

2020 ANNUAL REPORT



Christmas Eve 2020 at the salt shed

Photo courtesy of Calvin Logan

*Brian J. Wise, P.E., P.S.
Carroll County Engineer*



Carroll County Engineer's 2020 Annual Report

Brian J. Wise, P.E., P.S.
Carroll County Engineer

To the BOARD OF COMMISSIONERS and CITIZENS OF CARROLL COUNTY:

This document is not only prepared to comply with the requirements of the Ohio Revised Code as an annual report to the Carroll County Commissioners on the status of our roads, bridges and culverts, it also serves to keep the public informed of how your highway tax dollars are used for road and bridge construction and maintenance. I will continue to update this report to provide useful information in an easy to use format.

I would like to take this opportunity to thank all the employees of the County Engineer's Office, the Highway Department and the Tax Map Department for their hard work and dedication over the past year. Without their determined efforts, the volume of work completed in this report would not have been possible. I would also like to thank the County Commissioners, Township Trustees and Township Road Crews for their continued cooperation over the past year.

What can I write about 2020 that hasn't been said all ready? I believe I'll take a different approach and focus on a few positive things that occurred in 2020. First of all, thanks to a mild winter, we had additional funds to work with over the year to maintain additional road mileage and build up material stockpiles. The increase in fuel taxes enacted by the Ohio Legislature in 2019 began to generate funds that help combat the inflation of material prices we've dealt with over the last fifteen years. Lastly, a very dry summer enabled us to catch up on drainage maintenance issues as well as replace several culverts.

In an effort to better preserve our investment in road and bridge infrastructure, we have shifted the focus of our operations more toward preventative maintenance and repair. This strategy will hopefully extend the useful life of our assets until something can be done at the legislative level to keep revenues commensurate with inflation. Please encourage our Ohio Representatives and Senators to address this responsibility of the State Legislature to provide adequate highway infrastructure funding for local jurisdictions.

I would like to take this occasion to thank the residents of Carroll County for the opportunity to serve you. This department will continue to manage your tax dollars as efficiently as possible while providing a safe road and bridge system for the traveling public.

I respectfully submit this annual report for the year 2020 as required by Ohio Revised Code §5543.02,

Brian J. Wise, P.E., P.S.
Carroll County Engineer



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County crew repairing a road slip on Colony Rd., C.R. 74 in Fox Township



County crew replacing a culvert on Arbor Rd., C.R. 14 in Augusta Township.

On the Cover:

*Christmas Eve 2020 at the County salt shed, taken from the operator's perspective.
Photo courtesy of Calvin Logan.*

The Carroll County Engineer Maintains:

- **307 Miles of Road** (ADT = Average Daily Traffic)
 - 6 miles > 2,000 ADT (High = 2,184)
 - 26 miles between 1,000 and 2,000 ADT
 - 70 miles between 400 and 1,000 ADT
 - 167 miles between 100 and 400 ADT
 - 38 miles < 100 ADT (Low = 9)

- **144 Bridges**
 - 32 span from 10' to 20'
 - 106 span from 20' to 100'
 - 6 span from 100' to 134'



Department Staff



County Engineer
Brian J. Wise, P.E., P.S.

Deputy Administrator
Chris Kiehl

Superintendent
Mike Bryan

Deputy Surveyor
Rodney Yoder, P.S.

Administrative Assistant
Janice Leggett

Administrative Secretary
Tracy Flanagan

Part Time Inspector
Bob Grigsby

Map Office Supervisor
Diane Wirkner

Map Office Assistant
Cindy Arbogast

Roadway / Bridge / Culvert / Maintenance Supervisors

Harvey Mountz

Rodney Days

Allan Furbee

Scott Randal

Sign Department Manager
Mark Brannon

Night Watchperson
Darl Walton

Highway Workers

Corey Clark

Kyle Foltz

Dale George

Larry Granger

Lane Hartong

Chris Hawk

Bruce Hilliard

Tom Jones

Mike Kruprzack

Calvin Logan

Matt Manfull

Pete McIntire

Jeff Riegle

Brandon Riggs

Dave Seck

Dale Tinlin

Jim Ujcich

Mark Watts



*(Clockwise from Upper Left)
County Crews: Spot paving
Azalea Rd., CR22; Chip &
Sealing Blossom Rd., CR33;
Bridge scour repair Avon Rd.,
CR21; Culvert Outlet
protection Citrus Rd., CR68.*



2020 REVENUE

Our total revenue received for 2020 was \$5,807,963.26 which shows an increase due to the adjustment of the State Motor Fuel Tax. Proceeds from the State Motor Fuel Tax and Vehicle License Fees are the primary revenue sources for the operation of the Carroll County Engineer's Office and Highway Department.

Our largest source of revenue is the State Motor Fuel Tax. Counties statewide share an equal amount of the per gallon tax the State collects on motor vehicle fuel. The State Legislature began to address the declining revenues in 2019 by adjusting motor fuel taxes and hybrid vehicle registration fees. In 2020 we received \$3,614,207.26 in fuel tax revenue, which shows a significant improvement over previous years.

Vehicle License Plate Fees are the second largest source of revenue. This revenue is generated only from vehicles that are registered in Carroll County. In 2020 we received \$1,294,721.67 from vehicle registrations, which is slightly less than previous years due to the COVID-19 pandemic.

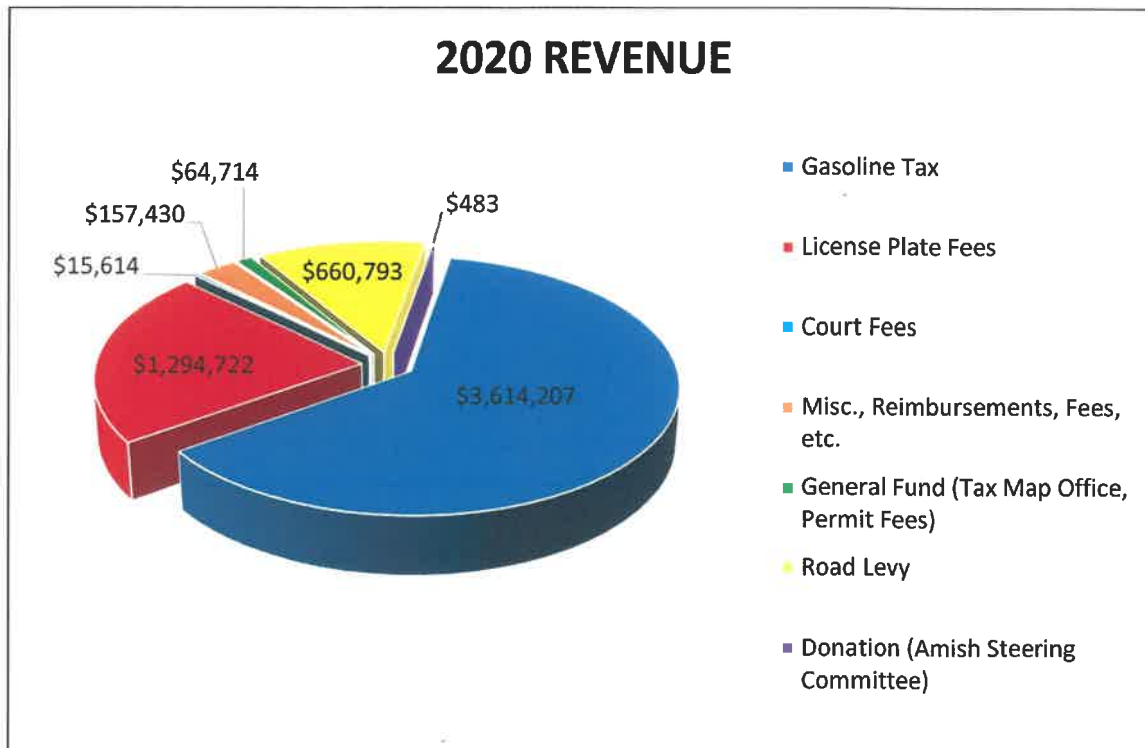
Court Fees, Reimbursements and Miscellaneous income contributed \$173,044.41 in revenue in 2020.

County Road Levy funds collected have fluctuated considerably over the years since its inception. The County Engineer's Office continued this year to grant financial assistance to the 14 townships of Carroll County in the amount of \$150,000.00 as well as a grant for \$50,000.00 to the Carroll County Sheriff's Office for patrol car fuel. In 2020, the Highway Department collected \$660,792.92 in road levy funds.

The General Fund contributes to the operation of the Tax Map Office as well as a portion of right of way permit fees collected. In 2020, \$64,714.00 in revenue was received from the General Fund.

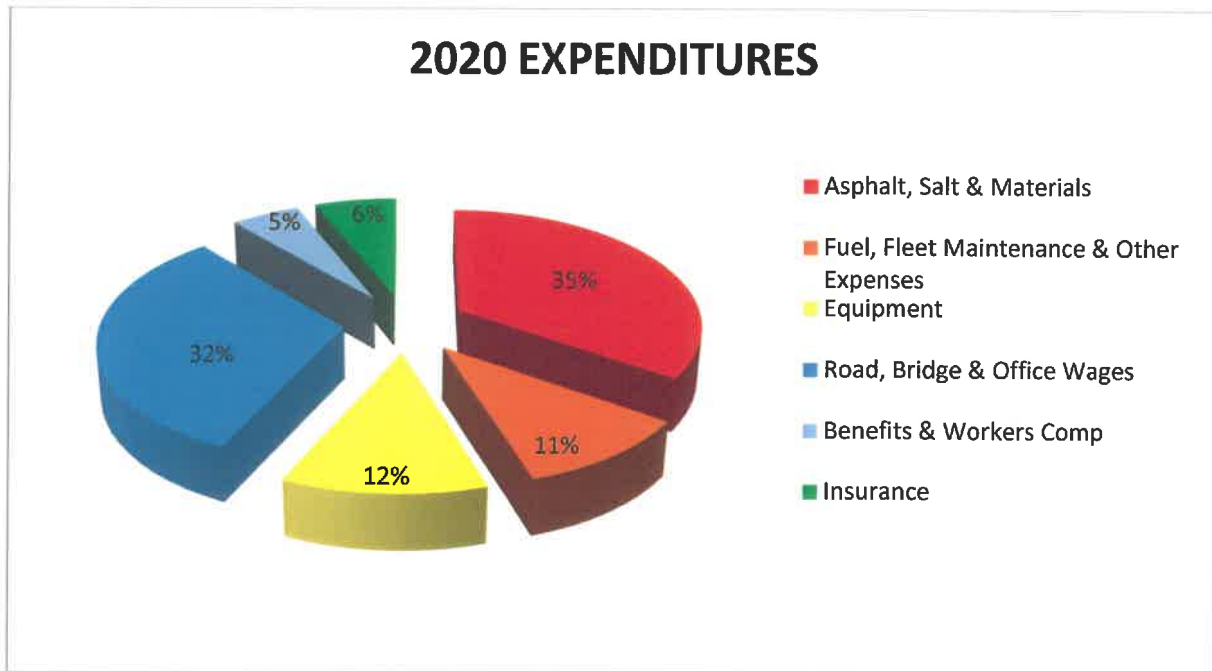
The Amish Steering Committee donated \$483.00 toward road maintenance costs in 2020 bringing the balance in that fund to \$5,222.10. These funds will be put toward a future project.

In an effort to inform the public about a common misconception: Property taxes do not contribute toward road maintenance revenues.



2020 EXPENDITURES

Our total expenditures in 2020 were \$5,228,584.92. This amount is about ten percent less than our total revenue due to uncertainties related to the COVID-19 pandemic.



Not shown in the above graph are grant monies received and paid directly to contractors.

We received grants from the Ohio Public Works Commission totaling \$533,000.00. These grants allowed us to pave 9 miles of County highways



We also received a grant from the Ohio Department of Transportation's Local Roads Oil and Shale Program totaling \$99,481.00. This grant allowed us to pave 0.5 miles of Chase Rd., C.R. 66, at no cost to the County.

The Local Roads Oil and Shale Program provides economic support for infrastructure repairs in counties, townships, cities and villages impacted by increased vehicular truck traffic from oil and gas production.

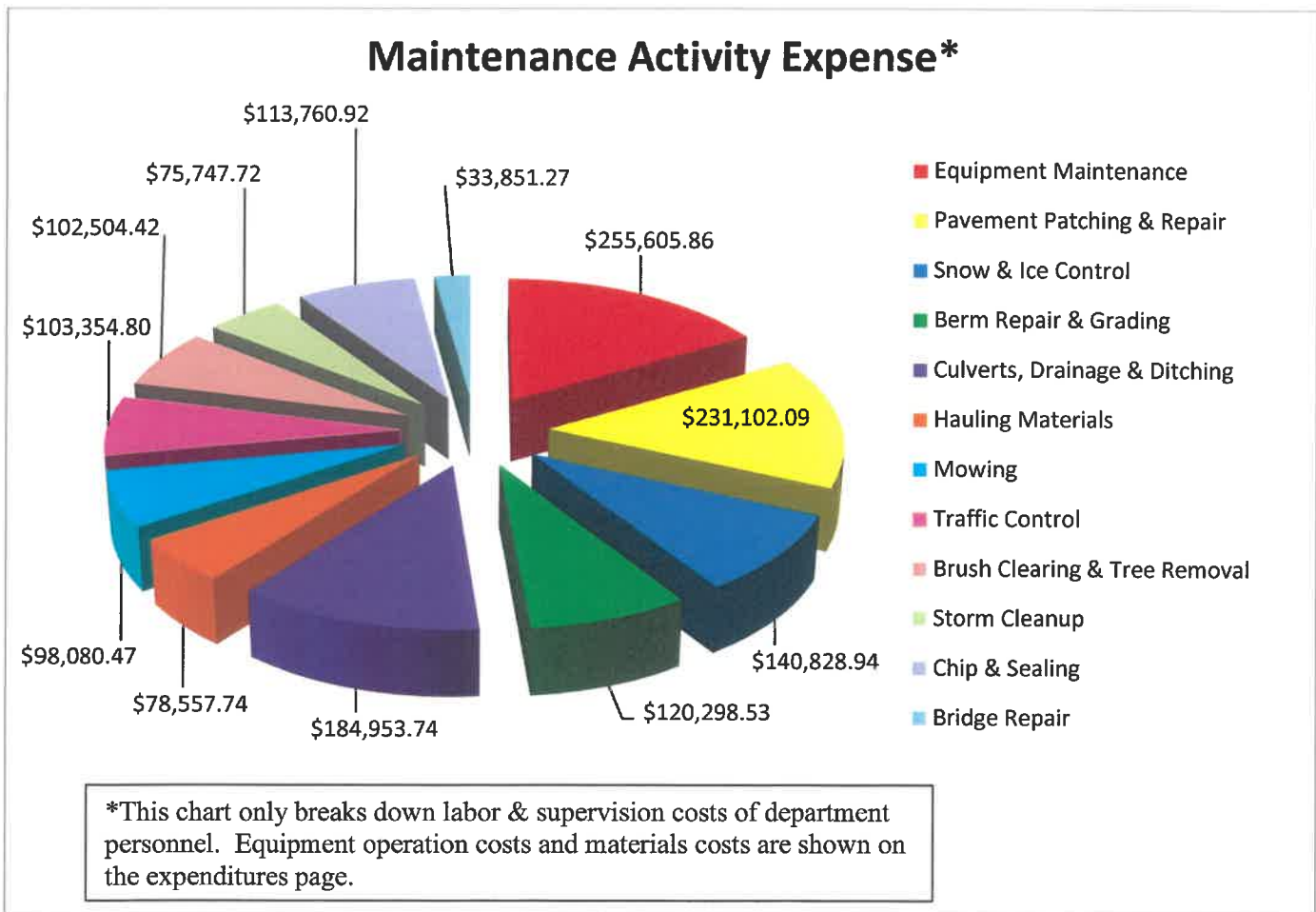


ROAD & BRIDGE MAINTENANCE

It is a pleasure to report the amount of work our forces were able to accomplish this year notwithstanding all the COVID-19 restrictions we had to deal with. Maintenance work is the primary service that the highway department provides for the public.

The winter of 2019-2020 was fortunately very mild. Our forces treated the roads with 6,060 tons of winter mix over 36 separate callouts. Due to the light winter, we still had to purchase 80% of our projected salt contract. We had to create temporary outside salt storage due to the salt shed being filled to capacity, in order to fulfill our contractual obligations.

In 1990, there were 34 employees at the highway department. In 2020 the number of employees was 24. That represents a 29% reduction in work force over a 30-year period. The following chart highlights the amount of work that we were able to accomplish with departmental forces.



The above chart represents over 45,000 labor hours of maintenance work performed by highway department personnel on County roads. At a total cost of over \$1,538,646.5, we were able to provide a substantial cost savings to the County over contracting this work out. We estimate the savings to be well over \$250,000.00. Performing road & bridge repair and maintenance work with our own personnel is one of the most cost-effective ways we can manage our resources more efficiently.

STATUS OF CARROLL COUNTY ROADS

The Carroll County Engineer has responsibility for maintaining approximately 307 miles of county roads. Road conditions are rated by in house staff and receive a rating on a 100 point scale. The Pavement Condition Rating System (PCR) employed by ODOT is used to develop this rating. The data represented in the chart below was gathered in 2015 and it is our intent to periodically update this information in the future. Defects in the roadway are given certain values and the sum of those defects is subtracted from 100 to reveal the pavement condition rating of the road. A PCR of 100 represents a perfect new pavement, a PCR of 0 represents a pavement with distress present at the highest or most extensive level of severity. A rating of 65 or less indicates that rehabilitation work should be considered. Please keep in mind that the rating calculations were designed around the State Highway system and result in conditions skewed toward the low end of the scale when applied to rural low volume County highways like ours. Rehabilitation projects will continue to be selected based on an in depth engineering analysis of the particular highway section in need of repair. We have chosen to utilize this rating method merely as a tool for monitoring pavement condition variations over a period of time.

CONDITION DESCRIPTION	PCR	TOTAL MILES	PERCENTAGE OF TOTAL MILES	ACCUMULATING PERCENT OF TOTAL MILES
EXCELLENT	>90	5.73	1.87%	
GOOD	>80	105.97	34.52%	36.38%
FAIR	>65	42.27	13.77%	50.15%
POOR	<65	149.67	48.75%	98.91%
NOT RATED	-	3.36	1.09%	100.00%
	TOTAL	307		

This system only addresses the pavement surface condition as it exists on the day of evaluation and does not attempt to evaluate whether a particular road should be surfaced with a particular type of pavement.

County road mileage is classified by three surface types. Currently, approximately one third of the County mileage has an asphalt surface course, approximately one third of the County mileage has received a profile or leveling coat of asphalt and the remaining one third of the County mileage is a surface built up from years of chip and seal application. This last group contains a few miles that are still classified as a stone surfaced road and were not rated as part of this process.

The average life span of an asphalt surface course is 12 years under minimal truck traffic. For the County's 307 miles of road, that means that almost 26 miles needs to be paved every year just to keep up with normal wear and tear on our system. It currently costs around \$85,000.00 per mile to pave a 1½" overlay on a 20' wide portion of road. To pave 26 miles per year we would need an additional \$2,210,000.00 adjusted to the construction price index to keep up with material cost inflation.

STATUS OF CARROLL COUNTY BRIDGES

The Carroll County Engineer has responsibility for maintaining 144 bridges on County and Township roads. Bridges are classified as any structure with a span greater than 10 feet. Bridge conditions are rated every year by an independent engineering consultant and receive a rating on a scale of 1 to 9. A rating of 9 indicates excellent condition while a 1 indicates that the bridge is closed and out of service.

Based on the annual inspection of bridges, the following table indicates the condition of the 144 bridges in Carroll County.

CONDITION DESCRIPTION	GENERAL APPRAISAL RATING	NUMBER OF BRIDGES	PERCENTAGE OF TOTAL BRIDGES	ACCUMULATING PERCENT OF TOTAL BRIDGES
EXCELLENT	9	3	2.08%	
VERY GOOD	8	10	6.94%	9.03%
GOOD	7	46	31.94%	40.97%
SATISFACTORY	6	55	38.19%	79.17%
FAIR	5	28	19.44%	98.61%
POOR	4	1	0.69%	99.31%
SERIOUS	3	1	0.69%	100.00%
CRITICAL	2	0		
OUT OF SERVICE	1	0		
	TOTAL	144		

It is a goal of this department to keep 90% of our bridge inventory at an appraisal rating of 5 or higher. As you can see from the chart above, we have accomplished that goal. Unfortunately, we are in a continuing battle with both time and weather to keep our inventory maintained at that level.

In 2015 the Federal Highway Administration revised the way that Ohio was load rating bridges. Special Hauling Vehicles (SHVs) and Emergency Vehicles (EVs) are now included in the load rating calculations. This change has increased our number of bridges requiring reduced load postings to a total of 5; 3 are posted due to SHVs and 2 for EVs only.

The average useful life of a bridge is 50 years. For the County's 144 bridges, that means that 3 bridges need to be replaced every year just to keep up with normal wear and tear. The bridges on the Carroll County highway system range in size from a 10' span to 134' span. Replacement costs for that span range vary from \$100,000.00 to over half a million dollars. Using our average bridge size for calculation purposes it currently costs around \$250,000.00 to replace an entire bridge. At 3 bridges per year we would need an additional \$750,000.00 adjusted to the construction price index to keep up with material cost inflation.

STATUS OF CARROLL COUNTY CULVERTS

The Carroll County Engineer has responsibility for maintaining 182 large diameter culverts and about 2,000 small diameter culverts on County roads. Culverts of 3' diameter and larger on County roads are rated every two years by our in-house staff. Ratings are issued from excellent to critical. The 182 large diameter culverts range in size from 3' diameter to 10' span, the 2,000 smaller culverts include anything less than 3' diameter and are not rated on a regular basis due to their smaller size.

Based on the latest inspection of culverts, the following table indicates the condition of the 182 large diameter culverts on Carroll County roads.

CONDITION DESCRIPTION	CONDITION RATING	NUMBER OF CULVERTS >3'	PERCENTAGE OF TOTAL CULVERTS >3'	ACCUMULATING PERCENTAGE
EXCELLENT	9	0	0.00%	0.00%
VERY GOOD	8	3	1.65%	1.65%
GOOD	7	142	78.02%	79.67%
SATISFACTORY	6	1	0.55%	80.22%
FAIR	5	31	17.03%	97.25%
POOR	4	5	2.75%	100.00%
SERIOUS	3	0	0.00%	100.00%
CRITICAL	2	0	0.00%	100.00%
OUT OF SERVICE	1	0	0.00%	100.00%
	TOTAL	182		

It is a goal of this department to keep 90% of our large diameter culvert inventory at a condition rating of 5 or higher. As you can see from the chart above, we have accomplished that goal. Unfortunately, we have 28 metal culverts in the fair to poor rating category that are nearing the end of their useful life span and will require replacing over the next several years.

The average useful life of a culvert is 50 years. For the County's 182 large diameter culverts, that means that 4 culverts need to be replaced every year to keep up with normal wear and tear. The large diameter culverts on the Carroll County highway system range in size from a 3' diameter to a 10' span. Replacement costs for that size range vary from \$10,000.00 to \$100,000.00. Using an average current cost for calculation purposes of \$50,000.00 to replace a large culvert, at 4 culverts per year we would need an additional \$200,000.00 adjusted to the construction price index to keep up with material cost inflation.

EQUIPMENT

We added another Western Star plow truck to our fleet of 11 primary plow trucks and 4 spare plow trucks in 2020. We have been quite pleased with the change to the Western Star chassis and will continue in that direction in the future. While the useful life of a plow truck in main line service is typically 12 years, we need to purchase at least one new truck per year to keep up with our 11 snow routes.

In 2020 we purchased a new chip seal roller, a used road broom, a new chassis for a mechanic service truck and a small used paver for repaving bridge decks. We also purchased a used fire truck from the Fox Township VFD. We will be transferring our existing asphalt distributor body onto the chassis of the fire truck. This will save the County over \$75,000 compared to the cost of purchasing a new chassis.



(Photos courtesy of Volvo, Mclean, Valley Ford, Fox Twp, VFD, respectively)

To report in compliance with §5549 of the Ohio Revised Code, other equipment that will need replaced in the near future includes:

One Plow Truck per year, \$200,000

Wheel Loader, \$280,000

2- Pickups, \$35,000 each

Road Broom, \$85,000

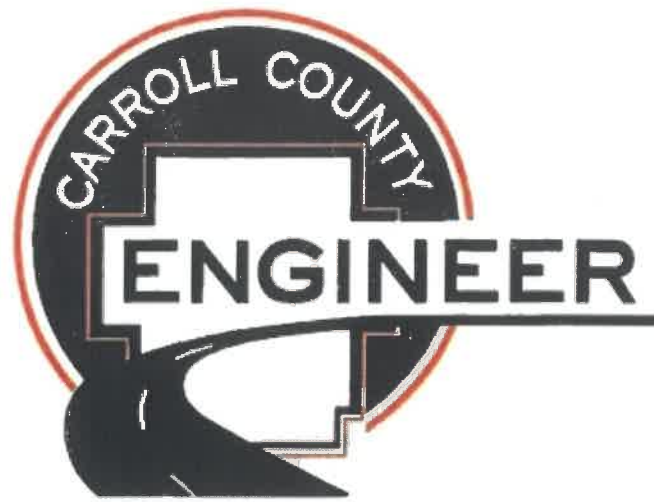
Road Grader, \$300,000

Distributor Truck, \$150,000

Hydraulic Excavator, \$250,000

50 T Lowboy Trailer, \$50,000

Various hand tools, misc. small equipment and attachments, approx. \$20,000 per year



2020

**RESOURCE
ALLOCATION
REPORT**

HIGHWAY DEPARTMENT

The 25 full-time employees of the Carroll County Highway Department performed the following road and bridge work in 2020.

PAVEMENT

- 256 tons of permacoat asphalt for pothole patching.
- 52 miles of roadway chip & sealed using
6,059 tons of #8 gravel and
226,450 gallons of liquid asphalt.
- 5,400 tons of permacoat and
373 tons of hotmix asphalt for road leveling totaling
102 miles.
- 67 miles of berm work totaling
2,729 labor hours.

ROADWAY

- 2,682 labor hours for spot ditch cleaning and re-shaping.
- 1,059 labor hours for roadway storm cleanup.

ROADSIDE

- 2,321 labor hours of roadway mowed by County employees.
- 454 labor hours of arm mower work to clear brush on steep banks.
- 2,655 hours manually removing brush and trees from road banks.
- 1,643 gallons of herbicide spray by others for brush control on the right-of-way.
- 3,686 gallons of herbicide spray by others for brush control at guardrails.
- 74,603 linear feet of guardrail sprayed with herbicide by others.

CULVERT

- 801 labor hours to clean and check pipes.
- 25 culvert pipes replaced

BRIDGES

- 144 bridges inspected.

TRAFFIC OPERATION

- 1,389 traffic signs replaced or newly erected.
- 36 road name signs replaced due to theft.
- 41 gallons of herbicide for weed control at intersections and sign posts.

WINTER EMERGENCY

- 36 days of snow and ice control performed.
- 6,060 tons of snow & ice control mix.
- 3,113 labor hours.
- 2,471 equipment hours.
- 521 labor hours expended for winter emergency preparation.

EQUIPMENT MAINTENANCE

- 5,044 labor hours.
- 53 licensed trucks, cars and trailers.
- 39 non-licensed construction equipment and other miscellaneous equipment such as chainsaws, compactors, welders and generators.

HAULING/STOCKPILING ROAD MATERIALS

- 1,454 labor hours to haul and stock pile road materials.

ROAD WORK FOR OTHERS

The Highway Department provided 164.5 labor hours for other county, township and village agencies which include:

Hours

19.5	Industrial Park
73.0	Carroll County Agricultural Society
15.5	Carroll County Airport Authority
10.0	Carroll County Commissioners
11.5	Carroll Golden Age Retreat
5.0	Solid Waste District
10.0	Carroll County Health Dept.
8.0	Soil & Water Conservation District
8.0	Center Twp. Pipe
4.0	Village of Leesville

ENGINEER'S OFFICE

The Engineer's Office consists of 4 full-time staff personnel in addition to the Engineer. Highlights achieved in 2020 include:

- The administration of 44 right-of-way permits and 49 driveway permits.
- 25 special hauling permits were required.
- The preparation of payroll, statements for payment, billings and associated administrative work for our \$5.2 million dollar budget was performed on a daily basis.
- Application for \$533,000 from the State Issue I program for road projects and bridge projects.
- Received reimbursement through the State Disaster Relief Program for severe storm and flood damage in June 2019 totaling \$92,098.04.
- The preparation of specifications and bid documents for a variety of projects. These included 0.48 miles of paving on CR 8A, 3.34 miles on CR 10, 3.08 miles on CR 11, 2.48 miles on CR 20, and 0.5 miles on CR66.
- The performance of daily inspection and inspection reports on all contract work.
- Administer the Wheeler Bill for ODOT, which includes all township & county roads.
- Daily coordination of highway improvements on County and Township roadways for oil and gas production.
- In addition to the day-to-day requirements of meeting County objectives, the Engineer's Office provided professional services for numerous townships, villages and the Carroll County Commissioners, including:

Assisted Regional Planning Commission with lot split reviews

Assisted ODOT with Location Based Response Highway Centerlines

Assisted Sheriff's Office with 911 mapping updates

Assisted the Carroll County Friendship Center with design of new parking lot

Union Township Doral Road Right of Way Survey

Assisted County Auditor with lot vacation procedures

MAP OFFICE

The 2 full-time employees of the Tax Map Office record deed transfers and surveys. They maintain the tax plat information by lot, parcel or acreage on a daily basis in support of the County Auditor. In 2020 this office processed 2,244 deeds, 1,854 transfers and 133 surveys.

The Map Office provides advice, copies of maps and answers questions in support of many Carroll County Government offices. These include the Auditor's Office, the Board of Commissioners, Regional Planning Commission, Economic Development, Health Department, Title Office and many of the villages and townships. Services are also provided to the public which include attorneys, surveyors, appraisers, and private citizens.

PERSONNEL TRAINING

Random drug testing was performed on 12 employees in addition to 2 pre-employment DOT drug test and 1 pre-employment non-DOT drug tests. Safety films/instructors were minimal in 2020 due to COVID-19 restrictions and recommendations. However, we utilized the employee bulletin board each month to provide employees with safety tips, reminders and precautions when performing their assigned tasks. Training seminars completed by various employees included:

2020 CEAO Conferences

Berming & Bandit Chipper

Flagging Basics

Pipeline Safety

Commercial Pesticide Applicator Recertification Conference

Professional Land Surveyors of Ohio Annual Conference

Tree Work Essentials: Chainsaws, Chippers & Other Safety Concerns

Federal Motor Carrier Safety Administration Clearinghouse

Corona Virus/COVID-19

Preventing the Spread of Infectious Disease in Highway Work Zones

Safe Use of Paver Equipment

Fire Extinguishers

Snow & Ice Control

Chain Saws, Heavy Lifting, Truck Backing & Pre-Trip Inspections

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