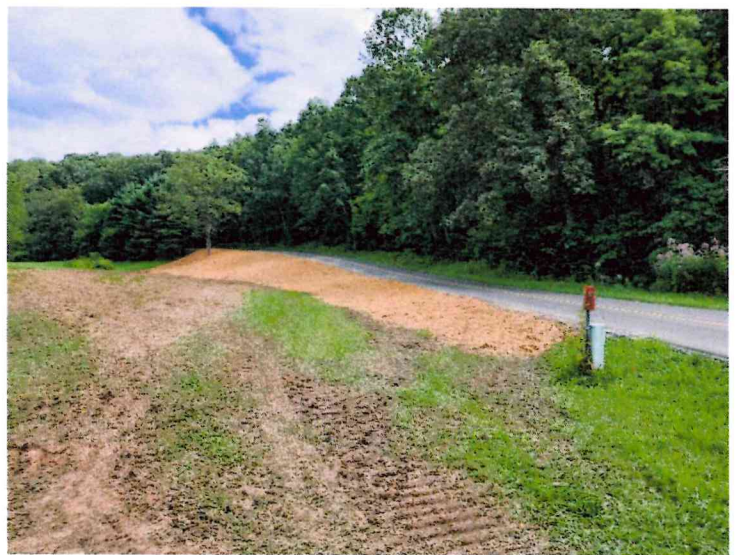
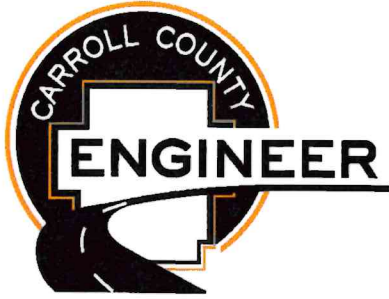


# 2023 ANNUAL REPORT





# Carroll County Engineer's 2023 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 prepared in compliance with the Ohio Revised Code as an annual report to the Carroll County Commissioners on the status of our roads, bridges and culverts. The report 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.

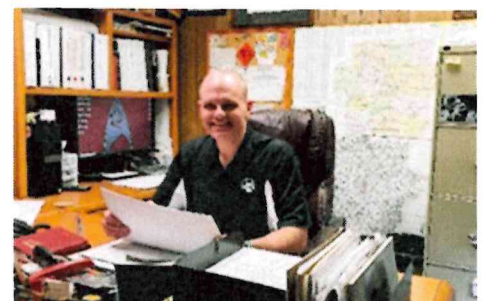
I want to thank all the employees of the County Engineer's Office, the Highway Department and the Tax Map Department for their hard work and dedication over the past year. Without their determined efforts, the volume of work completed in this report would not be possible. I would also like to thank the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

Due to the continued volatility of the asphalt market in 2023, we focused our capital improvement budget on bridge projects. This shift allowed us to rehabilitate or program replacement of eight structures, representing over five-percent of our countywide bridge inventory. Our continued march toward preventative maintenance on our highway system provides us with an ability to defer replacement costs by substituting spot repairs or other rehabilitation methods. These options give us the advantage of timing major capital expenditures for highway improvements with market fluctuations in order to capitalize our resources.

I 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 2023 as required by Ohio Revised Code §5543.02.

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



# TABLE OF CONTENTS

**Table of Contents**

**Department Staff**

**Revenue**

**Expenditures**

**Road & Bridge Maintenance Operations**

**Status of County Roads**

**Status of County Bridges**

**Status of County Culverts**

**Equipment**

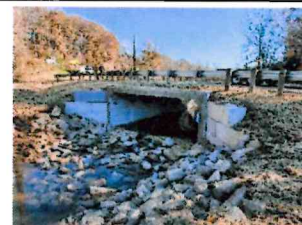
**Resource Allocation**



*County bridge crew installing an in-house designed and fabricated flow improvement device to a bridge on Aster Rd., C.R. 17 in Perry Township (left); County forces berming Bear Rd., C.R. 28 in Loudon Twp. to improve drainage (center and right).*



*McConnell Contracting, Inc. from West Lafayette, Ohio constructs a reinforced concrete box culvert bridge on Plymouth Rd., T.R. 374 in Perry Township.*



## The Carroll County Engineer Maintains:

- **307 Miles of Road** (ADT = Average Daily Traffic)
  - 6 miles > 2,000 ADT (High = 2,282)
  - 27 miles between 1,000 and 2,000 ADT
  - 74 miles between 400 and 1,000 ADT
  - 157 miles between 100 and 400 ADT
  - 43 miles < 100 ADT (Low = 11)
- **144 Bridges**
  - 32 span from 10' to 20'
  - 106 span from 20' to 100'
  - 6 span from 100' to 134'

### On the Cover:

*County forces grading to create additional shoulder and berm to Autumn Rd., C.R. 19, in Union Township at Algonquin Mill.*

# Department Staff

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

**Deputy Administrator**  
Chris Kiehl

**Superintendent**  
Mike Bryan

**Administrative Assistant**  
Janice Leggett

**Administrative Secretary**  
Tracy Flanagan

**Inspector**  
Bob Grigsby

**Map Office Supervisor**  
Diane Wirkner

**Map Office Assistant**  
Cindy Arbogast

**Roadway / Bridge / Culvert / Maintenance Supervisors**  
Rodney Days      Allan Furbee      Ryan Roberts      Dave Seck

**Sign Department Manager**  
Mark Brannon

**Night Watchperson**  
Darl Walton

## **Highway Workers**

Zeph Casper  
Corey Clark  
Kyle Foltz  
Dale George  
Larry Granger

Brenen Green  
Lane Hartong  
Chris Hawk  
Tim Hawk, Jr.  
Tom Jones

Mike Krupczak  
Wayne Lippincott  
Calvin Logan  
Rex Magee  
Pete McIntire

Brad Rutledge  
Tom Thompson  
Dale Tinlin  
Jimmy Ujcich



*Bedrock Rd., C.R. 29 county bridge crew replacing bridge over Willow Run in Harrison Township. (Left)*

*County paving crew installing the road surface after fixing an embankment slip on Cinder Rd., C.R. 67 in Fox Township. (Right)*



# 2023 REVENUE

Our total revenue received for 2023 was \$6,258,136.45 which shows an increase over last year. 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 2023 we received \$3,827,153.05 in fuel tax revenue, which is slightly more than 2022 and is a significant improvement over years prior.

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 2023 we received \$1,459,467.25 from vehicle registrations, which is comparable to last year.

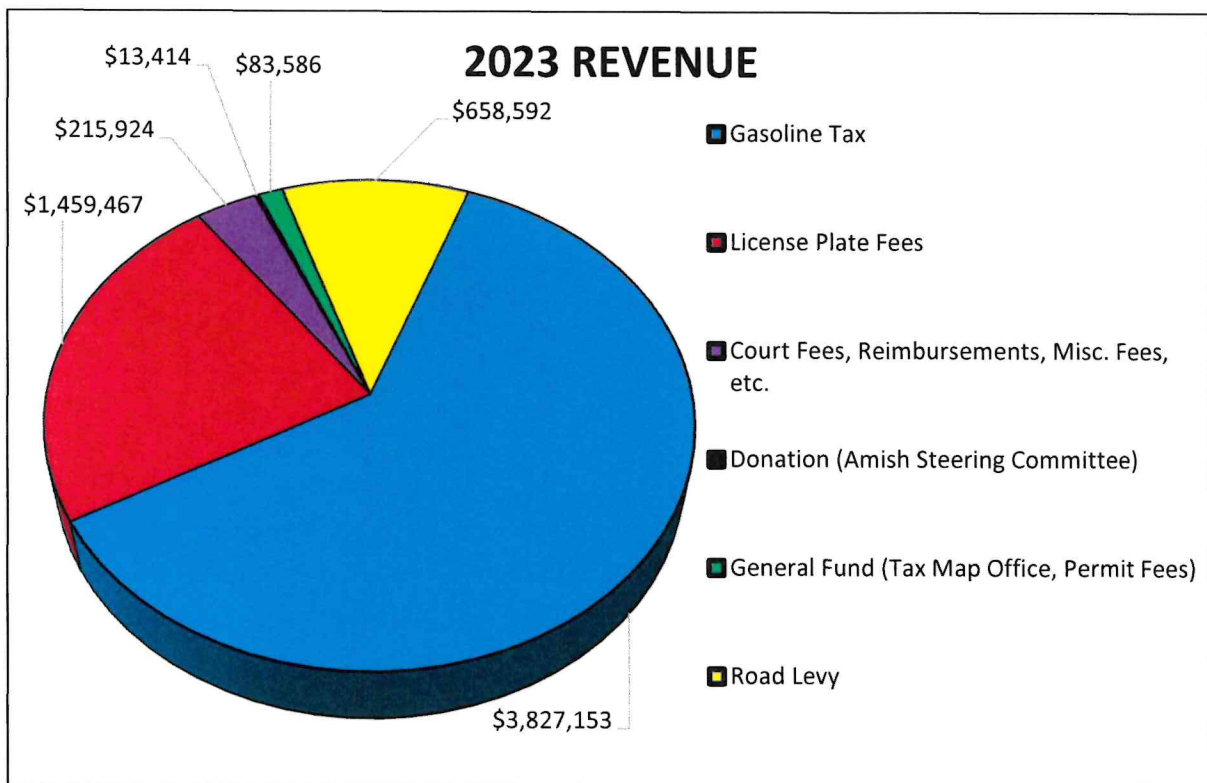
Court Fees, Reimbursements and Miscellaneous income contributed \$215,924.05 in revenue in 2023.

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 2023, the Highway Department collected \$658,591.91 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 2023, \$83,586.00 in revenue was received from the General Fund.

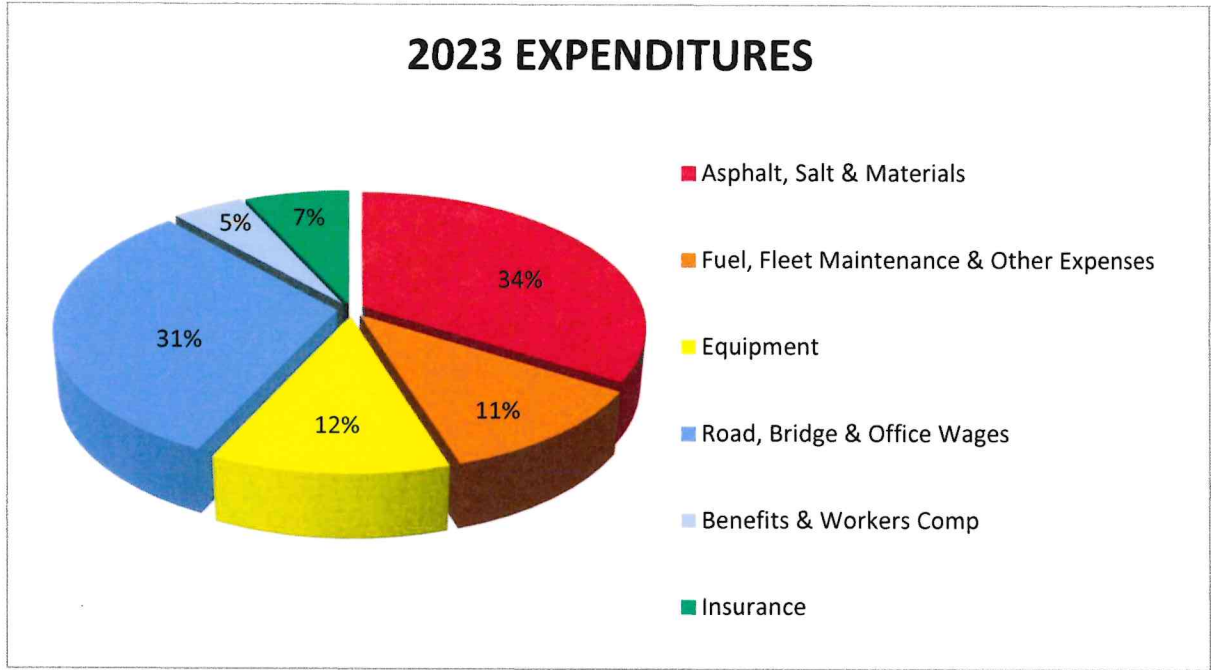
The Amish Steering Committee donated \$13,414.19 toward road maintenance costs in 2023 bringing the balance in that fund to \$24,963.82. These funds will be put toward a future project.

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



# 2023 EXPENDITURES

Our total expenditures in 2023 were \$6,339,679.76.



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

We received grants from the Ohio Public Works Commission which will allow replacement of the box culvert/bridge on Plymouth Rd. (\$171,000), the bridge decks on Buck Rd.-CR45 and Bedrock Rd.-CR29 (\$48,982), the culvert on Dew Drop Rd. (\$136,800), and the bridge deck on Glecoe Rd. (\$31,850). The grants total \$388,632.



We also received a grant from the Ohio Department of Transportation's Local Roads Oil & Shale Program, which will allow us to resurface a portion of Canyon Rd.-CR54 in 2024. This grant totals \$475,190.



We received a Safety Intervention Grant from the Ohio Bureau of Workers' Compensation to purchase a set of automated flagger assistance devices. This grant totaled \$23,025.

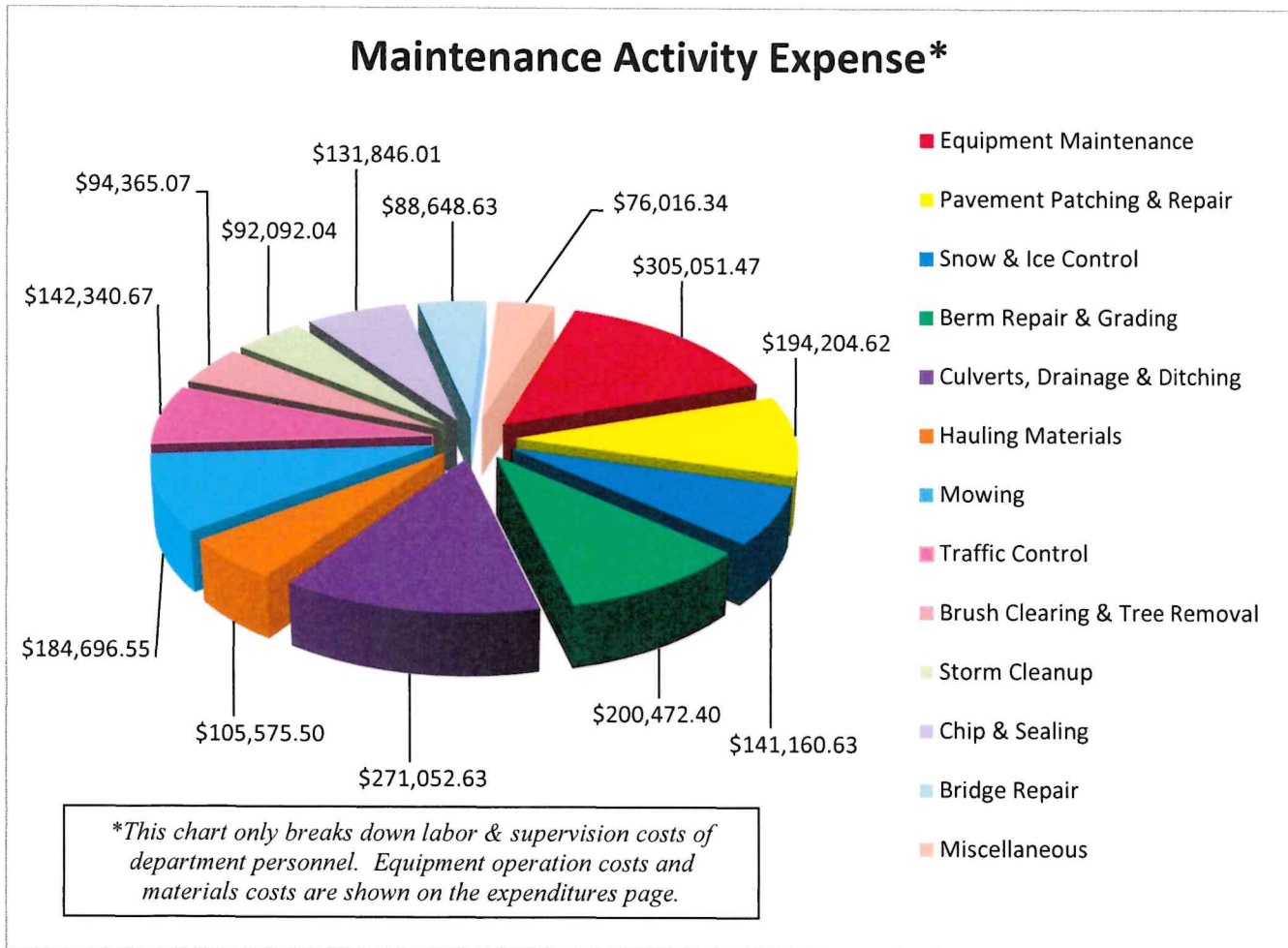


# ROAD & BRIDGE MAINTENANCE

It is a pleasure to report the amount of work our forces were able to accomplish this year. Maintenance work is the primary service the highway department provides for the public.

The winter of 2022-2023 was much milder than the previous winter. Our forces treated the roads with 2,830 tons of winter mix over 19 separate callouts.

In 1990, there were 34 employees at the highway department. In 2023 the number of employees was 26. That represents a 24% reduction in work force over a 33-year period. The following chart highlights the amount of work that we were able to accomplish with departmental forces.



The above chart represents over 50,000 labor hours of maintenance work performed by highway department personnel on County roads. At a total cost of over \$2,027,522.57, 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%
	<b>TOTAL</b>	<b>307</b>		

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 \$120,000.00 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 \$3,120,000.00 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	56	38.89%	79.86%
FAIR	5	26	18.06%	97.92%
POOR	4	2	1.39%	99.31%
SERIOUS	3	1	0.69%	100.00%
CRITICAL	2	0		
OUT OF SERVICE	1	0		
	<b>TOTAL</b>	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 7; 4 are posted due to SHVs and 3 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 \$150,000.00 to over half a million dollars. Using our average bridge size for calculation purposes it currently costs around \$325,000.00 to replace an entire bridge. At 3 bridges per year, we would need an additional \$975,000.00 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 187 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 187 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 187 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	12	6.42%	6.42%
GOOD	7	142	75.94%	82.35%
SATISFACTORY	6	3	1.60%	83.96%
FAIR	5	24	12.83%	96.79%
POOR	4	6	3.21%	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%
	<b>TOTAL</b>	187		

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 30 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 187 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 \$15,000.00 to \$150,000.00. Using an average current cost for calculation purposes of \$82,500.00 to replace a large culvert, at 4 culverts per year we would need an additional \$330,000.00 adjusted to the construction price index to keep up with material cost inflation.

# EQUIPMENT

We added 3 Western Star plow trucks to our fleet of 11 primary plow trucks and 4 spare plow trucks in 2023. 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 2023 we also purchased a new sign truck, two new pick-up trucks, and a set of Automated Flagger Assistance Devices (AFAD).



*(Photo courtesy of John Thomas Inc.)*

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: \$250,000**

**Road Broom: \$85,000**

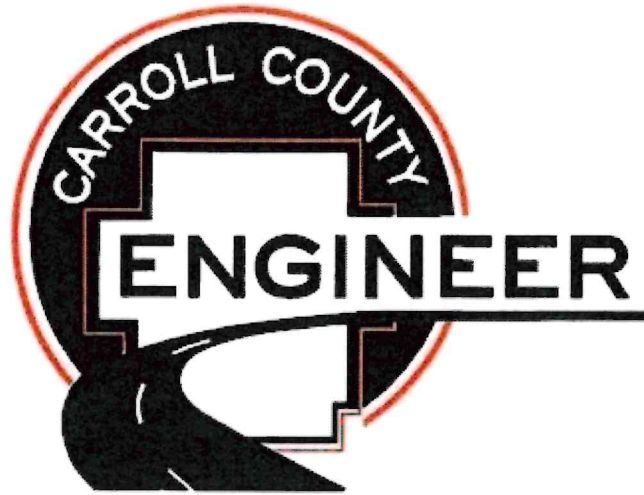
**Distributor Truck: \$175,000**

**Hydraulic Excavator: \$225,000**

**50 T Lowboy Trailer: \$75,000**

**Used Road Grader: \$150,000**

**Various hand tools, misc. small equipment and attachments, approx. \$25,000 per year**



**2023**

**RESOURCE  
ALLOCATION  
REPORT**

## HIGHWAY DEPARTMENT

The 26 full-time employees of the Carroll County Highway Department performed the following road and bridge work in 2023.

### PAVEMENT

- 270 tons of permacoat asphalt for pothole patching.
- 45 miles of roadway chip & sealed using
- 4,915 tons of #8 gravel/limestone and
- 189,060 gallons of liquid asphalt.
- 3,246 tons of permacoat and
- 136 tons of hotmix asphalt for road leveling totaling
- 70 miles.
- 117 miles of berm work totaling
- 3,461 labor hours.

### ROADWAY

- 1,789 labor hours for spot ditch cleaning and re-shaping.
- 986 labor hours for roadway storm cleanup.

### ROADSIDE

- 3,947 labor hours of roadway mowed by County employees.
- 844 labor hours of arm mower work to clear brush on steep banks.
- 1,922 hours manually removing brush and trees from roadways and road banks.
- 1,643 gallons of herbicide spray by others for brush control on the right-of-way.
- 355 gallons of herbicide spray by others for brush control at guardrails.
- 74,603 linear feet of guardrail sprayed with herbicide by others.

### CULVERT

- 1,463 labor hours to clean and check pipes.
- 46 culvert pipes replaced

### BRIDGES

- 144 bridges inspected.

### TRAFFIC OPERATION

- 643 traffic signs replaced or newly erected.
- 93 traffic signs replaced due to theft.
- 145 gallons of herbicide for weed control at intersections and sign posts.

### WINTER EMERGENCY

- 19 days of snow and ice control performed.
- 2,830 tons of snow & ice control mix.
- 2,026 labor hours.
- 1,610 equipment hours.
- 796 labor hours expended for winter emergency preparation.

### EQUIPMENT MAINTENANCE

- 5,274 labor hours.
- 60 licensed trucks, cars and trailers.
- 40 non-licensed construction equipment and other miscellaneous equipment such as chainsaws, compactors, welders and generators.

### HAULING/STOCKPILING ROAD MATERIALS

- 1,362 labor hours to haul and stock pile road materials.

### ROAD WORK FOR OTHERS

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

Augusta Twp.	34.50
East Twp.	57.50
Harrison Twp.	2.00
Lee Twp.	41.00
Union Twp.	43.00
Carroll County Agricultural Society	61.50
Carroll County Commissioners	7.50
Carroll Golden Age Retreat	90.50
Carroll County Historical Society	16.00
Solid Waste District	2.00
Carroll Electric Co-op	51.00
Fox Twp Fire Dept.	3.00
	<b>409.50</b>

## **ENGINEER'S OFFICE**

The Engineer's Office consists of 4 full-time staff personnel in addition to the Engineer. Highlights achieved in 2023 include:

- The administration of 144 right-of-way permits and 91 driveway permits.
- 21 special hauling permits were required.
- The preparation of payroll, statements for payment, billings and associated administrative work for our budget was performed on a daily basis.
- Application for \$729,950 from the State Issue I program for road, culvert and bridge projects.
- The preparation of specifications and bid documents for a variety of projects. These included: (a) replacement of the box culvert at Plymouth Road; (b) replacement of the Catfish Pond Truss bridge on Arbor Road (CR14); and (c) approximately 53 miles of centerline striping on various county roads.
- The performance of daily inspection and inspection reports on all contract work.
- Administration of 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:
  - Surveyed property owned by the CIC to transfer to a local manufacturer
  - Surveyed property for the County Commissioners to acquire real estate from the Sisters of Our Lady of Charity
  - Assisted the Regional Planning Commission with lot split reviews
  - Drafted revisions for the Regional Planning Regulations
  - Beta tested ODOT's new Location Finder Mobile App
  - Assisted ODOT in revising Carroll County's road inventory

## **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 2023 this office processed 2,091 deeds, 925 e-file deeds, 2,057 transfers and 114 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 18 employees in addition to 3 pre-employment DOT drug tests. Safety films/instructors were presented throughout the year to provide employees safety tips, reminders and precautions when performing their assigned tasks. Training seminars attended by various employees included:

- 2023 CEAO Conferences
- Excavator/Pipeline Program
- Holmes County mow max demonstration
- Spray program audit
- Tornado drill
- Sign Retroreflectivity
- Bridge Conference
- Work Zone Traffic Control & Safety
- Clearinghouse driver's license checks
- Automated Flagger Assistance Device (AFAD) training
- Summer help flagging training
- First Aid training
- Supervisors Guide to FTA Reasonable Suspicion Testing
- New employee training, including Flagging, Chipper, Snow & Ice Control
- Superintendents and Mechanics Conference
- Snow & Ice Control
- LTAP training for CDL overview
- Proper loading techniques
- CDL Training for Local Public Agencies
- Snow & Ice Control (Videos 8 & 9); On Spot Chains
- Skills Assessment for potential new mechanics

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