

2016

# Annual Report

The Geauga County Engineer's Office



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## Executive Summary

Thank you for taking the time to review and learn about the projects and maintenance that the Geauga County Engineer's Office managed in 2016.

Please utilize this document as an overview of the Engineer's responsibilities and performance to help you better understand the essential service that the Geauga County Engineer provides to the residents of Geauga County, Ohio.

The County Engineer is required per the Ohio Revised Code, Section 5543, to perform the following duties on all County roads and all bridges on county and township roads:

- Construction
- Reconstruction
- Improvement
- Maintenance



The County Engineer is also statutorily required to perform engineering services on all township roads.

The following document details the Geauga County Engineer's successful fulfillment of those duties in 2016.

Thank you,



Joe Cattell, PE, PS

## Joe Cattell, PE, PS

Joe was elected to the office of Geauga County Engineer in November 2012 and took office on January 7<sup>th</sup>, 2013. He was re-elected to a second term in 2016 and took office in 2017.

Prior to his election, Joe served as an employee at the Geauga County Engineer's Office from 1994-2013.

Joe received his Professional Surveyor's license in 2001 and his Professional Engineer's license in 1999.

Joe graduated from Cleveland State University in 1993 with a B.S. in Civil Engineering.

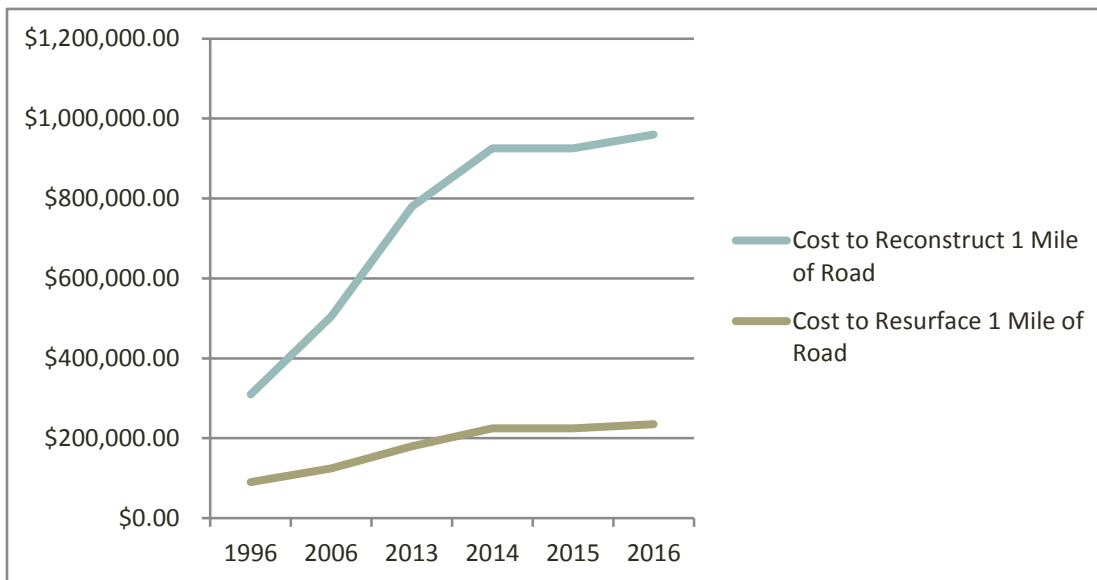


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## Cost Increases

While costs have increased exponentially over the past two decades, the Engineer's Office has combatted these rising costs by developing a more efficient and effective workforce that is able to provide higher quality services to residents while doing so with fewer resources. One of the most significant cost increases the Engineer's Office has experienced concerns the rising costs in asphalt materials. Since 1996, asphalt reconstruction project costs have increased by 300% and asphalt resurfacing projects have increased by 250%. During that same time, the Engineer's overall budget has increased approximately 47% over the past twenty (20) years.



Accordingly, the Engineer's Office has taken steps to better utilize and unleash the creativity of its most valuable asset: the dynamic, diverse, and creative people that make up the Engineer's Office. These people are finding new, creative, and more efficient ways to harness technology to provide faster speed of project execution that ultimately benefits the traveling public and the residents of Geauga County.

## Design, Funding, and Planning Department

Shane E. Hajjar, P.E., Deputy Engineer

The Design, Funding, and Planning Department is responsible for various project design duties on the 235.674 miles of county roads, 187 bridges, and 577.362 miles of township roads. This department uses professional engineering expertise to perform statutory engineering responsibilities for all County roads, all bridges and all 16 Township Boards of Trustees within Geauga County.

The Design Department performs the following statutory duties:

- Design of all bridges, culverts, ditches and roads
- Hydraulic studies
- Preparation of improvement plans, specifications, and estimates
- Right-of-way acquisition

The most recent assessment found that ninety-one percent (91%) of all County roads have a numerical rating of six (6) or higher.

### Condition Assessment of County Roads and Bridges

The County reports its roads infrastructure assets using the modified approach. The following disclosures pertain to the condition assessment and budgeted versus actual expenditure in 2016 for the preservation of these assets. The Geauga County Engineer administers a five year program for road and bridge repairs and improvements. This plan changes continually based upon conditional inspections and budget allowances.

A general overall numerical rating ranging from 0 to 9 is assigned to sections of roadways as a result of the yearly visual observations, with 0 being the lowest ranking and 9 being the highest. It is the practice of the Geauga County Engineer's Office to maintain at least eighty percent (80%) of the mileage of the county highway system at an appraisal rating of 6 or more. The most recent assessment found that **ninety-one percent (91%)** of all County roads have a numerical rating of 6 or higher.

ODOT Ratings	Gauga Road Mileage
Failure (0)	0
Imminent Failure (1)	0
Critical (2)	0
Serious (3)	0
Poor (4)	0
Fair (5)	21.21
Satisfactory (6)	45.84
Good (7)	54.26
Very Good (8)	50.49
Excellent (9)	63.88
<b>Total</b>	<b>235.674</b>

All 235.674 Centerline Miles of Geauga County Roads  
have a condition assessment of Fair to Excellent.

County Project	Miles	Bid Amount	Final Cost
CH 4 – Auburn Road (resurfacing) OPWC	2.75	\$636,464.80	\$621,924.44
CH 5 – Aquilla Road (mill and resurfacing) OPWC	2.55	\$651,606.80	\$660,895.57
CH 13 – Chardon-Windsor Road (resurfacing)	2.58	\$518,361.20	\$508,976.30
CH 15/21 – Hale/Butternut Roads (resurfacing)	2.45	\$430,181.50	\$421,725.65
CH 34 – Gingerich Road (reconstruct/resurfacing)	0.65	\$299,738.15	\$260,059.75
CH 37 – Clay Street (reconstruct/resurfacing) OPWC	2.33	\$636,384.26	\$615,565.91
CH 39 – Mulberry Road (mill and resurfacing) OPWC	5.07	\$784,803.53	\$757,999.62
Polyester Pavement Marking PPM 2016	N/A	\$172,076.00	\$169,659.91
Heath Road Bridge Replacement (two locations)	N/A	\$220,392.62	\$213,587.37
<b>2016 County Project Totals</b>	<b>18.38</b>	<b>\$4,350,008.86</b>	<b>\$4,230,394.52</b>



Through conservative design and diligent project management on County road and bridge projects, Geauga County Engineer project managers saved taxpayers a total of \$119,614.34 as the difference between the bid price and the actual project cost.

<b>Township</b>	<b>Project</b>	<b>Miles</b>
Auburn	Reconstruct – Ascot/Belmont Road	1.15
Auburn	Resurface –Washington Street	0.30
Bainbridge	Pavement Repairs – Various Roads	10.61
Bainbridge	Chip-Seal –Various Roads	5.95
Bainbridge	Resurface –Snyder Road	1.76
Bainbridge	Culvert Replacement – Sharon Road	N/A
Chester	Resurface –Various Roads	3.16
Chester	Chip Seal Project	3.82
Montville	Resurface –Whitney Road	2.30
Munson	Resurface –Rockhaven/Wye Roads	1.15
Newbury	Resurface –Munn Road and Elm Drive	1.33
Parkman	Chip-Seal –Hobart Road	1.58
Russell	Resurface –Watt Road	1.93
Troy	Resurface –Nash Road	0.50
<b>Total Township Project Mileage</b>		<b>35.54</b>

**2016 Township Project Bid Amount: \$4,534,277.31**

**2016 Township Project Finals Costs: \$4,320,767.08**

Through diligent project management, Geauga County Engineer project managers on township roads saved taxpayers a total of \$213,510.23 as the difference between the bid price and the actual project cost.

## Construction, Permitting, and Traffic Management Department

Nicholas J. Gorris, PE - Deputy Engineer

Department responsibilities in 2016 included:

- Traffic related studies including, but not limited to, volume counts, speed studies, crash review and analysis
- Culvert Inventory Management and Inspection for County and Township
- Management and inspection of all resurfacing, reconstruction, culvert and bridge replacements on all county and township roads
- Management of all Subdivision development, plan review of new and expanded subdivisions and permitting
- Prevailing Wage Law Contract Compliance
- The issuance of all new and replacement driveway culvert permits
- The issuance and enforcement of Highway Use Permits along all county roadways, including ten (10) of the sixteen (16) townships.
- The issuance of overweight/over-width hauling permits



### Construction Management & Inspection

The Geauga County Engineer's Office recorded over 6,500 hours of management and inspection services on the following County and Township improvement construction projects:

- One (1) Bridge Replacement Project
- Two (2) County Roadway Reconstruction Projects
- Five (5) County Roadway Resurfacing Projects
- One (1) Township Roadway Reconstruction Project
- Seven (7) Township Roadway Resurfacing Projects
- Two (2) Township Roadway Drainage Improvement Projects
- Four (4) Township Roadway Maintenance Projects
- One (1) Roadway Pavement Marking Project

The above referenced projects included the placement of over 92,000 tons of Hot Mix Asphalt, and the application of over 90 miles of Polyester Pavement Markings.

### COUNTY PROJECTS

Project	Start Date	Completion Date	Total Working Days
Auburn Road, CH 4, Sections A-C (Resurface)	20-Sept-16	13-Oct-16	22
Aquilla Road, CH 5s, Section C (Resurface)	8-Sept-16	12-Oct-16	11
Chardon Windsor Road, CH 13, Sections I-J (Resurface)	8-Jun-16	21-Jun-16	7
Hale Road, CH 15, Section A & Butternut Road, CH 21, Sections I-J (Resurface)	16-May-16	2-Jun-16	8
Gingerich Road, CH 34, Section A (Reconstruction & Resurface)	16-May-16	2-Jun-16	8
Clay Street, CH 37, Sections A-B (Reconstruction & Resurface)	1-Jun-16	28-Aug-16	51
Mulberry Road, CH 39, Sections E-I (Resurface)	17-Sept-16	26-Oct-16	11
County Wide – Polyester Pavement Marking	20-Jun-16	24-Jun-16	4
Cutts Road, TR 72 (Structure #72-00.49 Replacement)	31-May-16	30-Jun-16	24

Abbreviations: CH – County Highway, TR – Township Road

Construction Management & Inspection (continued)

**TOWNSHIP PROJECTS**

<b>Project</b>	<b>Start Date</b>	<b>Completion Date</b>	<b>Total Work Days</b>
Auburn Township: Reconstruction of Ascot Lane, TR 856 and Belmont Lane, TR 1006	5-Jul-16	9-Sep-16	30
Auburn Township: Drainage Improvements and Resurfacing of Various Roads	5-Jul-16	22-Jul-16	13
Bainbridge Township: Chip Seal of Various Roads	6-Sep-16	15-Sep-16	8
Bainbridge Township: Asphalt Pavement Repairs of Various Roads	16-Sep-16	18-Nov-16	16
Bainbridge Township: Resurfacing of Snyder Road, TR 192	12-Oct-16	18-Nov-16	12
Bainbridge Township: Sharon Road, TR 651 Replacement of Structure	29-Jul-16	5-Aug-16	6
Chester Township: Chip Seal of Various Roads	22-Aug-16	26-Aug-16	4
Chester Township: Asphalt Improvement of Various Roads	23-Aug-16	10-Sep-16	13
Montville Township: Resurfacing of Sections B & C of Whitney Road, TR 65	3-Oct-16	20-Oct-16	7
Munson Township: Resurfacing of Various Roads	24-Aug-16	13-Sep-16	5
Newbury Township: Resurfacing of Various Roads	24-Aug-16	30-Aug-16	5
Parkman Township: Chip Seal of Hobart Road, TR 218	8-Aug-16	2-Sep-16	3
Russell Township: Resurfacing of Watt Road, TR 158	12-Jul-16	23-Aug-16	17
Troy Township: Resurfacing of Nash Road, TR 207	5-Oct-16	24-Oct-16	6

Abbreviations: CH – County Highway, TR – Township Road

### Subdivisions

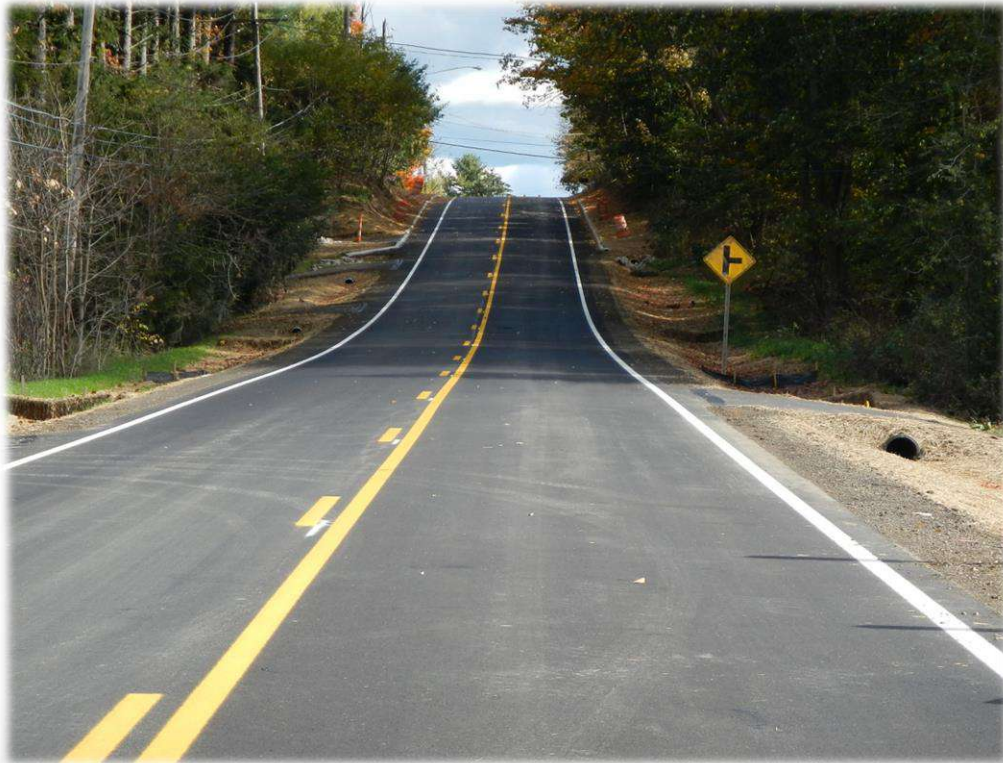
In 2016, four subdivisions were under active construction.

### Permitting

Twenty-Two (22) Highway Use Permits were issued allowing private contractors to work within the road right-of-way for the installation, maintenance, and/or replacement of private infrastructure projects.

Two hundred four (204) Drive Permits were issued for the installation of new driveway culverts and the replacement of existing driveway culverts. In addition one hundred twelve (112) new addresses were issued to existing parcels.

Eight (8) "Over-Width" permits for annual, single trip and return operations were also issued.



## Bridge Department

Andy Haupt, P.E., P.S., Deputy Engineer

The County Engineer is responsible for inspecting and maintaining Geauga County's 187 bridges located on county and township roads.

The Bridge Department, along with all other state-wide entities, have made the transition to the Ohio Department of Transportation's Structure Management System for reporting 2016 inspection year condition ratings, work orders, and inventory updates. Through effective management of inspection data, the Engineer has developed a scheduled bridge maintenance program to efficiently preserve and extend the life of these essential pieces of infrastructure.



Each bridge is evaluated annually based on the State and Federal Law and in accordance with Ohio Department of Transportation (ODOT) recommendations. Each bridge is given an ODOT sufficiency rating and an overall appraisal rating based upon bridge inspection rating factors. The County Engineer's Office is responsible to maintain all bridges located on County and township roads in Geauga County. The most recent inspection assessment found that ninety-eight percent (98%) of the County bridges have a numerical rating of 5 or higher.

ODOT Ratings	Gauga County Bridges
Failure (0)	0
Imminent Failure (1)	0
Critical (2)	0
Serious (3)	0
Poor (4)	4
Fair (5)	11
Satisfactory (6)	23
Good (7)	39
Very Good (8)	92
Excellent (9)	18
<b>Total</b>	<b>187</b>



**98% of Geauga County Bridges Are Rated Fair To Excellent.**

## Survey Department

Andy Haupt, P.E., P.S., Deputy Engineer

The survey department continues to improve and develop as a team.

The Engineer's Office effectively and efficiently utilizes recently acquired cutting edge survey equipment consisting of a robotic total station and GPS receiver configured to utilize the Ohio Department of Transportation's VRS (Virtual Reference Station) system which has enabled the survey department to increase efficiency and accuracy, while utilizing fewer staff members per survey crew. The department provided the Engineer's Office with the following survey related data collection:

- Control
- Topological
- Drainage
- Easement
- Right-of-Way and centerline surveys

The Survey Department supported the Design Department by providing record research, records assembly, and diligent field recovery of monuments.

The Survey Department also supported the townships by performing centerline retracement, right of way staking, drainage surveys, record research of easements, as well as right of way vacations and dedications.



## Highway Maintenance Department

Trace Turnbull, Highway Superintendent

The Geauga County Engineer Highway Maintenance forces maintain approximately 236 miles of county roads and 187 bridges. During the 2016 calendar year, the Department worked tirelessly to respond to requests from residents. County forces also efficiently and safely provided snow and ice control measures on county roads and bridges.

The Maintenance Department worked closely with the Design and Construction Departments by ditching and grading the roadsides prior to resurfacing projects to ensure proper drainage. The department also maintained all roadside signs on county roads to ensure safe and efficient traffic control.

The list below indicates some of the work completed by the department in 2016.

- Crack Sealing Program
  - Material Used: 108,814 Pounds
  - Material costs: \$43,416.79
- Asphalt Repair Program
  - Asphalt Type 404 – 1,224.92 tons
  - Asphalt Type 402 – 453.27 tons
  - Asphalt Type 301 – 102.96 tons
  - Total asphalt cost \$105,300.25
- Tree Cutting and Removal
- Bridge and Culvert Repair and Maintenance
- Ditch Repair and Maintenance
- Sign Management and Replacement



In 2016, the Geauga County Engineer's Office utilized the Resource Rental Program (RRP) to assist numerous townships with highway maintenance work.



 <b>2016 Resource Rental Program:</b> Brought to you by: Geauga County Engineer, Joe Cattell, PE, PS		
2016 Year End Wrap-Up:		
March/May 2016 May/June 2016	<b>Bainbridge Township</b> Seeding of Right of Ways Ditches, Clean	<b>\$1,344.03</b>
August 2016 September 2016 September 2016	<b>Barton Township</b> Lights and Signs, Install Crack Seal Mow Trim	<b>\$8,351.01</b>
September 2016	<b>Chardon Township</b> Seeding of Right of Ways	<b>\$3,46.83</b>
October 2016 November 2016	<b>Chester Township</b> Crack Seal Crack Seal	<b>\$18,606.76</b>
May 2016	<b>Dept. of Emergency Services</b> Crack Seal	<b>\$1,135.86</b>
October 2016	<b>Hamden Township</b> Crack Seal	<b>\$11,427.54</b>
August 2016	<b>Huntsburg Township</b> Crack Seal	<b>\$1,916.56</b>
May 2016	<b>Montville Township</b> Full Depth Repair, Pavement	<b>\$2,823.28</b>
June 2016	<b>Muscon Township</b> Seeding of Right of Ways	<b>\$291.64</b>
September 2016	<b>Parkman Township</b> Hot Box	<b>\$50.00</b>



Completed Projects	
Through these completed joint efforts, local communities with the assistance of the Geauga County Engineer's experienced personnel and equipment, the county and townships were able to exchange knowledge and skills which translated into effective and efficient use of taxpayer funds. Further, this proficient and cooperative use of resources will continue to benefit the residents of Geauga County for the foreseeable future.	
Rental Cost Examples	
 GRADALL XL3100IV Hydraulic Excavator Includes: Operator & Fuel	\$100/hr
 John Deere 6400 Mid-Spec 4WD Cab Tractor with 22" Ambrose Broom, 60" Rotary Mower Includes: Operator & Fuel	\$75/hr
 Crafco Super Shot 125, Diesel Compressor, EZ Series II, 500 Gallon Melter (Crack-sealer) Includes: Operator, Fuel & Material (material supplied by customer only)	\$65.00/hr plus material
 Dump Truck, Single Axle, Class 8, 8 CY, 40,000 GVW Includes: Operator & Fuel	\$65.00/hr
 Maintenance of Traffic: Flagging operation- two flaggers 	\$40/hr (Summer Rate)
CALL FOR ADDITIONAL AVAILABLE RESOURCES	
AN EFFECTIVE RESOURCE PARTNERSHIP	
ALL THAT IS REQUIRED FROM YOU TO PARTICIPATE IN THIS PROGRAM: <ul style="list-style-type: none"> <li>• AGREE TO AND ACCEPT THE TERMS OF THE RESOURCE RENTAL PROGRAM</li> <li>• PASS THE RESOLUTION TO PARTICIPATE IN THE GAUGUA COUNTY ENGINEER RESOURCE RENTAL PROGRAM PROVIDED BY THE GAUGUA COUNTY ENGINEER</li> <li>• IDENTIFY THE MAINTENANCE PROJECTS OF WHICH YOU REQUIRE ASSISTANCE</li> <li>• CONTACT TRAC FOR SCHEDULING</li> </ul>	
FOR MORE INFORMATION, PLEASE CONTACT: TRACE TURNBULL, HIGHWAY SUPERINTENDENT 440 279-1806 or turnbull@co.geauga.oh.us	

The goal of the RRP is to encourage resource sharing with Geauga County entities that are responsible for highway maintenance, thus reducing the overall burden on taxpayers.



## Administrative Department

Frank Antenucci, Esq., Administrator

The Administrative Department is responsible for providing the support services necessary for the County Engineer's Office. These responsibilities include the following areas of work:

- Human Resources Administration
- Employee Training and Safety Programs
- Drug and Alcohol Training and Testing
- Benefits Administration
- Payroll
- Invoice Procurement and Processing
- Prevailing Wage Compliance
- Contract Negotiations
- Records Retention
- Ohio Public Records Compliance

The Administrative department has focused on moving forward by using technological advances to become more effective and efficient. Accordingly, the department has a dual role in supporting and managing the day-to-day activities of the Engineer's Office, and also coordinating the long-term strategic planning and procedural improvements for the Office.

The department has been responsible for managing the scanning, digitizing, and organization of all historical records. These historical records once encompassed over twenty file cabinets and included the following documents: survey data, correspondence, and past road project information. They once used a significant amount of office space and required hours of tedious searching to acquire a specific document. The department is working to scan and digitally index all of these files for efficient storage and easy document acquisition. This ease of document acquisition not only aids engineering staff for faster research, but also aids the public in quicker and more efficient public records research.

Further, the Administrative department has worked to rewrite and update specific policies related to the long-term administration of the Engineer's Office.

## Safety Committee

Frank Antenucci, Rick Carlson, Robert Hanck, Dave Loucka, Kevin Shea, Trace Turnbull

The Engineer's Safety Committee exists to encourage all employees of the Geauga County Engineer's Office to actively participate in suggestions pertaining to health and safety issues relevant to employment and also to recognize outstanding employee performance safety suggestions that make the Geauga County Engineer's Office a safer and healthier place to serve.

The Safety Committee's job is to provide safety planning, problem solving, and strategic safety related leadership for The Geauga County Engineer's Office. The Safety Committee works as a vehicle to ensure that safety

suggestions from employees are received, considered, and possibly implemented. Ultimately, the Safety Committee exists to improve safety and heighten awareness of health and safety issues for all employees of the Office.



## Staffing

As mentioned previously, to combat the rising costs associated with engineering projects, the Engineer's Office has been forced to reduce staff through attrition, while still ensuring that the Office provides Geauga County with the very best engineering services and highway maintenance. The Office has improved its ability to further utilize a higher creative output and faster speed of execution from the people that make up the Engineer's Office.



The Engineer's Office, and Geauga County, is fortunate to employ servant-minded people who care that they fulfill their role to ensure the safe and efficient travel of the public in Geauga County.

### Promotions in 2016

Rick Carlson – Fleet & Inventory Manager

Bill Dudinsky – Foreman

Joe Prosser – Foreman

Katie Schaab – Fiscal Officer

### New Team Members in 2016

Mike Martin – Highway Worker I

Rick Weikart – Highway Worker I

Dave Peterson – Highway Worker II

### Retirements in 2016

Kristy Filppi – Fiscal Officer

Carl Matthews – Foreman

Brian Phillips – Equipment/Maintenance Manager

## Current Employee Listing

Frank Antenucci, Esq. – Administrator	Steve Markey – Engineer Technician II
Ray Busser – Highway Worker IV	Mike Martin – Highway Worker I
Rick Carlson – Fleet & Inventory Manager	Brandon Martz – Highway Worker I
Keith Delfs – Survey Technician III	Mike Pennell – Highway Worker III
Mike Donaldson – Mechanic V	Dave Peterson – Highway Worker II
Bill Dudinsky – Foreman	Rick Poff – Highway Worker IV
Mike Farrell – Highway Worker III	Alan Prescott – Bridge Designer/Inspector
Nicholas Goodrich – Survey Technician II	Joe Prosser – Foreman
Nicholas J. Gorris, PE – Deputy Engineer	Ron Quercioli – Highway Worker IV
Bob Hagenbaugh – Maintenance Repair Worker II	Darrell Robinson – Highway III
Shane Hajjar, PE – Deputy Engineer	Tom Ross – Highway Worker V
Bob Hanck – Assistant Highway Superintendent	Katie Schaab – Fiscal Officer
Don Hatch – Mechanic IV	Kevin Shea – Highway Worker II
Andy Haupt, PE, PS – Deputy Engineer	Ben Shrock – Engineer Aide
Bridget Holy – Clerk/Receptionist	Zack Sipan – Highway Worker II
Kevin Holy – Highway Worker IV	Lee Thomas – Highway Worker III
Jerad Howes – Highway Worker I	Trace Turnbull – Highway Superintendent
Rory Judd – Mechanic III	Dave Tvergyak – Highway Worker V
Nick Kovach – Foreman	Kirk Walker – Highway Worker V
Paul Kucharski – Engineer Technician I	Scott Warner – Foreman
Ken Lewis – Highway Worker IV	Robert Weigle – Highway V
David Loucka – Engineer I	Rick Weikart – Highway Worker I

This report sets forth the condition of the roads, bridges, culverts, and facilities under the responsibility of the County Engineer. It includes an estimate of the funds needed to maintain and improve this infrastructure and complies with the requirements of the Ohio Revised Code Chapter 5543.



# 2016

End