



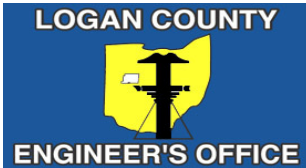
The Orange Brigade



Summer 2018

Logan County Engineer's Office

Volume 53



Coleman's Comments

This past winter has been challenging with extended extreme cold that delayed construction projects and then a long winter with cold weather that extended well into April. These weather patterns shortened our early construction season for road repairs and preparation for the upcoming resurfacing and chip sealing programs. We have pushed our start date for chip seal to July 9 and the paving contractor will be paving county and township roads in late summer and fall.

Since then we have experienced some periods of very hot weather and very regular rainfall. The mowing crews have been struggling to keep pace with the roadside ditch mowing. Normally, we would do full width mowing on our second round through the county. However, grass has been growing so fast that we have had to do a single pass only on the second round and concentrate on intersection sight distance. The mowing crews are close to finishing this second round and all of the maintenance ditches. Then we will be able to proceed with full width mowing on the third pass. We appreciate your patience.

This past winter season was above average for snow and ice control costs. We spent \$453,772.60 on winter road treatment, which is above the average cost of \$369,000. This past winter, we paid \$47.12 per ton for salt. We just received the results of the statewide bid for road salt, and our cost for this coming winter will be \$84.94 per ton. So we know heading into winter that we will experience an 80% increase in road salt costs. We will plan to maximize our use of Beet Heet® sugar beet molasses for prewetting our salt and controlling our material costs while maintaining our level of service for road treatment.

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.

- July 2014, ODNR and FEMA held public meetings to present the revised flood maps to the public.

- late 2014, we requested that ODNR/FEMA consider several adjustments.
- December 2014, ODNR/FEMA notified Logan County that the 90 day appeal period for the new flood maps had begun.
- March 6, 2015 Logan County filed our appeal.
- August 31, 2016, FEMA approved our request to adjust the BFE of Indian Lake from 997.6 feet to 997.5 feet (NAVD88).
- September 2016, the Logan County Commissioners requested that the new BFE of 997.5 feet 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.
- June 6, 2017, FEMA may adjust the FIRM maps for Indian Lake to reflect the adjusted BFE of 997.5 feet (NAVD88) but they intend to proceed with adopting the preliminary maps.

In December, 2017, the County Commissioners contracted with DLZ Engineering to complete high accuracy surface modeling of the Indian Lake area that provides the county with very good elevations of the lakefront and surrounding properties. The commissioners plan to proceed with appealing the preliminary FIRM maps and submit our high accuracy surface model to be included in a final FIRM update.

The County Commissioners and County Engineer continue to advocate on behalf of our residents for accurate Flood Insurance Rate Maps.

** FEMA does not reimburse landowners for elevation certificates that result in a Letter of Map Amendment (LOMA). However, landowners may be eligible for reimbursement of flood insurance premiums.*

Sincerely,

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

The Nuts and Bolts of Residential Access Management

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

Access Management Regulations were adopted in June of 2017 for all county and township roads throughout Logan County. These regulations provide a uniform process for obtaining driveway permits throughout the county through the Engineer's Office. Township trustees no longer issue any driveway permits. New access (driveway) locations are determined by several new requirements such as, drive classification, road function classification, driveway separation, and stopping sight distance. The following information is a general summary of the regulations:

Access classification:

Minimum Volume Drive: field drive (no buildings) & utility drive

Very Low Volume Drive: farm drive (ag bldgs), single family residential drive, single-family common access drive (CAD), multi-family residential drive (less than 4 units), trail drives

Road Function Classification:

Major Collector Road: CR 1, CR 5, CR 10, etc.

Minor Collector Road: CR 12, CR 37, CR 39, CR 153, CR 63 etc.

Local Road: Low volume county roads and township roads

(Please check the functional classification road map on our website for further clarifications)

Driveway spacing:

Each different access classification has specified distances new drives must meet from existing drives and intersections depending on the roadway classification.

Stopping Sight Distance (SSD):

Stopping sight distance is the distance required by a driver to recognize an obstacle in their path, safely apply the brakes, and bring the vehicle to a stop. We have adopted ODOT's Stopping Sight Distance Guidance Document.

Road Class	Very Low Volume Drive Farm, single-family, multi-family		Minimum Volume Drive Field - Utility		SSD
	Spacing	Dist. From Intersection	Spacing	Dist. From Intersection	
Major Collector	495'	495'	25'	120'	495'
Minor Collector	360'	360'	25'	120'	495'
Local Road	250'	250'	25'	120'	495'
	No more than one driveway shall be permitted per parcel or per contiguously owned parcels		495' separation required for new drives on the same parcel or contiguously owned parcels		

The Access Management Regulations, Functional Class road Map, Driveway—Drive Pipe detail, and Permit Application can all be viewed and downloaded from our website at www.lceo.us

Highway Update

*By Joel Miracle
Highway Superintendent*

The Highway Department has been busy performing asphalt repairs due to the rapid freeze and thaw this past winter that wreaked havoc on the asphalt roads and caused them to fail. When temperatures are above freezing, rainwater and snowmelt will make its way into any small crack in the pavement. Then, as temperatures drop below freezing, the water within the cracked pavement begins to freeze and expand, causing the crack to expand and grow as well. Warming weather then re-melts the ice, allowing the water to move deeper into the newly expanded crack, only to freeze and expand again during the next cycle.

Full depth asphalt repairs have been performed on CR 153 and CR 277, ahead of our 2018 sales tax paving program. Shelly Company has been contracted to pave over 17,000 tons of asphalt for our 2018 resurfacing program.

Repairs have also been done on CR 24, CR 32, CR 44, CR.47, CR 62, CR 70, CR 130, CR 153, CR 158 and CR 291 prior to our 2018 chip-seal program. Chip seals provide an effective moisture barrier for the underlying pavement against water intrusion by sealing cracks in the pavement. Chip seals also enhance safety by providing good skid resistance and helping to eliminate black ice in the winter. Our chip-seal program this year consists of over 322,000 gallons of HFRS-2P that will be purchased from Asphalt Materials.

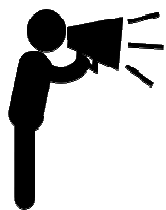
HFRS-2P is a high float, rapid setting anionic water-based emulsified asphalt predominately used for chip seal applications. The cured high float residue resist flow at high temperature and therefore is less susceptible to temperature fluctuations and flushing.

College Interns and Promotions

*By Donna Dahlke
Personnel Specialist*

This year we have one summer intern returning from the 2017 season. We would like to welcome back **William "Mitch" Schwieterman**, a student at the University of Cincinnati. Joining our summer intern program this summer is **Stanleigh Archer**, a student at The Ohio State University; **Seth Campbell**, a student at Rhodes State; **Parker Grothaus**, a student at University of the Incarnate Word; **Alex Jacobs**, a student at Sinclair Community College and **Hunter Phillips**, a student at Wright State University.

We welcome back our seasonal workers Sam Ragland and Denny Stryker. **Tracy Prater** has joined our team this summer as a seasonal truck driver.



Greg Kennaw was promoted to Highway Worker III in February of 2018. Greg's positive attitude and work ethic are a great asset to Logan County Engineer's Office.

Congratulations are also in order for Greg Dappert in his dual responsibilities as Survey Technician III and IT Network Technician. Greg has been instrumental in coordinating all of our IT needs over the past few years including updating new coordinates for NGS CORS network sites; updated NAS Drive system; department wide networking, website design, updating and maintenance as well as overseeing installation of new phone & security systems for the Engineer's Office.

Congratulations and thank you for your dedicated service!

Map Room

By Suzie Cochran
Map Room Supervisor

The online records of the Map Room include surveys, recorded subdivision plats, railroad plans, highway plans, cemetery plats along with old tax books ranging from 1870 to 1966. There are also links to the county shapefiles, school district maps, voting precinct maps, tax district maps & fire district maps. The County Tax maps with the aerial photography can also be viewed on this page. Additionally, there is a link to FEMA to view the flood plain maps.

These and other records of the Map Room can be found on the Logan County Engineer's Office website at www.lceo.us under the Map Room link in the upper left hand corner of the main web page. If you need assistance locating a specific record you can call (937)599-7230.

Ditch Maintenance & Traffic Department

By Steve Tracey
Ditch/Traffic Superintendent

The Ditch crew have center dipped three ditches this Spring to improve drainage due to a build up of silt and to expose covered drainage tile outlets. These include the Laws Ditch, the upper end of the Bokengehalas and the Allen Ditch. A curve was repaired in the Bokengehalas with dirt and concrete due to erosion. The outlets of the Badger Tile and Lamb Tile were dipped out for drainage and downed trees were removed from the South Fork branch as well.

Currently the crews are mowing roadside and maintenance ditches, running the boom mower behind guardrails and at intersections to improve sight distance.



The Traffic Department has been busy upgrading curve signage from our A.D.N. Ball Bank Study which helps determine which signs should be used, and how to properly place them. Black-on-yellow signs are warning signs and provide information to the motorist about the nature of the curve they are approaching. They inform the driver if it is a sharp turn or just a gradual curve and supplemental plates provide an advisory speed for traveling around the curve. The advisory speed is a relative value that for most vehicles, under WET pavement conditions, provides an adequate margin of safety and is reasonably comfortable for most drivers. The advisory speed for a curve is NOT the safe speed for every vehicle and pavement condition. The choice of which specific sign to place on a curve depends upon several different factors. The number of curves in a series, the advisory speed of the sharpest corner, and the alignment of the first curve, all help determine which sign to place.



Traffic studies have been done on CR 10, CR 55, CR 277, CR 153, and CR 29 due to increased truck traffic and to determine if any improvements should be made to improve safety and the operation of the road. We have been working together with villages and townships to maintain signs in addition to maintaining over 7,000 signs in the field.

OHIO PUBLIC WORKS COMMISSION (FORMERLY KNOWN AS - ISSUE 2)

By *Todd Bumgardner*
Administrative Coordinator

The OPWC has been funding local highway construction projects for over 3 decades. Upon inception in Logan County local governments agreed to rotate the application process for these funds: County, Townships, Villages and the City of Bellefontaine. Then once every 4 years the funding rotates to each entity. The funding rotation results in a large sum of money which assists local governments in completing costly projects. In 2018 the Logan County Engineer's Office will oversee \$834,097.00 in funding available to the townships of local county. In the case of townships in Logan County the OPWC funds are divided based on the number of road miles maintained in each township. The OPWC funding is generally used for resurfacing when used on a county and township project.

The OPWC funding has been approved by the voters on a state wide ballot issue every 10 years since 1987 and was last approved in 2014. This program has done well and will continue to be a great program for all residence of Logan County as well as all of Ohio. More detail can be found at the following website: <http://www.pwc.state.oh.us/>

Creating Safer Work Zones: Improving Operations on Both Sides of the Barrel



U.S. Department
of Transportation
Federal Highway
Administration

Facts

- During the past 5 years in work zone crashes more than:
 - 4,400 persons died (85 percent of which was the driver or passenger)
 - 200,000 persons were injured
- Drivers are the most frequent fatality in work zone crashes
- Most work zone fatalities involve working-age adults
- Rear-end crashes (running into the rear of a slowing or stopping vehicle) are the most common type of work zone crash.
- Fatal work zone crashes occur most often in summer and fall.
- The majority of fatal work zone crashes occurred on roads with speed limits greater than 50 mph.
- Stopping distance for motor vehicles at 50 mph:
 - Dry roadway—300 ft
 - Wet roadway—400 ft
 - Icy pavement—1250 ft
- A loaded 80,000 lb. tractor-trailer requires almost 50% more stopping distance.
- It takes only an extra 25 seconds to cover 1 mile at 45 mph compared to 65 mph.

Safety Tips for the Driver

Remember these driving tips to avoid "A Sudden Change in Plans" and perhaps save a life—including your own!

Stay Alert and Minimize Distractions

- Dedicate your full attention to the roadway
- Avoid changing the radio station, using a mobile phone, eating, or other distractions that can remove your concentration from the road

Keep Your Headlights On

Pay Attention to the Road

- "Listen to the signs"
- Watch brake lights on vehicles ahead
- Watch traffic around you and be prepared to react

Merge into the Proper Lane

- Merge well before you reach the lane closure
- Be aware that traffic patterns can change daily

Don't tailgate

- Follow other vehicles at a safe distance

Obey the Posted Speed Limit

- Workers may be present just feet away
- Fines may be doubled for moving traffic violations
- Be prepared to slow down further if conditions indicate the need

Change Lanes Safely

- Change lanes only where pavement markings indicate, and only when traffic conditions permit

Follow Instructions from Flaggers

Expect the Unexpected

- Workers, work vehicles, or equipment may enter your lane without warning
- Other vehicles may slow, stop, or change lanes unexpectedly

Be Patient

Listen to the signs.



Traffic is traveling in both directions on a roadway that is normally one way. Be alert for oncoming traffic.



Road work is just ahead. Be prepared for unusual driving conditions.



Traffic needs to follow this vehicle to get safely through the work zone.



A flagger is ahead—be prepared to stop and/or follow instructions.



You will need to take an alternate route soon.



You have reached the end of the work zone. Resume normal, safe driving.



A lane is about to end, requiring you to merge into the adjacent lane. The "bent" lane shows which lane is ending.

Culverts 101

*By: Michael Kerns
Assistant Engineer*

Driving a county road at 55 mph means you'll pass over the largest of culverts (defined as a drainage structure that has less than a 10-foot span) in 0.12 seconds. It takes you longer to blink your eye, which takes about 0.33 seconds. That's hardly enough time to get to know something so prevalent in the county so we're going to cover the basics of culverts here.

The Logan County Engineer's Office is responsible for 1,677 culverts, 194 of which are classified as being in Fair/Poor/Unknown condition. To determine which of these culverts to rehabilitate or replace, a field supervisor, upon noticing severe degradation, alerts the engineering staff that a further investigation is needed. If it's decided that a replacement is necessary, the engineering department begins the design and selection process. In rare instances, the process just described is short-circuited when storms bring massive amounts of rain and wash out culverts. This happened this spring on CR 35 in Pleasant Township, forcing county forces to reorganize their planned work schedules to replace the washed-out culvert with a new culvert as quickly as possible to minimize road closure time.

Culvert design begins with a hydraulic analysis, which entails mapping out the watershed and determining the amount and velocity of the water that is reaching the culvert. Once this is known, the required size of the culvert is calculated and compared to the existing structure while also examining the flooding history of the existing culvert. Upstream and downstream drainage structures are also analyzed to ensure neither will be negatively impacted as a result of the new culvert.

Typically, while the hydraulic analysis is being done, a survey is being performed to map the existing topography, stake the right-of-way and check on geometric tolerances, like seeing how much height there is from the flow line to the top of pavement. This is an important step because different culvert materials have different cover requirements depending on their material strength. For example, a concrete culvert can be designed to have little-to-no fill but a corrugated metal pipe needs at least a foot of cover to ensure it doesn't collapse under traffic loads.

Another major facet in culvert selection is durability. The three materials we use the most are concrete structures and high-density polyethylene (plastic) pipe which have design lives near 100 years and aluminized corrugated pipe which lasts 50-100 years.

Total project cost is also a big contributor when deciding what material to pick. For instance, if similarly-sized concrete and aluminized structures can be used, the aluminized structure will likely be chosen because it's substantially cheaper and it's also lighter, which means a crane won't be required to install it. Crane use when installing culverts isn't normal as they are only required to lift the biggest concrete culverts.

One last thing you may not have known about culverts is that they come in several shapes with these being the most common: arch, box, circular, ellipse and pipe-arch.



Bridge Crew Update

*By: Dan McMillen
Bridge Superintendent*

Summer bridge projects are now underway. With the long, cold, wet spring we took the opportunity to clean bridges and abutment seats and cut small trees growing around the bridges.

The bridge crew recently installed two large diameter culverts, on CR 35 and CR 111. CR 111 was scheduled to be replaced due to deterioration whereas the culvert on CR 35 was an emergency replacement after heavy rains washed out the former culvert. Both of these new culverts are of the aluminized steel arch type with dimensions of 42" high by 64" wide and 42' long.

The crew also removed over 100 tons of silt build up in a 6.5' x 12' concrete box culvert on CR 153 near Adams Ski Shop. The Engineer's Office now owns a stand-on skidsteer, which greatly aids in these type of jobs that involve working in tight overhead spaces.

Repairs to the Bickham covered bridge have been performed by the bridge crew due to a large vehicle strikes. We are currently performing bridge rehab on three structures by painting them.

Unknowingly Creating a Road Hazard

*By: Mark Hilty
Operations Superintendent*

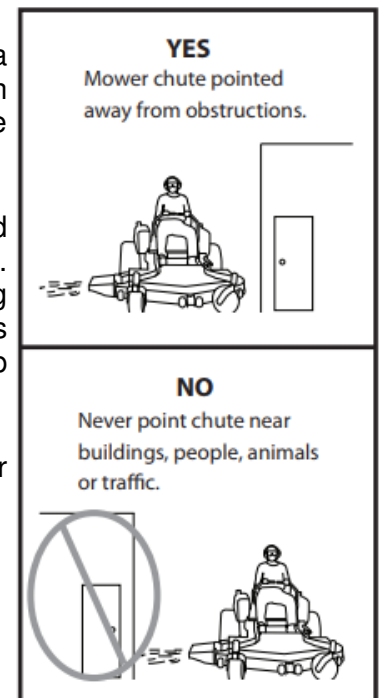
We have had a very wet Spring that has continued into early Summer. The result of this has caused our yards to grow incredibly fast! I'm sure most everyone is mowing their yards 2-3 times per week, a seemingly never ending battle.

As we get ready to begin our Chip Seal season we would like to give a reminder not to blow your yard clippings out onto our county roads. Doing such creates additional prep work to get our roads ready for chip seal and slows the whole operation down at times.

Blowing excess grass onto the roadway also makes a hazard for motorists and especially motorcycle riders that most of us don't think about, loss of traction. This becomes even more dangerous with rain on the roadway. Stopping distances increase and friction between the tires and road decrease. This scenario has caused tragic accidents over and over and has opened up unknowing property owners to lawsuits.

So we ask you turn those mowers around for a couple of passes and keep our roads and public safe.

Have a safe and fun Summer!!





Safety Update

*By Todd Bumgardner
Administrative Coordinator*

2018 has brought change and exciting equipment purchase.

CHANGE:

After 10 year of monthly half hour safety meetings we have changed things up with the addition of 10 minute weekly shorts. These weekly meetings are presented by employees to employees who actually put to practice the topics. Then we meet quarterly as an organization to review our progress, detail upcoming work and discuss administrative topics. These weekly and quarterly meetings are in addition to our safety committee meetings made up of employees from each of our internal departments: highway, ditch/traffic, bridge and administration. We feel approaching safe working habits from 3 angles gives a rounded group effort to the program.

EQUIPMENT:

In the past while in deep trenches our workers have been protected by one of 2 systems. One of which was a shoring system that was lightweight but cumbersome to install. The second was a borrowed trench box from a local contractor which required scheduling and coordination of work. Steel trench boxes are designed to protect workers as they work below ground. These boxes while large to transport install within minutes and protect workers from collapsing trenches. 2018 saw the purchase of our own trench box. It is available on our schedule and for emergency trench work at anytime. Our unit was purchased used at half the cost of new. Our annual operations will cause little wear and tear to the box and it should see many years of useful trench protection for our employees.

The word "SAFETY" is written in large, 3D orange block letters. A yellow hard hat is placed on top of the letter "A".

SAFETY