name</i>	<i>Culvert Number</i>	<i>Date Opened (2020)</i>	<i>Force Account (\$)</i>
Berlin Station Road	91-0.220	2/3	5,123
Concord Road	129-02.690	10/28	74,174
Africa Road	021-07.580	5/18	13,951
Berlin Station Road	91-00.09	4/22	18,050
Hoskins Road	183-02.220	6/10	3,307
Hoskins Road	183-02.430	6/23	6,581
Harlem Road	017-04.820	6/23	6,581
Harlem Road	0217-04.710	6/17	9,732
S. Galena Road	034-00.320	7/07	4,488
Harlem Road	017-00.140	7/14	4,404
Harlem Road	017-03.500	7/21	8,905
Peachblow Road	098-02.344	7/21	21,379
Woodtown Road	023-03.540	8/11	4,732
Woodtown Road	023-03.650	8/12	3,494
No. Old 3C Road	024n-01.910	9/02	8,503
Taway Road	182-00.10	9/22	4,796
N. Old State Road	010-12.700	10/12	22,479
Kilbourne Road	065-07.280	11/17	4,577
<b>Total</b>			<b>\$225,256</b>

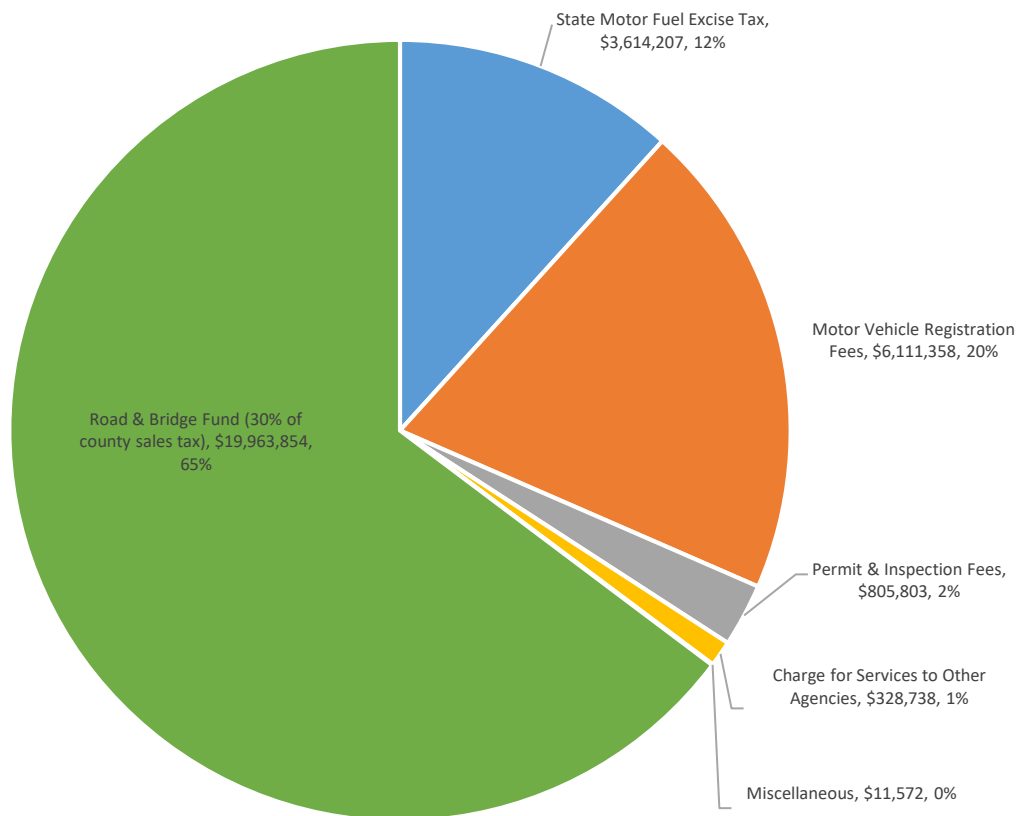


## 2020 Financials

### Revenues

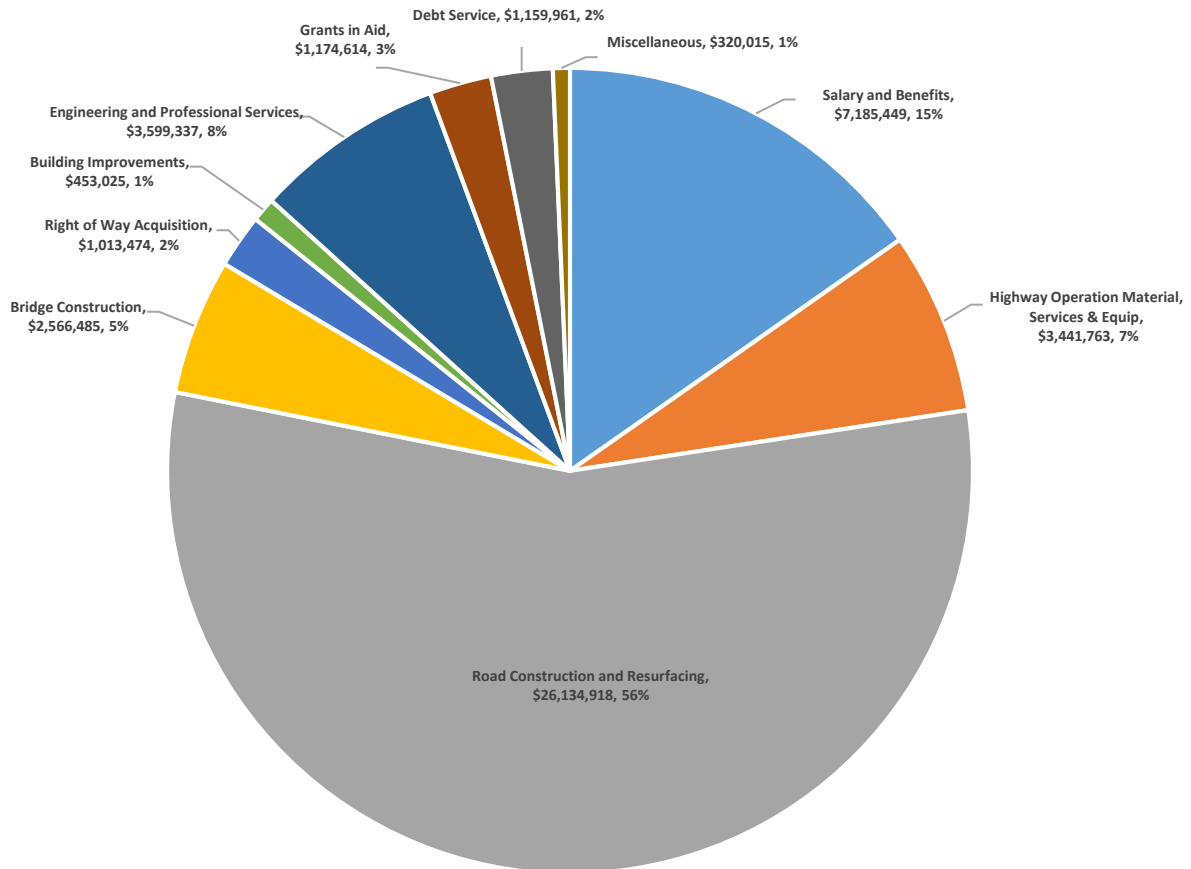
The County Engineer's Revenues come from 5 main sources:

1. A 30% share of the county's 1.25% sales tax
2. A share of the state motor fuel excise tax (\$0.385 per gallon gas and \$0.46 on diesel)
3. A share of registration fees for motor vehicles registered in Delaware County
4. Permits for work in the right of way, development review and inspection fees
5. Charges for services to other agencies (townships, villages, etc.)



## Expenses

The County Engineer's expenses fall into a number of different categories and are summarized in the following chart:



## County Engineer's Office Staff

The Delaware County Engineer's Office employs experienced, skilled and educated administrative, technical, engineering, and mechanical staff to fulfill all the necessary responsibilities that are required by the Ohio Revised Code. As of December 2020, the County Engineer's Office employed a total of seventy-five (75) full time employees.



## Administration

Contact: Lee R. Bodnar, Administrator

The Delaware County Engineer's Office administrative staff addresses the daily administrative, fiscal, organizational planning, public relations and information technology duties within the Engineer's office.

### Fiscal and Information Systems

The DCEO's administrative staff includes 2 accountants that handle the day-to-day fiscal duties of the office including accounts payable and receivable, payroll, budgeting, and forecasting.

The DCEO's Information Technology staff includes 2 IT professionals that work to keep staff equipped with the necessary computers, software and other devices to enhance productivity and improve DCEO's exchange of information with our customers.

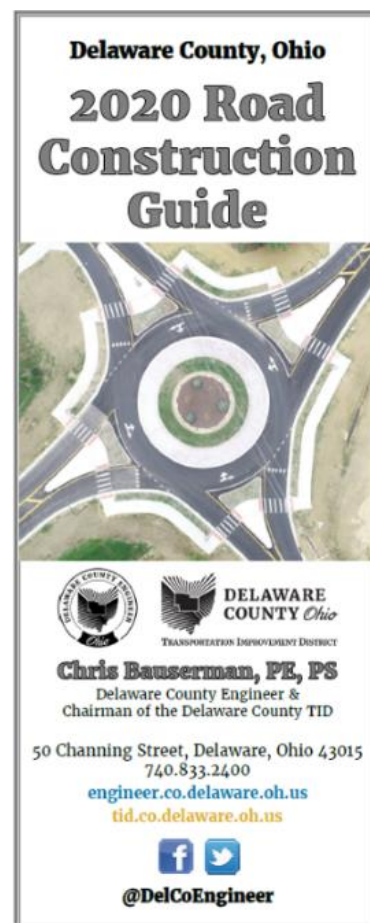
### Public Relations

The County Engineer's Office interacts with residents on a daily basis, responding to many phone calls, emails and letters with questions, comments, and suggestions regarding roadway safety, traffic congestion, road construction, and drainage issues. Each year, DCEO publishes information about road and bridge projects that are planned and administered by the Delaware County Engineer. The *2020 Road Construction Guide* was published in February 2020.

### Annual Township Road Maintenance Meeting

Section 5543.06 of the Ohio Revised Code requires that the County Engineer meet each year with townships in the county to discuss road maintenance and construction. The 2020 annual township road maintenance meeting was held on December 17<sup>th</sup> as a virtual meeting due to the COVID-19 pandemic restrictions. Some of the topics that were discussed:

- COVID -19 Service Procedures
- Local Road Repair Funding Opportunities
- Cooperative Purchasing Opportunities
- Highway Safety and Traffic Control Devices
- Local Force-Account Opportunities
- Upcoming County Roadway Projects
- Economic Development Projects



## Design

Contact: Ryan Mraz, Deputy Design Engineer

The DCEO Design Department employs a staff of 6 engineers, surveyors and technicians that manage the planning and engineering duties of the Delaware County Engineer's Office.

The Design Department prepares construction and right-of-way plans, specifications and cost estimates for County and Township road and bridge projects. 2020 was a busy year for the Department, with staff engineers completing 6 sets of construction and right-of-way plans for local road and bridge projects.

**In-House Designs Completed:**

DEL-2020 RIP	2020 Road Improvement Program
DEL-TR61-2.26	Lane Road Bridge Replacement
DEL-TR68-0.51	Blayney Road Bridge Replacement
DEL-CR91-2.72	Berlin Station Culvert Replacement
DEL-TR103-0.55	Kingsbury Road Bridge Replacement
DEL-CR34-0.14	S. Galena Road Culvert Replacement
DEL-Sawmill Outpost	Sawmill Pkwy. Turn Lanes & Outpost Improvements

**Bridge Inspection and Management**

Section 5543.20 of the Ohio Revised Code requires the County Engineer to annually inspect all bridges having a structure of ten (10) feet or more that are a part of the county highway systems, and all bridges on township roads that are outside of the municipal corporation limits. Section 5591.21 of the Ohio Revised Code further requires that the county maintain and keep in repair all the bridges that are on county and township roadways. Certain privately owned bridges, such as golf-cart pathways, that were constructed for private-use have supplemental agreements whereby the owner of the bridge is responsible for its maintenance.

Due to the importance of bridges to the safety of motorists, the Federal Highway Administration (FHWA) imposes strict requirements on the inspection and management of bridges. The National Bridge Inspection Standards (NBIS) and the Ohio Department of Transportation (ODOT) Manual of Bridge Inspection set the standard by which bridge inspections are performed. ODOT is required to annually report the conditions of all bridges on all public roads within the state to FHWA, and this report includes all bridges inspected by the local engineer's office. DCEO currently inspects 382 bridges every year and reports their condition to ODOT as the law requires.

**Assistance to Townships**

The County Engineer's Office serves as the road and bridge engineer for the eighteen (18) townships within Delaware County. Sections 5543.01 and 5543.09 of the Ohio Revised Code requires that the County Engineer supervise the construction, reconstruction, improvement, maintenance and repair under the jurisdiction of the county commissioners, and the construction, reconstruction, resurfacing and improvements to public roads under the jurisdiction of township boards of trustees.

**Requests for Engineering Assistance**

In 2020, the Engineer's Design Department received 72 requests for engineering assistance (REA's) from townships within Delaware County. Requests for assistance commonly include traffic studies, preliminary project feasibility studies and safety inspections for culverts and guardrails.

**Construction**

Contact: Brian Dilley, Deputy Construction Engineer (Capital Projects)  
Dan Jennings, Chief Inspector (Development Projects)

The construction department employs 2 construction engineers and 10 construction inspectors who are responsible for oversight of construction on county and township roadway projects.

**Capital Improvement Projects**

Sections 5543.01 and 5543.09 of the Ohio Revised Code requires that the County Engineer oversee the construction of road and bridge improvements undertaken by the Board of County Commissioners and by the Township Boards of Trustees within the county. The Construction Department also administers the bidding process and construction contract management for those road and bridge projects.

## Residential and Commercial Development Projects

Section 711.091 of the Ohio Revised Code requires that the County Engineer inspect the construction of new streets and storm sewers to ensure that they are all properly constructed so as to not endanger the traveling public or cause future maintenance problems. For new residential and commercial developments that create new public roadways, Delaware County and the developer enter into a project agreement whereby the developer/owner will build the new public road infrastructure subject to approval by the county engineer, and after a maintenance period of one year and a final inspection approval by the County Engineer's Office, the newly created roadways can be made part of the public highway system by the county commissioners. The developer/owner pays the Delaware County Engineer's Office's actual cost of the inspection services.

### Development

Contact: Mike Love, P.E., PTOE, Deputy Development Engineer

The Development Department staff includes 4 professional engineers that review development plans and proposals for residential, commercial and industrial developments including planned subdivisions and lot splits on less than 5 acres. The Deputy Development Engineer serves as the County Engineer's representative to the Delaware County Regional Planning Commission which meets monthly to review proposed developments within the unincorporated areas of Delaware County.

### Plan Review Fees

The Development Department charges review fees based on a review fee schedule that considers the number of lots in the development. The Department approved sixty-nine (69) engineering plans, and received a total of \$220,220 in plan review fees during 2020.

### Map Department

Contact: Jack Jennings, P.S., Map Department Supervisor

The Map Department of the Delaware County Engineer's Office maintains the official tax maps for Delaware County. The department employs 1 registered professional surveyor and 2 technicians that maintain the official tax maps of the county, used by the County Auditor to assess property taxes. The Department also reviews/approves legal descriptions for the transfer of real property and assigns subdivision lot numbers and mailing addresses.

The County Map Department is located at 145 Union Street in the Rutherford B. Hayes Administrative Building. As the Map Department works regularly with the County Auditor's Office, the County Geographic Information Systems (GIS) Department and the County Recorder's Office, the Map Department is located in close proximity to those offices to assist in facilitating effective operations.

### Property Conveyance

The County Engineer is the tax map draftsman for the county and reviews all legal descriptions for conveyance of real property. In 2020, there were 8,411 conveyances of real property processed in Delaware County.

### Operations

Contact: Jerry Ungashick, Operations Manager

The Operations Department (Highway Department) handles the day-to-day maintenance of 336 miles of county roads, 378 bridges and over 1,000 culverts. The Department also performs road, bridge and culvert construction and repair projects by in-house force-account when required.

### Summer Operations

The Highway crews perform pavement repairs, chip and crack sealing, roadside shoulder-berming, bridge/culvert repairs and replacements, sign maintenance, grass & weed mowing, tree trimming, brush clearing and storm debris cleanup.

### Winter Operations

Keeping roadways clear during the winter months is one of the most important functions of the County Engineer's Office. The Operations Department spends a significant amount of time and effort in planning and implementing an effective snow and ice-control program. This type of work is very demanding, and the Operations Department employees are on-call 24-hours-a-day/ 7-days-a-week. The plow-truck drivers and the vehicle mechanics frequently must work during the nighttime hours and during snow storm events. The cost of snow and ice control materials totaled \$332,977 in 2020.

2020 De-Icing Materials Used	
Salt	3,727.71 Tons
Brine	57,436.60 Gallons
Total Cost of Materials: \$ 332,977.49	



## Building and Fleet Maintenance

The Operations Department maintains the Engineer's Office facilities, the grounds, and a fleet of road machinery and equipment, which includes; Dump Trucks, Snowplows, Brine Tanks, Chipper/Spreaders, Asphalt Distributors, Graders and Excavators, Backhoes, and Compactors. Maintaining the heavy-duty equipment requires the oversight of educated and experienced mechanics and technicians.

New equipment purchased in 2020:

- Two 2020 Dodge RAM 1500 pickups
- 2020 International single-axle dump truck
- 2020 Ford F-450 truck
- Volvo front-end loader
- 5 zero-turn mowers
- Low Rider Trailer
- 10,000 gallon Tank

## Traffic Signals

The Engineer's Office maintains 36 traffic signals throughout Delaware County including 2 interconnected signal systems. One of the major initiatives the Traffic Operations department worked on in 2020 was a switch to a new Delaware-based central traffic management system in cooperation with the City of Delaware. The system provides remote monitoring of county traffic signals, alerting traffic signal technicians when there is a signal operation problem, and allowing for easier timing changes to optimize traffic flow.

## Traffic Studies

The Design Department also routinely performs traffic counts studies, speed zone studies, crash analyses and safety studies on county and township roadways. In 2020, the Department performed one-hundred-ninety-six (196) traffic studies as summarized below.

Study Type	Number Performed
Speed zone studies	32
Traffic surveys (counts)	137
Safety studies	27

## Portable Message Signs

The Engineer's Office maintains 5 county owned portable electronic message signs that are used for construction projects to inform motorists of road closures, traffic delays and any other roadway issues. The message signs can also be set up for "your speed" radar operations to improve speed awareness in areas that frequently receive complaints of speeding vehicles.

## Permits

Contact: Joe Warner, Utility Coordinator

## Right of Way Work Permits

The Permit Department administers and issues permits for work conducted within the road rights-of-way for utility construction, driveway and/or ditch construction. As provided in Section 5547.03 of the Ohio Revised Code, the County Commissioners may permit utilities (electric, gas, water, sanitary, etc.) to be placed within the public rights-of-way.



**Right of Way Work Permits Issued in 2020**

Driveway Permits:	797
Right of Way Work Permits:	39
Storm Sewer Permits:	5
Utility permits:	245

**Hauling Permits**

This Department also administers the Special Hauling Permit Program, as authorized by Section 4513.34 of the Ohio Revised Code, for permitting overloaded and/or oversize vehicles to travel on any county and township roadways. Chapter 5577 of the Ohio Revised Code provides for load limits on the size and weight of vehicles traveling on public roadways.

Any vehicle that exceeds the load limits must first obtain a permit from the Delaware County Engineer's Office authorizing the legal travel on the county and/or township road they desire to travel upon. The Permit Department staff reviews all permits, paying close attention to the crossing of any bridges, and for roadways that may have inadequate support to allow for heavier loads. Permit applicants are provided with specifically designated haul-routes to travel in order to avoid any susceptible bridge(s) or pavement(s).

**Special Hauling Permits Issued in 2020**

Trip Permits (oversize/overweight)	552
Posted Road Permits (overweight)	341

**Stormwater**

Contact: Brett Bergefurd, Deputy Drainage Engineer

The Drainage Engineer for Delaware County is appointed by the Board of Delaware County Commissioners under the authority of Chapter 6117 of the Ohio Revised Code. The duties of the County Drainage Engineer include the maintenance and administration of all county maintained drainage facilities; such as the county maintained ditches, storm sewers, retention and detention ponds, and other permanent drainage structures that allow for the conveyance and/or collection of storm water runoff.

The County Drainage Engineer administers the Delaware County DESC (Drainage, Erosion, and Sediment Control) Program, which regulates the discharges of drainage and sediment into county and township storm sewers and ditch drainage systems. This program satisfies the construction and post-construction minimum control measures as defined and required in the National Pollutant Discharge Elimination System (NPDES) permit.

**Drainage Petitions and the County Drainage Maintenance Program**

Chapter 6131 of the Ohio Revised Code provides a means for property owners to seek drainage improvements on private property through the submission of petitions to the Board of Delaware County Commissioners. By statute, the County Engineer serves as the advisor, and the design and construction manager for any drainage improvements conducted by the County Board of Commissioners under this statute.

Drainage improvements, pursuant to this statute, are paid for by assessments placed upon the property taxes of the benefitted properties. Benefits of drainage project can include increased crop yields on agricultural lands, higher land values, and a reduction of damages to structures on residential, commercial and industrial lands.

In Delaware County, a three-party agreement between the Board of County Commissioners, the County Engineer and the Delaware Soil and Water Conservation District (DSWCD) provides the framework for



the management of the drainage petition and maintenance programs. DSWCD receives and coordinates petitions by property owners and assists the County Engineer in preparing the reports, plans, specifications and estimates for any drainage improvements under Chapter 6131.

Once a drainage improvement is completed, it is placed on the County Drainage Maintenance Program and maintained with funds from the maintenance assessment placed upon the benefitted properties. DSWCD performs annual inspections of all drainage improvements across Delaware County, and performs any required maintenance or necessary repairs. Frequent maintenance includes repairing erosion area, reseeding drainage basin areas, and debris removal.

