



The Orange Brigade



Winter 2012

Logan County Engineer's Office

Volume 40



Coleman's Comments

Greetings from your County Engineer:

Thank you, thank you, thank you for your continued support of the one-half percent sales tax for roads and bridges. We are very excited that the residents of Logan County have recognized the success of the sales tax program and chosen to continue investing in the local highway systems. The sales tax was renewed with sixty-two percent of voters supporting the issue. I appreciate your continued confidence in our use of these funds and we will continue the improvements and maintenance of the county highway system.

Our organization has continued to adapt to the new economic climate and seek improvements in efficiency. One example is through expansion of staff responsibilities. Todd Bumgardner has been reassigned as our General Superintendent where he has taken on the responsibility to oversee the highway, bridge, ditch, and traffic departments while retaining bridge inspection and design duties. This has been an opportunity to expand his responsibilities and improve the overall efficiency of our organization.

We have also merged the traffic and ditch departments under one superintendent. This merge has allowed us to reduce overall staffing while maintaining a high level of service. Mark Hilty has been promoted to take on the dual responsibility of Ditch/Traffic Superintendent. Mark has helped us to achieve new efficiencies through new ideas, changing techniques, and utilizing staff input. We have started some enhanced vegetation control through the use of herbicides that will reduce our staff labor dedicated to tree trimming. We will also be providing additional services to some townships for vegetation control and sign inspection. These shared services will provide savings to both the County Engineer's Office and the township trustees.

In our efforts to improve our level of service for snow and ice control, we have purchased one used pre-wet system, built a brine pre-treatment tank, and have built one of three new brine pre-wet tanks for this season. The new dump truck that is being outfitted will have computerized treatment controls and we are retrofitting other trucks with 6" augers to allow better treatment

capabilities. These changes will allow us to continue modifying mix ratios and trying new treatment options to improve our efficiency and service to the public. We share resources by purchasing brine from the city of Bellefontaine. Our goal is to use the right amount of salt, the right material, at the right time to improve efficiency and maximize the use of our labor and equipment. We look forward to continuing to improve our operations and our service to the public.

While we are on the topic of snow and ice control, we have had only two full snow and ice event responses for the end of 2011 season. Certainly the November 30 event was very tragic due to the rapid drop in early morning temperatures and the quick change from wet to ice covered bridges. This is a good learning opportunity for drivers to understand how quickly road conditions can change and why caution must always be used when temperatures are changing. Please be extremely cautious when temperatures are changing from above freezing to below freezing (32 degrees Fahrenheit). Wet pavements and especially bridges can change from water to ice very quickly when temperatures drop. We cannot pre-treat the highways during rain events with dropping temperatures because the rain will dilute and wash away the salt. Therefore, we must wait to treat roads at the correct time during winter rain events. If you encounter icy locations, please contact the Logan County Sheriff at 592-5731 so that they can notify the proper agency to respond. Please be safe during your winter travels.

We also continue to maximize our use of federal and state grant funds to leverage the local tax dollars. In 2011, we received a total of \$888,106.31 in grant funds. The grants funded sign upgrades, village paving, county paving, location based response system for 9-1-1, TR 33 widening, grade improvements, and resurfacing, and bridge load ratings.

Sales tax revenue increased 3.4 percent in 2011. This is the first increase since 2008 and was back up to about the 2004 revenue level. Auto registration fee revenue was down about 1% and state motor vehicle fuel tax revenue decreased by 2.4% in 2011. Both of these revenue sources had seen slight increases in 2010, so we will continue to monitor these revenues as fuel prices continue to fluctuate.

Sincerely,
Scott C. Coleman, P.E., P.S.

Do you know what our Website Can Do For You?

Please visit www.co.logan.oh.us/engineer and check it out!

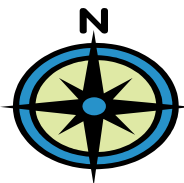
By Greg Dappert, Survey Technician 2

Did you know that the Engineer's Office website contains all the information that we have available in our Map Room? A while back we had completed the daunting task of making available to the public all records that are filed with our Map Room. The following information can be acquired at the click of your mouse: aerial photos of the county, tax maps showing property location, land surveys completed in the county, road surveys, railroad property surveys, cemeteries, etc.

We have tried to make our website as easy to navigate as possible. Therefore, we setup the website to be just like our Map Room filing system. To get started, simply click (left mouse button) the Map Room link from our home page and you are now ready to begin your search. Always try to use the search engine embedded on our site first to find the information needed. When you are conducting a search, always include certain specifics that you are looking for; such as: names on the survey, township name, VMS (Virginia Military Survey) Number or Section-Town-Range, and also include road names and/or road numbers. When searching for an aerial photo or tax map, you would use the map guide at the bottom of the page. First click the township of the property you are searching for, you will then be taken to a more detailed map of the area in which you can use roads to find the next area to click on. The selected area that you clicked will take you to the tax map number that should contain the property you are trying to locate. All other information can be found by clicking the Survey index link.

The Survey Index Page contains the links to all surveys of interest, such as land surveys, road surveys, railroad property surveys, subdivision plats, cemeteries, and other various information. All web pages have instructions on how to navigate the site easily. To locate a survey in your area of interest you would do the following: click the Township Book that covers the area you are researching and proceed by clicking the page number that you have determined to contain the survey information you are seeking. On the page that you have chosen, you will find survey index numbers that are used to locate a particular survey of interest. Once you have found all the survey index numbers that you require, you will want to write them down unless you have a photographic memory. You will need to return to the Survey Index Page by clicking the "Back" on your browser. You will want to open the corresponding folder to the Township or City or Village you had just found the survey index numbers in. When the folder loads, you will search for the index numbers that you had found from the Tax Map and click the Index Numbers that you would like to view or download (Adobe Reader or the equivalent software is needed to view the PDF documents.) Use the other indexes to find the other types of surveys by following the same procedures. Be sure to check all dedication plats found in Plat Books A & B against the originals in A-Files & J-Files.

If you would like assistance utilizing the data and function on our website, just call us at 937-592-2791 or the Map Room at 937-599-7230. We would be glad to help you and get the word out about our comprehensive website! Thank you.



"Mapping Matters"

By: Suzie Yoesting

Tax Map Draftsperson 2-Supervisor



In 2011, Logan County received the new Location Based Response System (LBRS) field verified dataset from Digital Data Technologies, Inc. (DDTI). The data was established by driving every road in the county and recording every posted address, thus providing the county with the most complete house numbering database ever. Since the system was delivered, the Map Room has been checking the discrepancies and unknown house numbers, noted by DDTI, and adding the identifiable house numbers for each road. All new house numbers established since the onset of the project have also been added to the dataset making it as complete as possible.

Additionally, the Map Room has been assisting individuals, entities and various governmental agencies, including the Auditor's Office, Board of Elections, Village of Belle Center, Riverside Schools and the Marysville Post of the Highway Patrol, in providing custom maps as requested.

Beginning last spring, the Map Room has worked quite extensively with All American Energy in verifying easement descriptions for new natural gas lines, which are to be installed over the more highly populated rural areas of the county. By the finalization of the project, there will be approximately 170 property owners who will have granted easements to the new energy supplier.

NEWS FROM THE HIGHWAY DEPARTMENT

By: Todd Bumgardner, General Superintendent

Bridge Dept.: Shane Long, Bridge Superintendent

Ditch & Traffic Control Dept.: Mark Hilty, Ditch/Traffic Superintendent

Highway Dept.: Joel Miracle, Highway Maintenance Superintendent

“Bridging the Gap”

Our bridge crew had a busy year in 2011. The crews replaced three box beam bridges - BR 105-0.24, BR 139-0.06 and BR 142-5.75, reconstructed BR 4-2.15 by lining the existing structure with a corrugated metal plate arch and new concrete headwalls, replaced an abutment on BR 44-0.22, and repaired and painted BR 32-2.00. Also in 2011 a number of repair items were completed on more than a dozen other structures throughout the county. The future of our bridge crew holds more of this type of repair work. The repair work is essential in maintaining the structures that we have installed in recent years. We keep a constant watch on our bridges and have a thorough maintenance program to ensure the maximum useful life of the construction materials.

“The Dig on Ditches”

In 2011 our ditch crews performed \$33,396.12 in maintaining petitioned ditches throughout the county. A petitioned ditch, once approved and installed, becomes the county’s responsibility to maintain. The maintenance costs are paid by the property owners who benefit from the ditch being in place. Currently there are 45 petitioned ditches under county maintenance. If you are interested in learning more about the ditch petition process contact our office.

“Traffic on the Move”

In 2011 the Traffic Department replaced 539 signs as a part of routine maintenance and 130 signs due to vandalism. For the summer Paving and Chip Seal Program, we used 305 temporary “Road Construction” and “Unmarked No Passing Zone” signs. We also replaced or repaired 65 mailboxes during the year. It was a very busy summer season for pavement marking tasks: 305 miles of centerline, 46 miles of edgeline, 22 railroad crossings, and 7 school zones. In less than one week we completed the night time “Reflectivity Study” of 6,580 signs countywide.

We are about 50% completed with the conversion to all high intensity signs as federally mandated in advance of the deadlines. In addition to the sign inspections, sign replacements, traffic studies and pavement markings our traffic department also is responsible for submitting our federal grant for sign upgrades. In 2011 we received \$50,000 in grant funding to upgrade the signs on our county system. A new federal law mandates that all signs on the highway system be upgraded to a high intensity prismatic film by 2015. With the federal monies received to date and the 2012 grant, the LCEO currently has in inventory enough signs to meet the federal deadline for sign upgrades.

“On the Road Again”

Our highway crews were busy with typical highway operations throughout the year. These operations include crack sealing, durapatching, repairing berms, maintaining roadside ditches, trimming trees and building shoulders. In 2011 county crews chip sealed 41.553 miles of county highways costing \$397,857.14. Chip sealing is an essential part of maintaining and preserving our pavements. The chip seal operations normally take place during the summer. These operations entail spraying a layer of asphalt emulsion to seal the pavement then a layer of stone is spread and compacted creating a driving surface. Our crews performed spot reconstruction of CR 144 between SR 287 and CR 153 and CR 44 between SR 559 and CR 277 which had many areas of failed pavement. Also in 2011 the crews replaced many failed culverts ahead of the 2012 paving schedule.

“The General’s Corner”

In 2011 the highway operations management structure underwent an overhaul. I was assigned to be the General Superintendent, a position that has been left unfilled for many years. The LCEO hopes to achieve a more efficient operation. This position combines an engineering and construction background which will serve a dual role in the highway operations. One of my first items of business was to combine and hire a ditch/traffic superintendent which replaced two retiring employees. Secondly, we began our efforts to work together and share resources with the townships and other county agencies. The LCEO developed an agreement with Bloomfield Township to replace a box culvert on TR 35. In 2012 we look forward to offering mowing, spraying, durapatching and sign inspections to the townships. With these agreements we hope to set up, townships will be able to partner with the Highway Department at a significant cost savings to perform work that often requires expertise, labor or equipment that townships would otherwise need to hire outside services.

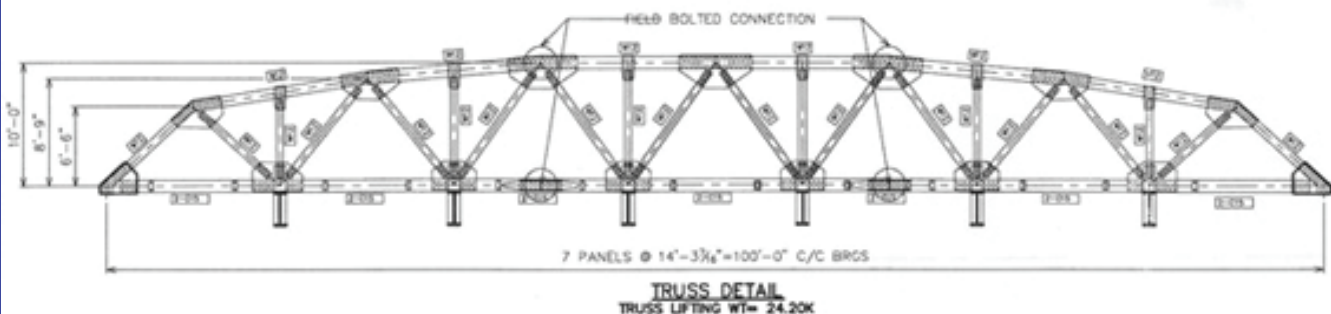
Bridge 80-1.46 Replacement and the 2012 Bridge Program

By: Bryan Dhume, P.E., Assistant Engineer

Bridge 80-1.46 is located on Township Road 80 over Muchinippi Creek, in Bloomfield Township between County Roads 21 and 54. The bridge is a steel pony truss with a single span of 79'-0" center to center of bearings. It was built in 1916 by the Bellefontaine Bridge & Steel Co. and had an original cost estimate of \$2,377.15. The estimated cost for the structural steel at the time was between four and five cents per pound. By comparison today, I would estimate structural steel at over \$1.00 per pound installed.

Last week, the Logan County Commissioners received bids for a new steel truss to be constructed at this location. The apparent low bid was from the Ohio Bridge Corporation in the amount of \$295,900.00. The new truss will have a single span of 100'-0" center to center of bearings, 24'-0" roadway width, 25° skew, galvanized finish, and a concrete wearing surface. The design loading is HL93, which is the current standard for highway bridges.

I have been working on the plans for the replacement of this bridge off and on for some time. The decision came down to two single span bridge types - a steel truss or prestressed concrete box beams. A multiple span structure was eliminated early on due to the debris catching nature of piers, and piers on the Muchinippi surely would create a long term maintenance issue. The major design consideration was the hydraulic inadequacy of the existing bridge. The existing bridge deck is frequently overtopped and I wanted the new bridge to be up out of the water during the ordinary flooding events. Prestressed box beams would have been the most economical structure, but at 42 inches in depth for a 100 ft. span, there would have been an excessive amount of embankment work necessary to get the beams clear of the ordinary flood events. That left a steel truss, which has a shallow superstructure depth due to its main members being at or above the bridge deck, as the practical solution. There will still be approximately 3.5 ft. of embankment work on the bridge approaches, but this height is minimized with the shallow depth of the truss. It is interesting to note that although a steel truss was the only practical bridge type available for a 79 ft. single span bridge in 1916, it also proves to be the most practical bridge for this location close to 100 years later.



In addition to the replacement of Bridge 80-1.46, the **2012 Bridge Program** includes the replacement of five other bridges. Bridge 105-0.80, located on County Road 105 just east of County Road 49, will most likely be a precast or cast in place three-sided concrete structure. Bridge 29-0.72, located at the intersection of County Road 29 and Township Road 179, will be a four-sided concrete box culvert. It is scheduled to be replaced between the end of the school year and the beginning of the Logan County Fair to minimize traffic disruption. Both Bridge 56-2.99, located on Township Road 56 south of County Road 57 and Bridge 43-2.85, located on County Road 43 just east of Township Road 33 will be culvert type structures as well. Bridge 174-0.56, located on Township Road 174 near West Liberty Lions Park, is a federally funded recycled thermoplastic composite structure. Although we plan to start construction on this bridge in September, the process we have to follow with ODOT due to the nature of funding is proving to be slow going. Bridge maintenance work this year will also include concrete deck repairs to Bridges 10-5.06 and 29-2.97, as well as painting on Bridges 45-1.01 and 11-6.69.



TARGET SAFETY...



By: Todd Bumgardner, General Superintendent

The LCEO is continuing to count our work days without an injury accident. In December 2011 we topped 600 days. 2011 also marked our second consecutive year that we have reported ZERO work injuries on our BWC 300 log. 2011 was successful safety year as the LCEO continues to build on our safety milestones. Let's make 2012 another safe year.

The problem of supporting our truck bed bodies while performing maintenance was identified during our annual pre-winter services. Most trucks have an original equipment manufacturers body prop. These OEM body prop's on our tandem axle trucks do not support the dump bed high enough to complete the required service. Many operations in the past have used a large solid wood block. This wood block in many cases does not work as it can crush or slip from its location resulting in many work place deaths.

To solve this problem you can purchase manufactured body prop's at a cost of over \$1,200 shipped. We found through internet research that OSHA makes available a free copy of engineer stamped, independently tested and certified plans for a DIY set of body props. With one of the many rain days during the month of December, the bridge crew took those OSHA plans, scrap steel and a little know how to create the props in the photo. A big thanks to Shane Long and his crew for taking the initiative and constructing these props which will make our mechanics' job a little safer.



Radio Communication Upgrade

By: Harvey Grimes, Administrative Coordinator

Several years ago we became aware of coming changes to the FCC regulations requiring narrow banding capability for radio systems. After extensive research, it was determined that our existing 800 megahertz system was not upgradeable. In 2010, when the power amplifier for our radio repeater failed, we found it was obsolete and a new replacement, was not available. We were forced to purchase a used amplifier.

In 2011, we were able to secure a grant from the Department of Justice and Homeland Security for new radio equipment. Helen Norris, EMA Director, was instrumental in securing this grant. With this grant we were able to purchase a VHF repeater, tower equipment, six VHF mobile radios and four VHF portable radios.

The new VHF system is connected "patched" to the old 800 Megahertz system and allows us to gradually replace the old system over the next ten years. The estimate to replace our entire system was \$95,000. Radio communication is vital to our operation as we continue to strive to provide services to the citizens of Logan County.



EMPLOYEE SPOTLIGHT



RECENTLY RETIRED

Don Phipps
Traffic Control Superintendent
7 Years of Service



Don joined the Engineer's Office on September 13, 2004. He successfully organized large inventories of traffic department items and consolidated various storage areas. Don supervised the Guardrail Replacement program by conducting field inspections and compliance. He stepped up to the plate and assisted various departments after the retirements of previous Bridge and Ditch Superintendents. Don is enjoying his retirement with his wife, Cate, and six grandchildren.

Congratulations, Don!

EMPLOYEE GENEROSITY

Our employees again supported the Logan County Children's Services "Adopt-a-Family" Christmas program. A local family with three children received several complete outfits, various toys and books, including personalized and stuffed stockings! Each child was given new winter coats and pajamas too.

Once again, **Mark Dearwester**, Route Marker 2, and his family made personal purchases to double up on the gifts for this family.

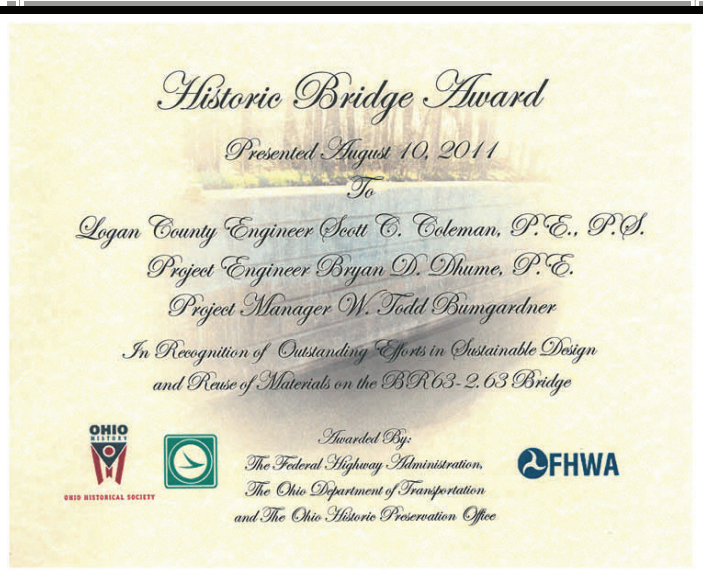
Our employees also gave generously to the Logan County United Way. Several local charities will receive these contributions over the coming year.

Thank you to all the employees who contributed to these worthy causes!

HISTORIC BRIDGE AWARD

The Federal Highway Administration, the Ohio Department of Transportation, and the Ohio Historic Preservation Office selected Logan County Bridge 63-2.63 for the "Historic Bridge Award". This project used federal aid funding and received recognition for outstanding efforts in sustainable design and reuse of materials.

The award was present to: **Scott C. Coleman, P.E., P.S.** (Logan County Engineer), **Bryan D. Dhume, P.E.** (Assistant Engineer), and **W. Todd Bumgardner** (General Superintendent).



NEW EMPLOYEE & PROMOTIONS

Anthony Bernard from Bellefontaine joins our team as a Ditch Maintenance Technician.

Mark Hilty was promoted to Ditch/Traffic Control Superintendent in August of 2011.

Jason McKee was promoted to Highway Worker 2 in August of 2011.

Congratulations to these employees for their hard work and dedicated service to the residents of Logan County, Ohio!