



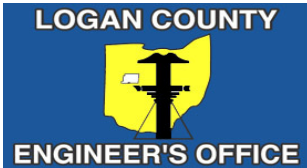
The Orange Brigade



Winter 2017

Logan County Engineer's Office

Volume 50



Coleman's Comments

Thank you for your continued support of the 1/2% sales tax for roads and bridges. The five year renewal for the sales tax passed with 66% support of the voters. The sales tax benefits county, township's and municipalities in Logan County.

The sales tax for roads and bridges has become vital for the maintenance of local roads and bridges. The Ohio Legislature has shown no appetite for funding local road and bridge maintenance. We see a shortfall of approximately \$1.8 million per county throughout Ohio for road and bridge funding. The Ohio Legislature has made it very clear that they expect each county to fund this shortfall through local tax levies. Our one-half percent sales tax for roads and bridges generated \$3,472,516.99 in 2016. These funds are collected and divided among county (\$2,083,529.76), townships (\$555,607.95), municipalities (\$555,607.94), and land use and economic development (\$277,803.95).

By combining sales tax with motor vehicle fuel tax, vehicle registration fees, federal grant and state grant funds, we were able to complete several construction projects in 2016. County road resurfacing totaled \$1,225,814.89. Township resurfacing was \$283,387.26 and township chip-sealing totaled \$506,938.50. Motor vehicle fuel tax and vehicle registration fees were used to fund \$61,382.16 for the pavement marking paint contract and \$680,639.04 for county road chip sealing. These projects would not have been possible without the sales tax for roads and bridges. Thank you for supporting this program.

After two years of road salt shortage, we have finally seen prices stabilize for the 2016-2017 winter season. Last winter we paid \$76.24 per ton for road salt and entered winter with a full stockpile. The road salt bid for this winter fill is \$51.46 per ton and savings will kick in when we start refilling our stockpile. This will lead to an overall cost reduction for snow and ice removal. Snow and ice control costs can range between \$300,000 and \$660,000 depending on the number of

snow and ice events and material costs. Through December 31, we have responded to 12 winter storm events and have used 549 tons of road salt at a total cost of \$167,825.18.

In addition to salt, we continue to utilize liquid Beet Heet, a sugar beet extract, to increase the efficiency of our road salt treatment. The use of Beet Heet allows us to melt snow and ice faster and at lower temperatures. This fall we added a third 2,100 gallon storage tank so that we can take delivery of a full tanker load of Beet Heet at one time, which reduces delivery costs. As always, we encourage drivers to use caution and allow extra travel time when driving during winter weather conditions. Even though roads have been treated and plowed, you may encounter isolated slick road conditions.

In March of 2014, the Ohio Department of Natural Resources (ODNR) and Federal Emergency Management Agency (FEMA) notified Logan County officials that they had updated the base flood elevation (BFE) and Flood Insurance Rate Map (FIRM) for Logan County without any input or consultation with any Logan County agencies. In July 2014, ODNR and FEMA held public meetings to present the revised flood maps to the public. After the July meetings, we requested that ODNR/FEMA consider several adjustments. In December 2014, ODNR/FEMA notified Logan County that the 90 days appeal period for the new flood maps had begun. Logan County filed our appeal on March 6, 2015. On August 31, 2016, FEMA approved our request to adjust the BFE of Indian Lake from 997.6 feet to 997.5 feet (NAVD88). In September the Logan County Commissioners requested that the new BFE of 997.5 be incorporated into the new FIRM, requested that FEMA provide Logan County with a Flood Insurance Advocate to assist us with our appeal of the preliminary flood rate maps, and requested good-faith consultation with FEMA.

Sincerely,
Scott C. Coleman, P.E., P.S.
Logan County Engineer

Zanesfield Drainage Project– Phase I

*By: Cale Jacobs, P.E.
Assistant Engineer*

The summer of 2016 saw the completion of the first phase of a four phase project to help alleviate drainage issues on the west side and throughout the Village of Zanesfield. Water naturally flows from west to east through the village so in order to handle issues on the west side the first hurdle to overcome was securing a good and adequate outlet to the Mad River. Phase one consisted of intercepting an existing field tile on the western side of the Chamber of Commerce's property known as the Hall - Fawcett Park and then installing over 1,200 linear feet of open drainage ditch south along the park property and then east running along County Road 153 to the Mad River. Two new 36" culverts were installed under the park entrance drive.

This project was made possible by an Ohio Public Works Commission Grant with matching funds provided by the Village of Zanesfield. The project was awarded to Levan's Excavating Inc. out of West Liberty in the amount of \$38,709.46. The village's portion of the project totaled \$5,978.46.

The Village of Zanesfield has secured further OPWC grant monies for Phase III and those plans are currently under development by the county engineer's office and should be constructed in the summer of 2017. Last fall the village submitted an OPWC grant application for Phase IV and that application is still pending.

Safety Update

*By Todd Bumgardner
Administrative Coordinator*

While not the first thought when one thinks of safety, radio communication does fall into this category. In 2011 new Federal FCC rules forced a change to our radio licensing from a wide band 800 MHz analog signal to a narrow band signal. We opted to change to a VHF digital signal to reduce our overall costs. This change was originally projected to cost our operations nearly \$90,000. Soon after release of the new rules our office realized the forced change could take place over the course of time. In 2012 our office began to seek funding grants through Logan County Emergency Management Agency (EMA) to assist with the cost of the change.

In the years that followed we attained a new digital frequency license along with three grants through the Logan County EMA. With the grant funding we began to install radios that would serve our needs at the time and could be reprogrammed to fulfill our needs in the future. In 2016 the Logan County Sheriff upgraded their radio system. The radios that were no longer capable of working on the Sheriff's Office new system were traded to our office where they could continue servicing Logan County. These additional radios made it possible for our Logan County Highway Department to make the final transition to the VHF narrow band digital signal.

In late December the Logan County Engineer's Office stopped transmitting on our 800 MHz analog frequency. After our first week the initial impression of the VHF signal is good. Our communications are clearer and have a more reliable connection. In the coming months we will continue to fine tune our new VHF digital system and add a few remaining mobile radios. The final out of pocket cost to our operations for the entire project are estimated to be less than \$20,000. A big thank you goes out to The Logan County EMA and The Logan County Sheriff's Office for making this 5 year transition achievable.

EMPLOYEE GENEROSITY



Our employees gave generously to the Logan County United Way this year raising \$1,292.00. Many local charities will receive these contributions over the coming year.

Highway Update –Shoulder Improvements

*By Joel Miracle
Highway Superintendent*

This fall the highway crew performed two shoulder improvement projects; County Road 8 west of West Mansfield and County Road 200 at the south end of Bellefontaine. Due to the increased volume of local traffic and heavy truck traffic, we contracted with Shelly Company to stabilize and widen the edge of our pavement. 2,725 tons of base material were used and then over laid with 3,433 tons of surface mix.

The highway crew went to work hauling dirt from a local quarry for over 16 days to extend the shoulder and seeded over 400 pounds of grass seed. A highway shoulder is a necessary part of all highway and county roads. Adequate shoulder cross slope along with a stabilized berm stone is necessary to support the road and provide a recover zone for errant vehicles.

Pavement cross slope is an important cross-sectional design element. The cross slope drains water from the roadway laterally and helps minimize ponding of water on the pavement. This minimizes maintenance problems and also minimizes icing from occurring on poorly drained pavement. On roadways with curbed cross sections, the cross slope moves water to the gutter adjacent to the curb, away from the travel lanes, where it can be removed.

The highway shoulder serves several functions:

- It provides a means of protection for the pavement surface from water intruding under the pavement, one of the greatest destroyer's of asphalt.
- It serves as a lateral support to the pavement.
- A wide shoulder provides a temporary parking area for disabled vehicles.
- It provides a partial storage area for snow during the winter months.
- It serves as a safety feature for the public as you approach oncoming vehicles and farm machinery.



Employee Milestones

*By Donna Dahlke
Personnel Specialist*



Two employees reached their ten (10) year milestone this year. Congratulations to Greg Kennaw and Mark Elliott Fullerton. **Thank you** for your dedicated service!

New Employee

*By Donna Dahlke
Personnel Specialist*

We are pleased to welcome Cole Craig to our Highway Crew. Cole is a graduate of Ohio Point J.V.S. Professional Turf and Landscaping class and his experience and education has been a great asset to the Logan County Engineer's Office. WELCOME Cole !

Map Room

*By Suzie Cochran
Map Room Supervisor*

In 2016, the Map Room Staff checked legal descriptions on 2,647 real estate documents. There were 2,093 deeds, 420 Affidavits, 64 Certificates of Transfer, 35 easements and 35 land contracts. Additionally, 1 condominium plat & 1 annexation plat were approved and recorded. New property splits totaled 102 for the year with 80 documents being new surveys.

Surveyors submitted 252 new legal descriptions that were reviewed, approved, indexed, scanned and filed by the Map Room personnel. In addition, 27 new house numbers were assigned in 2016.

The records of the Map Room can be found on the Logan County Engineer's Office website at: www.loganco.co.logan.oh.us/engineer/.

Ditch Maintenance & Traffic Department

*By Steve Tracey
Ditch/Traffic Superintendent*

The Ditch Department has performed maintenance throughout the county after finishing a busy mowing season along 371.85 miles of county road plus 44 miles of open ditch and waterway. Four rounds are made during the mowing season on the county roads and two rounds on the petition ditches and waterways.

The Ditch Department has repaired two tiles on the Banning Joint Ditch, the Fun Place Ditch and the Milner Ditch. Dump rock and broken concrete were used for erosion control in various places on the Stoney Creek, the E.B Fry and Mad River ditches where water had slid the banks off the ditches. A full center dip was performed on the E.B. Fry and the inlet of the Pence Ditch so that the tile could function properly and provide better drainage.

The Sign Department has been busy maintaining our 7,051 signs. Sign upgrades (new posts and high intensity signs) have been installed for Bokescreek and Lake Townships. The Sign Department is currently double posting advanced warning signs that are larger than 36" x 36" to better secure the larger signs from wind damage.

We have recently purchased new 6 ft. and 12 ft. barricades for road closures and advanced warning as some of our old barricades did not meet current standards.



2017 Federal and State Funding

*By Todd Bumgardner
Administrative Coordinator*

In the coming year our office is projected to receive \$1,029,016 in Federal and State Funding for our highway program. The following is an outline of these funds and their intended purpose.

1. \$793,916 is scheduled to be received from The Ohio Public Work Commission (OPWC). In Logan County the OPWC funds are earmarked for highway reconstruction. These funds are projected to be used for to fund a portion of our 2017 county resurfacing.
2. \$235,100 is scheduled to be received from the Federal Highway Safety Improvement Program (HSIP) administered by Ohio DOT and County Engineer's Association of Ohio. These HSIP funds are scheduled to assist with the cost to complete the following 2017 projects:
 - a. \$150,000 for upgrade pavement markings on various roads on the county highway system
 - b. \$50,000 for continued upgrade of our current inventory of 7,051 regulatory highway signs
 - c. \$35,100 to study our over 700 lane miles of roadway for curve analysis and sign recommendations

In order to receive these funds our office will provide a local match totaling \$12,500 or 1.2%. The Logan County Engineer's Office is continually looking for ways to make the most of the funds that are provided and being good stewards for the taxpayers of Logan County.

Storm Season

High winds can cause broken, jumbled masses of branches and trunks under enormous pressures, just waiting for the wrong cut to set them off. Saturated soils can cause complete tree failures, with trees on top of structures and elevated counterweighted root wads. Throughout every work site lurks the possibility of downed and energized lines waiting to be touched by man or machine. Throw in some ice and snow for good measure and an already chaotic situation becomes a slip, trip, falling, and driving hazard brought to life.

Basic safety, appropriate PPE and safe work practices/habits go a long way in meeting the challenges of a storm. Crews involved in cleaning up after storms have to be extremely vigilant and evaluate all the possible forces acting on the branch or tree prior to making that first cut.

Spring poles: one of the most challenging and dangerous items to be confronted with during storm clean up. This is a branch or entire tree that has been pinned down and is under immense pressure by another piece of wood or even snow or ice.

Safety Tips and Procedures:

- Determine the safest area to work on the tree and this may require clearing in and of itself.
- Estimate which direction the pole is going to move if it releases prematurely-make the workstation outside of that path.
- Assure good footing with minimal amount of trip hazards before beginning work on the spring pole.
- Release the pressure of the spring pole as gradually as possible, "bleeding off" the power the bent branch or tree holds.

Two methods would be-

- shave off small amounts of fiber on the compression side of pole and creating an elongated shallow notch and let the pole move at its own pace to release the pressure.
- make a series of small, shallow cut on the compression side creating a "weak spot" that the pole can release pressure into.

Battling Salt Corrosion

*By: Mark Hilty
Operations Superintendent*

Early winter of 2016 has found us facing corrosion problems again. It was discovered during annual service that two of our mainline trucks purchased in 2010 have developed leaks in the oil pans from salt corrosion. Replacement cost on each pan is roughly \$700.00 plus labor. Knowing that these trucks have up to another 8-10 years of service, it was suggested by one of our mechanics that we have the new oil pans sprayed with Line-X bedliner before installation at a cost of \$75.00 each. This small cost should prevent this problem for the rest of the service life of these trucks.

In 2015 we started taking steps to help prevent these corrosion issues. After speaking with our mechanics we are seeing little to no corrosion on the newer trucks we had sprayed with Krown rust prevention and has appeared to slow down the rust on our hills truck. Last year we added more trucks to the list along with our loader and have seen great results.

Our crews are also doing their part by washing and using Salt Eliminator after snow and ice events. Great job everyone!

Deer Alert !

Deer season is upon us and the Ohio Department of Public Safety, Ohio State Highway Patrol, and Ohio Department of Natural Resources offer precautionary measures and information for motorists:

- Highest-risk periods are from sunset to midnight followed by the hours shortly before and after sunrise.
- If you see one deer on or near a roadway, expect that others may follow. Slow down and be alert.
- After dark, use high-beams when there is no opposing traffic. The high beams will illuminate the eyes of the deer on or near a roadway and provide greater motorist reaction time. But don't rely solely on high-beams or deer whistles to deter such collisions.
- Always wear a seat belt as required by state law and drive at a safe, sensible speed for conditions.
- Don't swerve your vehicle to avoid striking a deer. If a collision with a deer seems probable, then hit it while maintaining full control of your vehicle. The alternative could be even worse.
- **STAY ALERT.** Deer are often unpredictable, especially when faced with glaring headlights, blowing horns and fast-moving vehicles. They often dart out into traffic on busy highways in metropolitan areas.
- Report any deer-vehicle collisions to a local law enforcement agency (such as the Ohio highway Patrol or county sheriff) or a state wildlife officer within 24 hours.
- Under Ohio law, the driver of a vehicle that strikes and kills a deer may take possession of it by first obtaining a deer possession receipt. These are available from law enforcement or state wildlife officers, and from local Divisions of Wildlife district offices.



Historic BR 21-1.00 Update

*By: Michael Kerns
Assistant Engineer*

This 135-year old bridge was closed temporarily in late December after the Routine and Fracture Critical inspections revealed section loss on some of the stringers and floor beams. A couple weeks later, after performing more field inspections and a structural evaluation of the bridge components in question, the bridge was reopened to a three ton load limit.

All bridges in the county are given routine inspections once a year but the hands-on Fracture Critical inspection allowed staff to see the true severity of the aforementioned section loss. Fracture Critical inspections are federally required to be performed every two years on fracture critical bridges, which are structures that don't have redundancy built into them and thus are at a high risk of collapse if a single, fracture-critical component were to fail.

The Whipple truss bridge spanning the Great Miami River has been in deteriorating condition for decades, starting with a reduction to 75% of the legal loading in 2006, then in 2011 a nine ton limit on single and double axles with a ten ton limit on triple axles and a twelve ton limit on semis was posted, and last winter a nine ton load limit was applied to all vehicles.

We apologize for any inconvenience the current load limit and a possible future closing may cause as the existing bridge was set to be fully rehabbed using federal funds in 2015 until public concerns were voiced at a 2014 public meeting. These concerns led the department to seek funding for a 55-mph two-lane bridge, which is to be completed by the end of summer of 2020.

In order to closely monitor any further degradation of the bridge we will inspect it every three months, an aggressive measure to ensure motorist safety. Care should be taken for those vehicles that can legally cross this structure as deicing is done on a limited basis to help prevent salt from accelerating the erosion of the members.



Bridge Crew Update

*By: Dan McMillen
Bridge Superintendent*

BR 20-6.53 near Horton was one of the major bridge projects of the year and it involved replacing a dilapidated galvanized pipe arch with a 50-foot span precast box beam structure. The pipe arch was placed in 1974 after the previous bridge, a Pratt truss that was posted with a 75% load reduction, collapsed when an overweight truck tried to cross. This historical background of BR 20-6.53 underlies the extreme importance of adhering to load limits. Prestress Services out of Mount Vernon, Ohio, won the bid to provide and set the box beams and the Bridge Crew provided the rest of the work. This included demolition, excavation, abutment construction, pouring a cast-in-place concrete deck, guardrail installation, and final earthwork grading.



The rehabilitation of BR 12 - 6.51 was the first of its kind for the Bridge Crew as they had never installed a superstructure composed of stay-in-place metal forms. The entire process involved removing the existing rusted out metal deck, wire brushing the existing steel beams and applying a cold galvanizing compound to them in order to protect against future rusting, installing stay-in-place metal forms and overhanging brackets for the deck's exterior to support the cast-in-place 37'-8" x 24' concrete deck, and installing new guardrail and guardrail posts to meet current ODOT specifications. The end result saved a substantial amount of money versus the possible alternatives of building an entirely new bridge, ordering new steel beams and/or using a much heavier gauge metal deck .



Recent maintenance work involved removing a large dead ash tree on TR 116-0.55 and cutting several trees that were on the sides of bridges on CR 4, CR 65, CR62 and CR 63. In addition, the bridge crew crack sealed twelve bridges, cleaned the outlet of a large culvert on TR 56 for Lake Township, and repaired two bridges, BR-39-6.80 and BR 277-0.32, that were heavily damaged by car accidents.