

36th Annual DARKE COUNTY ENGINEER'S ANNUAL REPORT FOR 2013

By: James P. Surber P.E., P.S. Darke County Engineer

The purpose of this report has always been to show the tax money received, exactly how it was spent, and what was accomplished. Our challenge to maintain the large road mileage and large number of bridges in Darke County was further magnified this year as we were forced to assume an additional 2.15 miles of road and another bridge on the former State Route 242. This became a County obligation by action of the Darke County Commissioners, who provided no revenue for the additional maintenance and upkeep.

The department constantly faces increasing costs with static revenues. The annual fuel tax and license receipts, received from the state in 2013, were virtually equal to the amount received in 2006; while the costs of road paving and bridge materials have increased 30%-55% over the same period.

We spend as much as possible on renewing and preserving pavement surfaces, replacing culverts, building and rehabilitating bridges, and making sign and safety improvements along with normal maintenance.

Spending in 2013 was reduced by \$282,764.70, to an amount \$174,491.78, or 3.3%, below total receipts. We spent 40 cents of each tax dollar for road and bridge improvements, 9 cents for maintenance materials, 10 cents for overhead, 4 cents for equipment purchase, and 37 cents for wages and fringe benefits. These costs are all detailed later in this report. Readers are encouraged to contact us with any questions or comments. Phone: 937-547-7375 or email: dce@earthlink.net

2013 RECEIPTS

Motor License Fees	\$2,341,808.15
Gas Tax	\$2,299,886.19
Recycling & Sales	\$ 100,925.57
Reimbursements	\$ 386,844.42*
Interest	<u>\$ 78,560.17</u>

*Fuel = \$ 196,316.53
*Grant = \$ 28,400.00

Total Receipts:	\$5,208,024.50
(2012 Receipts:	\$5,162,549.86)
(2011 Receipts:	\$5,440,261.14)
(2010 Receipts:	\$5,130,487.80)
(2009 Receipts:	\$5,092,452.52)
(2008 Receipts:	\$5,429,904.00)
(2007 Receipts:	\$5,489,589.47)

2013 EXPENDITURES

Resurfacing & Reconstruction	\$ 1,788,234.13
Bridge Construction & Maint.	\$ 158,653.01
Labor & Salary	\$ 1,348,384.86
Fringe Benefits	\$ 527,860.65
Equipment & Repairs	\$ 343,101.60
Fuel (All Co. Departments)	\$ 356,358.84
Road Maintenance Materials	\$ 429,384.14
Utilities/Office/Bldgs.	\$ 40,420.83
Culverts & Tile	<u>\$ 41,134.66</u>

Total Expenditures:	\$5,033,532.72
(2012 Expenditures:	\$5,316,297.42)
(2011 Expenditures:	\$5,419,431.93)
(2010 Expenditures:	\$5,108,337.70)
(2009 Expenditures:	\$4,876,878.41)
(2008 Expenditures:	\$5,436,072.59)
(2007 Expenditures:	\$5,365,189.14)

MAJOR IMPROVEMENTS

Miles of Road Resurfaced:	27.76
Miles of Road Microsurfaced	2.66
Miles of Road Crack-Sealed:	33.26
New Bridges Constructed:	1
Large Culverts Replaced:	1
Bridges Rehabilitated:	6

SAFETY IMPROVEMENTS

New Stop signs installed:	752
New road name signs installed:	203
Centerline Striping:	305 c/l miles
Edge line Striping:	353 lane-miles
New guardrail installed:	2,175 feet
Hills lowered (safety improvement):	2

EQUIPMENT EXPENDITURES

2013 IH 7300 Dump Truck:	\$95,092.00	2004 XL 4100 Gradall:	\$112,500.00
Used trailer:	\$ 6,835.00	Eaton compressor:	\$ 5,049.00
Miscellaneous small equipment:		\$ 5,095.95	

MAINTENANCE DATA

(In the maintenance of 520.997 miles of roadway)

County road culverts replaced:	44 on 10 different roads using 2439 feet of RCP conduit (12"-48")	Diesel used:	46,114.7 Gals.
Subsurface crossings installed:	21 on 7 different roads using 1130 feet of conduit (6"-15")	Gasoline used:	6,843.5 Gals.
Catch Basins/Inlets installed:	6 CB's and 21 Inlets with 169 feet of conduit installed along roads	Salt & ice grits purchased:	\$130,369.72
Total conduit installed:	3738 feet	Township Road culverts replaced:	19
Signs & posts purchased:	\$42,924.05		
Sign repair:	281 locations		
Mowing (lineal):	15,309 miles		

MAINTENANCE RESPONSIBILITY

County Roads:	520.997 miles	County and Township Bridges (over 10' span):	531
Large culverts: (30"-10 ft.):	365	Roadway culverts (12"-30"):	1565 (Est.)
Right-of-way:	3324 acres	Stop signs:	802
Warning signs:	2332	Road name signs:	1921

2013 ROAD IMPROVEMENT

We contracted asphalt resurfacing on fourteen different roads totaling 27.76 miles and the microsurfacing of 2.66 miles on five different roads, improving the surfaces on nearly 6% of the total Darke County road mileage (520.997), which is a seventeen year paving cycle.

The resurfacing program used 22,184 tons of asphalt and 3532 cubic yards of shoulder aggregate. Walls Brothers Asphalt Company performed the work from May through August. Microsurfacing used 351.66 tons on five different roads. This work was performed in June by Strawser Const. Inc.

All road surface improvement was 100% funded with County revenue.

ASPHALT RESURFACING

ROAD NAME	LENGTH	ASPHALT	AGGREGATE	TOTAL COST
	(Miles)	(Tons)	(Cu. Yd.)	
Wasson	2.96	2341.53	319.11	\$ 173,509.00
Chenoweth	0.31	310.40	47.09	\$ 22,577.59
Grubbs-Rex	2.03	1534.51	280.81	\$ 111,702.62
Gettysburg-Webster	4.97	4059.80	621.28	\$ 295,241.09
Arnold	1.09	818.92	147.64	\$ 60,480.74
Childrens Home-Bradford	1.02	799.26	114.38	\$ 58,230.96
Burns	2.07	1727.85	239.12	\$ 127,116.87
Harrison	2.10	1544.03	292.07	\$ 113,354.64
Hollansburg-Sampson	3.15	2496.92	439.92	\$ 182,639.63
New Weston-Ft. Loramie	2.58	1985.98	384.10	\$ 154,124.67
Ohio-Indiana Line	1.94	1697.09	264.04	\$ 125,072.85
Greenville-Bakers Store	1.74	1354.83	198.29	\$ 97,981.03
Wabash-York	1.52	1178.88	184.33	\$ 88,261.99
Reed	<u>0.28</u>	<u>334.00</u>	<u>0</u>	<u>\$ 22,466.00*</u>
Totals	27.76	22,184.00	3,532.18	\$ 1,632,759.68

The 2013 resurfacing costs averaged \$58,816.99 per mile, while in 2012 the cost was \$57,453.37. In 2011, 2010, and 2009, the costs were \$55,940, \$57,958, and \$53,873, respectively.

* Performed in cooperation with the Village of Versailles

MICROSURFACING

Eidson	0.75	95.77 tons	\$ 24,112.00**
Clifton Dr.	0.33	54.87 "	\$ 13,795.90
Ravenwood Dr.	0.30	46.28 "	\$ 10,727.10
Castine-Gordon	0.49	56.03 "	\$ 14,650.78
<u>Old U.S. 36</u>	<u>0.79</u>	<u>98.71 "</u>	<u>\$ 26,030.00</u>
Totals	2.66	351.66 "	\$ 89,315.78

Average cost was \$33,577/mile

** City of Greenville furnished \$15,359.34 (inside Corp.)

Total Expenditure: \$1,722,075.46

PAVEMENT MARKINGS

We contracted the application of 305.194 miles of new centerline markings with no-passing zones, and 353.57 lane miles of white edge lines with Oglesby Construction at a total cost of \$162,009.96. Striping costs averaged \$256.78 per mile for yellow markings and \$236.56 per lane mile for white edge lines. County employees also repainted all "SCHOOL" and "RR CROSSING" markings and installed hot-applied markings at 2 railroad crossings and 1 school zone.

CRACKSEALING OF ROADS

County employees sealed cracks on 33.26 miles of County Roads during the year. This required 158,050 pounds of sealant at an average rate of 4,750 pounds per mile. The material cost was \$72,703 (\$2,185/mile).

ADDITIONAL PAVEMENT

Over 185 tons of asphalt was placed by County crews for pavement replacement on culvert trenches, subsurface crossings, and curve widening.

TOWNSHIP COOPERATIVE ROAD WORK

In 2013, we provided \$31,070.00 in labor and equipment to 16 Townships at no charge. County workers replaced 19 roadway culverts and 4 subsurface crossings on 20 Township Roads in 8 different Townships. The Trustees of two Townships (Adams and Patterson) each furnished asphalt resurfacing for a bridge on their Township road that was rehabilitated by the County during the year. The Trustees of Greenville furnished one half (\$7,147.50) of replacing 1175 feet of guardrail adjacent to the Wildcat Road bridge.

OTHER PROJECTS

Our employees replaced C127-0314, a culvert on Gettysburg-Southeastern Road, with a 48" diameter reinforced concrete pipe, 64' long. Total cost of the materials and equipment for this project was \$11,822.32.

Over 1000 feet of guardrail was replaced by Lake Erie Construction at the intersection of New Madison-Coletown and Wagner Roads at a cost of \$13,408.75.

The 3.0 mile Frazers Road reconstruction project, begun in late 2012 and substantially funded by OPWC, was completed with final paving and seeding at a local cost of \$54,949.62.

BRIDGE CONSTRUCTION AND REHABILITATION

The County Bridge Crew built one new bridge and rehabilitated six (6) bridges on County and Township roads in 2013. All design and construction was by Darke County personnel, and all funding for these projects was 100% local. *(except as noted)*

These costs include additions for overhead on labor and materials as mandated by Ohio law and the State Auditor's policies for force account bridges built after 07/01/03.

Road	Bridge No.	Span x Width	Costs		
			Materials & Equip.	Labor & Fringe	Total

NEW BRIDGE

A new, galvanized, steel beam bridge superstructure, with waterproofed, timber strip deck was fabricated and constructed by the County bridge crew in early 2013.

Worth	C281-0087	33'x28'	\$39,968.92	\$25,988.06	\$65,956.98
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(over Dismal Creek)

BRIDGE REHABILITATION AND REPAIR

The Daly Road Bridge over Greenville Creek was rehabilitated by the County Bridge Crew in July. The 169 foot-long, three-span steel beam/concrete deck, bridge was built in 1966. Over four inches of asphalt wearing course was removed and major reconstruction was performed to the concrete deck sides. Structural steel was cleaned and painted where necessary and waterproofing and a new asphalt wearing surface was installed. The deck was repaired on the newly-assumed bridge on Old St. Rt. 242, and will be waterproofed and paved in 2014.

Daly, C328-0045	169'x30'	\$39,248.01	\$35,135.76	\$74,383.77
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(over Greenville Creek)

Old S.R. 242, C121-0116 Rehabilitation of concrete slab bridge by partial removal and reconstruction of both deck sides.

(over Owl Creek)	21' x 29'	\$ 5,220.39	\$ 5,787.44	\$11,007.83*
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* funded by ODOT

Two steel truss bridges were rehabilitated by the County Crew by removing the old asphalt wearing course and timber deck, replacing structural steel where necessary, complete cleaning and recoating, and installation of new timber decks with waterproofing and new asphalt wearing surfaces.

Wasson C123-0211	93'x24'	\$36,690.43	\$33,171.69	\$69,862.12
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(over Greenville Creek)

Heller C267-0085	90'x24'	\$33,671.35	\$32,819.21	\$66,490.56
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(over West Branch of Greenville Creek)

Two steel beam bridges on Township Roads were also rehabilitated with substructure repairs, old deck removal, cleaning and recoating of steel and installation of new decks with waterproofing and new asphalt wearing surfaces. The Township Trustees of Adams and Patterson Townships furnished the cost of the asphalt surfaces for the respective bridges.

Etter T297-0070	32'x24'	\$ 7,988.23	\$ 9,269.24	\$ 17,257.47
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(over Harris Creek)

Day T177-0202	44' x 24'	\$10,825.22	\$ 7,533.24	\$ 18,358.46
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(over Edw. Simon Ditch)

Grand Total \$ 312,309.36

406 new bridges have been built on Darke County and Township Roads since 1977.

ACTUAL FORCE ACCOUNT BRIDGE COSTS

Reported 2013 costs for one new bridge and five rehabilitations: \$312,309.36

Total materials and services purchased: \$158,653.01 Actual labor and fringe: \$104,287.83

Actual County Cost: \$262,940.84

OUR BRIDGES ON COUNTY AND TOWNSHIP ROADS BY STATE SUFFICIENCY RATING

(Each bridge is rated from 0-100 based upon condition and annual inspection)

Average sufficiency rating of all bridges is 92.4%

Number of bridges	% of total bridges	Sufficiency Rating
375	70.6%	EXCELLENT (90-100)
138	26.0%	GOOD (70-90)
14	2.7%	FAIR (50-70)
4	0.7%	POOR (0-50)

(Of the four bridges in poor condition; two are historic structures, one is a closed bridge in an incorporated village, and the fourth is scheduled for replacement.)

The average age of the 531 bridges on County and Township roads is 31.9 years.

With our large number of bridges (531), a 75 year assumption of bridge life would indicate that we should be replacing at least 7 bridges each year. We continue to rehabilitate bridges that are from 30-60 years old to greatly extend their expected life.

DETAILED EXPENDITURES FOR 2013

WAGES & FRINGE 37.3 %
 (Engineer, 29 fulltime, 1 part-time)
 WAGES \$1,348,384.86
 PERS \$ 193,851.85
 HEALTH INS. \$ 256,392.74
 UNIFORMS \$ 13,251.90
 MEDICARE \$ 17,997.24
 WKRS. COMP. \$ 14,661.26
 DRUG TESTS \$ 1,719.00
 ADM. FEES \$ 3,008.04
 SEVERENCE \$ 26,978.62
TOTAL \$1,876,245.51

IMPROVEMENTS 39.5%
 (Paving/const. contracts and specific materials only)
 PAVING/CONST. \$ 1,776,890.08
 BRIDGES \$ 158,653.01
 CULVERTS/TILE \$ 41,134.66
 ASPHALT \$ 11,344.05
TOTAL \$1,988,021.80

OVERHEAD 10.2%
 UTILITIES/BLDG. MAINT. \$ 40,420.83
 PARTS & SUPPLIES \$ 90,403.40
 FUEL (all County Depts.) \$ 356,358.84
 TIRES \$ 9,106.22
 LUBRICANTS /FILTERS \$ 14,115.85
 REPAIRS (BY OTHERS) \$ 4,904.18
TOTAL \$ 515,309.32

ROAD MAINTENANCE MATERIALS 8.5 %
 SALT & ICE GRITS \$ 130,369.72
 SIGNS & POSTS \$ 42,374.02
 CRACK-SEAL MTL. \$ 81,664.40
 GRAVEL \$ 11,879.04
 PAV'T MARKING \$ 163,096.96
TOTAL \$ 429,384.14

NEW EQUIPMENT \$224,571.95 4.5%

TOTAL 2013 EXPENDITURES: \$5,033,532.72

As the figures show, in 2013 the amount spent for road paving (\$1,722,075.46) was nearly eleven times greater than the amount spent for bridge work (\$158,653.01). In past years our ratio has been about 3:1, but the most disturbing part is that we are still not paving enough roads. Our current paving cycle is 17 years which is totally inadequate. As the costs of road and bridge construction and maintenance continue to rise, and as our responsibilities are increased, revenue remains static or decreases. As stated on page one of this report, we are operating on a revenue amount equal to that in 2006. We constantly work to improve efficiency and stretch the dollars. We preserve and maintain a healthy fund balance as a defense against emergencies and continuing shortfalls, but annual interest receipts are still \$145,000 lower than on the same balance seven years ago. Darke County's large number of bridges are still in very good condition, but we must replace or improve 8-10 per year to be responsible to the future. Our greatest challenge is to fund an adequate annual resurfacing program and to maintain the quality of our pavements. These challenges help keep the job interesting.

HOW WE ARE FUNDED AND SOME FACTS:

DISTRIBUTION OF STATE TAXES ON FUEL AND FEES FOR VEHICLE LICENSING (PLATES)

THERE HAS NEVER BEEN A LOCAL TAX FOR THE BENEFIT OF COUNTY ROADS AND BRIDGES IN THE HISTORY OF DARKE COUNTY.

THIS DEPARTMENT RECEIVES NO MONEY FROM REAL ESTATE TAXES, LOCAL SALES TAXES, OR THE COUNTY GENERAL FUND, FOR ROADS OR BRIDGES.

THE DARKE COUNTY ENGINEER HAS NO DEBT AND OWNS 100% OF ALL VEHICLES AND EQUIPMENT.

Darke County Engineer's Office
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TO: _____
