



Joseph S. Bachman, P.E., P.S. Tuscarawas County Engineer

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TO: Tuscarawas County Commissioners

Gentlemen:

We have enclosed a copy of our annual report for 2010. Please pay particular attention to the income and inflation figures on pages 3 and 4, which show that we continue to fall further and further behind economically. We are simply postponing required road and bridge maintenance to future years, when it will be more expensive than it is today.

Please contact us if you have questions or comments.

Sincerely,

Joseph S. Bachman, P.E., P.S.
Tuscarawas County Engineer

TUSCARAWAS COUNTY
ROAD AND BRIDGE DEPARTMENT

2010 ANNUAL REPORT
MARCH 2011

Joseph S. Bachman, PE, PS
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832 Front Avenue, SW
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PURPOSE

The purpose of this annual report is to advise the County Commissioners on the condition of the county roads, bridges, and culverts and to estimate the funds needed for maintenance and construction of new roads, bridges, or culverts. This report is written to satisfy the requirements of Ohio Revised Code, Section 5543.02.

INTRODUCTION

The County Engineer, in cooperation with the County Commissioners, is responsible for all maintenance, repair, widening, resurfacing and reconstruction of roads, bridges, and related items on the county highway system. The Engineer serves as an advisor to the Township Trustees for the maintenance, repair, widening, resurfacing, and reconstruction of township highways.

The bridges on the township road system are the full responsibility of the County. The Engineer is also responsible for several bridges within municipalities. The Engineer must maintain a perpetual inventory of all these bridges, including an annual inspection and evaluation of the condition and load capacity of each bridge.

The Tuscarawas County Engineer's Department is responsible for 467.15 miles of roadway, which is the seventh highest mileage of the 88 counties in the state. In addition, the Department has maintenance responsibility for approximately 274 bridges (spans ranging from 10' to 405'), 148 large culverts (diameters 48" and above), 2950 small culverts (diameters 12" to 48"), approximately 304,000 feet of guardrail, and numerous related items. We also annually inspect approximately 30 bridges owned by local cities and villages as a courtesy to these municipalities.

Tuscarawas County, due to its relatively large area (555 square miles), has a considerably higher road mileage than the average county in the State of Ohio. This is illustrated below:

System	Statewide Mileage	Average County	Tuscarawas County
State Highway	19,291*	219*	214*
County Highway	29,088	331	467
Township Road	41,194	468	607
TOTAL	89,573	1018	1288

*These State figures include State routes through Cities and Villages, which may have shared maintenance responsibilities.

2010 INCOME

Actual 2010 income to the Tuscarawas County Road and Bridge Department, excluding grants, was \$5,218,482. This income is compared to previous years' income as follows:

Items	1989 Receipts	1990 Receipts	1991 Receipts	1992 Receipts	1993 Receipts	1994 Receipts
Gasoline Tax	891,344	1,005,044	1,066,408	1,119,375	1,157,378	1,239,660
License Fees	2,170,820	2,043,446	2,049,763	2,057,749	2,227,641	2,315,898
Fines	23,075	22,899	21,785	23,916	20,961	23,033
Permits/Misc.	73,730	63,067	5,592	3,628	4,366	4,366
ACTUAL INCOME	3,158,969	3,134,456	3,143,548	3,204,668	3,410,346	3,582,957
Non-Rev. Reimb.	52,085	116,572	318,675	170,100	143,849	193,118
GROSS TOTAL	3,211,054	3,251,028	3,462,223	3,374,768	3,554,195	3,776,075

Items	1995 Receipts	1996 Receipts	1997 Receipts	1998 Receipts	1999 Receipts	2000 Receipts
Gasoline Tax	1,264,522	1,283,138	1,313,675	1,348,239	1,390,485	1,378,130
License Fees	2,369,397	2,432,917	2,507,775	2,604,577	2,729,596	2,739,791
Fines	20,151	34,001	54,483	77,422	67,397	90,708
Permits/Misc.	19,340	7,068	47,822	40,401	45,904	46,225
ACTUAL INCOME	3,673,410	3,757,124	3,923,755	4,070,639	4,233,382	4,254,854
Non-Rev. Reimb.	191,173	231,770	226,329	347,020	274,705	243,819
GROSS TOTAL	3,864,583	3,988,894	4,150,084	4,417,659	4,508,087	4,498,673

Items	2001 Receipts	2002 Receipts	2003 Receipts	2004 Receipts	2005 Receipts	2006 Receipts
Gasoline Tax	1,385,531	1,387,402	1,524,662	1,867,716	2,098,616	2,322,445
License Fees	2,734,338	2,763,157	2,823,399	2,788,585	2,765,849	2,833,358
Fines	81,076	85,846	83,476	78,189	107,846	170,924
Permits/Misc.	65,736	80,114	20,748	51,346	38,675	45,968
Interest	295,269	24,104	10,659	7764	29,188	61,677
ACTUAL INCOME	4,561,950	4,340,623	4,462,944	4,793,600	5,040,174	5,432,116
Non-Rev. Reimb.	345,130	945,232	237,818	716,904	1,485,242	703,125
GROSS TOTAL	4,908,080	5,285,855	4,700,763	5,510,504	6,525,416	6,137,496

Items	2007 Receipts	2008 Receipts	2009 Receipts	2010 Receipts
Gasoline Tax	2,396,839	2,415,819	2,331,703	2,366,745
License Fees	2,830,651	2,754,749	2,637,699	2,698,359
Fines	155,951	116,840	104,423	67,740
Permits/Misc.	81,739	68,247	70,322	84,132
Interest	71,997	20,083	1,757	1,456
ACTUAL INCOME	5,537,177	5,375,738	5,145,904	5,218,482
Non-Rev. Reimb.	354,698	218,669	229,397	331,270
GROSS TOTAL	5,891,875	5,594,407	5,375,301	5,549,752

The ACTUAL INCOME to the department, which is the money that we can count on year after year to perform our maintenance and construction activities, increased from 2009 by 1.4% to \$5,218,482. This figure does not include "Non-Revenue Reimbursement" which is the repayment for materials sold and work done for other entities. Increase in costs due to inflation in the overall construction industry for 2010, as measured by the Construction Cost Index, was 3.6%, so we continued to fall further behind economically.

The increase in income is compared to the rate of inflation as follows:

	1989-90 change	1990-1 change	1991-2 change	1992-3 change	1993-4 change	1994-5 change
Income	-0.8%	+0.3%	+1.9%	+6.4%	+5.6%	+2.3%
Inflation	+1.9%	+2.5%	+3.5%	+5.0%	+2.4%	+1.6%
	1995-6 change	1996-7 change	1997-8 change	1998-9 change	1999-2000 change	2000-1 change
Income	+2.0%	+4.4%	+3.7%	+4.0%	+0.5%	+7.2%
Inflation*	+3.7%	+2.2%	+2.3%	+2.3%	+2.5%	+1.7%
	2001-2 change	2002-3 change	2003-4 change	2004-5 change	2005-6 change	2006-7 change
Income	-5.7%	+2.8%	+7.4%	+5.1%	+7.8%	+1.9%
Inflation*	+2.7%	+3.3%	+6.2%	+6.1%	+3.1%	+2.6%
	2007-08 change	2008-09 change	2009-10 change	Overall change		
Income	-2.9%	-4.5%	+1.4%	+65.2%		
Inflation*	+5.7%	+1.1%	+3.6%	+91.3%		

*Inflation figures are based on the Construction Cost Index (CCI) published by the Engineering News Record.

Based on the above table, revenues to the department are 26.1% BELOW inflation since 1989. We anticipate that, unless the Commissioners take action, income in the next few years will remain about the same or even decrease slightly, while expenses will continue to increase. The two major sources of our revenue are vehicle registration fees, based on the number of vehicles registered in the County, and gas taxes, which are distributed evenly to each county in the state. Income from vehicle registration fees in 2010 increased slightly over 2009, but was still the second lowest since 1998. Gas tax fees also increased slightly over 2009, but are still below figures from the previous two years. Gas tax fees, which are based on a fixed amount per gallon (not a percentage), can be expected to remain flat or decrease as vehicles become more fuel efficient and less fuel is used.

In order to maintain and improve services to the public while income remains constant, it is important that outside sources of project funding be accessed. The Ohio Public Works Commission has been a reliable source of accessible funding for infrastructure repairs, but we cannot rely solely on this program. This program has benefited the county substantially over the years, and the procedures for grant application are relatively simple. This program is authorized through the year 2016 as long as funding is made available by the state legislature.

Federal Highway Administration (FHWA) funding continues to be available for a limited number of projects in Tuscarawas County. Because the FHWA funding process is very expensive, paperwork intensive, and time consuming, this source of funds is practical only for a very limited number of larger construction projects. Construction projects currently programmed for the next six (6) years of FHWA funding include:

- Bridge #FRA-425-299 complete replacement
- Bridge #WAY-62-305 complete replacement
- Bridge #MIL-37-60 complete replacement
- CR 80 – Schneiders Crossing Road improvements
- CR 69, 24, 16 guardrail construction
- Various County Roads Centerline Striping

Both the OPWC and the FHWA programs are project specific funding mechanisms, and do not provide for maintenance of our facilities. We need to maintain the facilities we do have; funds at the local level are not adequate for proper maintenance of infrastructure.

The Road and Bridge Department in February of 2011 received a voluntary gift of \$10,016 from the Amish Safety Committee Road Maintenance Fund to assist with the expense incurred in maintaining, repairing, or reconstructing highways and roads upon which animal-drawn vehicles travel. This money has not been allocated at this point; we anticipate using it for road maintenance in the Sugarcreek area.

2010 EXPENDITURES

2010 expenditures, along with the previous twenty-one (21) years, are shown below:

Items	1989 Expenses	1990 Expenses	1991 Expenses	1992 Expenses	1993 Expenses	1994 Expenses
Wages/Fringes	1,148,775	1,059,941	1,149,207	1,289,097	1,293,339	1,272,470
Road Mat'l/Contracts	927,265	1,453,763	1,007,939	1,046,782	1,326,812	1,216,592
Bridge Mat'l/Contracts	397,228	154,035	398,656	209,709	215,301	289,886
New Equipment/Bldgs.	143,181	213,972	112,758	197,313	232,857	360,533
Equip Maintenance	126,180	114,456	156,183	158,994	171,819	211,963
Misc. Expenditures	43,834	76,058	38,475	47,003	57,698	36,574,
Issue II – Local Share	0	251,531	476,636	393,785	739,506	323,666
GROSS TOTAL	2,786,463	3,323,756	3,339,854	3,342,683	4,037,332	3,711,684

Items	1995 Expenses	1996 Expenses	1997 Expenses	1998 Expenses	1999 Expenses	2000 Expenses
Wages/Fringes	1,325,389	1,365,479	1,300,279	1,323,856	1,322,648	1,344,929
Road Mat'l/Contracts	1,050,292	1,524,219,	1,406,491	946,802	1,214,396	1,649,941
Bridge Mat'l/Contracts	389,058	373,733	476,443	283,980	211,931	508,748
New Equipment/Bldgs.	340,846	356,381	308,360	378,514	477,110	358,327
Equip Maintenance	198,650	208,268	212,034	233,985	288,740	248,494
Misc. Expenditures	1,726	21,688	22,218	11,534	26,260	50,490
Issue II – Local Share	333,630	251,744	814,084	239,535	510,833	436,994
GROSS TOTAL	3,639,591	4,101,512	4,539,909	3,418,206	4,051,918	4,597,933

Items	2001 Expenses	2002 Expenses	2003 Expenses	2004 Expenses	2005 Expenses	2006 Expenses
Wages/Fringes	1,405,038	1,531,751	1,657,846	1,684,343	1,725,243	1,705,186
Road Mat'l/Contracts	2,044,363	2,318,617	1,742,709	1,416,538	2,895,627	1,897,093
Bridge Mat'l/Contracts	604,632	994,479	677,161	765,107	463,176	737,606
New Equipment/Bldgs.	453,063	285,824	137,276	344,181	527,977	560,903
Equip Maintenance	354,998	343,200	345,760	364,165	477,253	290,106
Misc. Expenditures	52,026	34,269	1,047	45,597	16,495	9,487
Issue II – Local Share	169,992	314,644	719,696	417,304	267,052	721,521
GROSS TOTAL	5,084,112	5,822,584	5,281,495	5,037,235	6,372,874	5,918,902

Items	2007 Expenses	2008 Expenses	2009 Expenses	2010 Expenses
Wages/Fringes	1,796,601	1,778,583	1,834,288	1,782,384
Road Mat'l/Contracts	2,466,450	2,595,147	1,391,150	1,418,664
Bridge Mat'l/Contracts	700,606	709,522	633,509	334,904
New Equipment/Bldgs.	261,974	273,370	437,948	353,638
Equip Maintenance	393,545	503,803	366,736	460,293
Misc. Expenditures	14,976	23,034	5,429	16,609
Issue II – Local Share	706,529	161,397	769,349	710,180
GROSS TOTAL	6,340,681	6,044,856	5,438,809	5,076,672

The spending decrease in 2009 and 2010 is mostly in the “Road Material/Contracts” line item – the decrease is almost all in the form of less paving of roads. This lack of funds for paving will result in deterioration of driving surfaces in the immediate future. Of more concern is the long-term future expense of restoration of the roadways; we are simply delaying our infrastructure costs into future years. Generally these costs in future years will be higher than present day costs.

2010 ACCOMPLISHMENTS

1. Approximately 20.1 miles of County Roads were paved in 2010. County Roads were paved with a combination of local funding and Ohio Public Works Commission grants. Paving was completed on Oldtown Valley Road (CR 24) from Williams Lake Road to US 36, all of Gunther Miller Road (CR 43), Crooked Run Road (CR 52) from Specht Road to Schilling Hill Road (CR 79), all of Williams Lake Road (CR 53), all of Baltzley Valley Road (CR 69), and all of Atwood Lake Road (CR 93).
2. In 2010, we chip-sealed approximately 31 miles of County Roads. This chip-seal treatment is a preventative maintenance item which serves to extend the life of the asphalt by 3 to 5 years. The amount of chip sealing required to properly maintain our asphalt surfaces is in the range of 60 to 70 miles per year; unless we are able to increase our maintenance work substantially in the near future, roadway surfaces will deteriorate.
3. Equipment purchased in 2010 includes:
 - New ¾ ton pickup
 - New 20 ton trailer
 - Two (2) used tandem trucks with dump bodies
 - Werk-Brau brand thumb for Kobelco excavator
 - Used 1-ton utility truck – purchased from Medina County engineer
 - Used ½ ton pickup (donation from Southern District Court)
 - Pallet rack for steel building (replaces mezzanine removed due to OSHA recommendations)
 - Used berm material conveyor
 - Used bull dozer
 - Used semi tractor
 - New Topcon Total Station Survey Instrument and Data Collector

4. Major equipment sold in 2010 includes:
 - Trac-hoe excavator (damaged in accident)
 - One pickup truck
 - 12 ton trailer
 - Emglo air compressor
 - Two International tandem trucks
 - Freightliner semi tractor
 - Total station survey instrument

5. In 2010, we replaced 30 cross culverts with a total length of approximately 1440 feet with our Crews. This included a large (72" diameter) culvert on New Cumberland Road (CR 90).

6. Bridge work by our crews in the year 2010 included:
 - WAS-8-12 deck replacement on existing abutments
 - WAS-8-13 deck replacement on existing abutments
 - AUB-78-274 deck replacement on modified abutments
 - SAL-217-290 complete replacement
 - FAI-388-290 complete replacement

7. We were very fortunate to have received a large grant via the Federal stimulus program in 2010 (we received the largest stimulus grant of any non-metropolitan county in the state). The following large bridges were repainted under this stimulus grant:
 - DOV-4thST-522
 - LAW-82-116
 - WAR-394-294

In addition, bridge #OXF-1-1 was repainted under a separate FHWA grant. These grants were very important to our operation, as bridge painting funds are not available in our normal maintenance budget.

8. Approximately 150 miles of roadway centerline was applied at a cost of approximately \$58,670 in 2010. Striping of roadway centerline is down substantially from past years due to budget considerations; this remains a safety concern.

9. The following existing bridges were waterproofed and repaved (the newly constructed bridges listed above were also waterproofed):
 - SUG-73-280
 - Newc-CanalST-531

10. We again did all mowing with our own forces in 2010.

11. Sight distance improvement projects were completed at the following locations:
 - Williams Lake Road (CR 53) at Metzger Hill Road
 - Gunther Miller Road (CR 43) at Renner Road and Ridge Road
 - Wolf Road (CR 23) at West Hill Road (CR 31)
 - Boy Scout Road (CR 83) at Bissell Church Road

12. We completed under contract a Federally funded guardrail project on three (3) sections of CR 37 (Waterworks Hill Road, Deersville Avenue, and Pleasant Valley Road)
13. With the financial assistance of the Ohio Public Works Commission emergency funding, we completed under contract a landslide repair project on Salt Fork Road (CR 3) near the Guernsey County line.
14. With the assistance of a contractor, we completed a full-depth reconstruction of Smokey Lane Road (CR 71).
15. We continued a concentrated effort at clearing brush and trees from the rights-of-way of County Roads. Roads addressed in 2010 include all or portions of CR 10, 24, 32, 36, 43, 52, 53, and 79.
16. We continued our long-term effort to perform load rating on each of the bridges in our inventory by the Load and Resistance Factor Rating (LRFR) method of rating. This rating method has superseded all previous methods of load rating bridges, as per directive of the Federal Highway Administration. As of the end of 2010, we have approximately 60% of our bridges load-rated by the required method.
17. We completed and seeded an earthwork project on Johnstown Road (CR 85) in the area near Gintz Road – this consisted of cutting back banks to provide for more visibility around curves and to provide for more recovery area for errant drivers.
18. We initiated a major overhaul of our sign-making operation in order to conform with the FHWA mandate for increased retro-reflectivity on traffic signs.
19. We initiated changes in several of our buildings in response to a voluntary safety inspection by the Ohio Bureau of Workers Compensation. With the assistance of the Commissioners, we began a substantial upgrade of the electrical service entrance to our main building, and completed minor electrical renovations to several other buildings. We also made major renovations to our steel outbuilding at the east edge of our Front Street property, removing a non-conforming mezzanine level and replacing it with load-rated shelving.

2011 PROJECTS

Major projects planned for 2011 include the following:

1. Repaving of the following County Roads:
 - Moravian Trail Road (CR 36)
 - Crooked Run Road (CR 52) from Schilling Hill Road to Specht Road
 - Indian Hill Road (CR 62)
 - Echo Lake Road (CR 91)

This planned paving program for 2011 – approximately 12 miles – is anticipated to be financed in large part by Ohio Public Works Commission (OPWC) funding, if our grant applications are successful. If OPWC funding is not available, 2010 paving will be minimal. Paving at this rate – 12 miles of our total 467 miles – means that, on the average, we will be returning to repave a road every 39 years. Normal pavement life is assumed to be 10 to 12 years, so our roads will continue to deteriorate unless more resources are forthcoming.

2. Replacement of the following bridges:
 - SAL-21-10 complete replacement (delayed from 2010 because of ODOT SR 751 project)
 - JEF-53-78 complete replacement
 - WAS 6-8 complete replacement
 - GOS-1213-258 deck replacement, modify existing abutments
 - SAL-24-35 complete replacement
 - CR 51 east of CR 50 complete replacement of 10 ft. culvert with bridge
 - GOS-69-93 deck replacement

3. We intend to chip seal at least 30 miles of roadway during 2011 as a means of preserving our existing pavement. This amount of chip sealing, if continued year after year, is not adequate to maintain pavement quality – particularly in view of the minimal amount of paving to be done. We intend to experiment with doing at least some of this chip seal by contract so that we can get a cost comparison with our in-house cost of sealing.

4. Roadway centerline will be applied to approximately 100 to 150 miles of County Roads this construction season. As with last year, we are simply not repainting many centerlines that are severely faded – we have revised our program so that we are only painting centerlines on roads having an Average Daily Traffic (ADT) count over 500. We have also discontinued application of edge lines due to funding considerations.

5. We plan to waterproof the following existing bridges in 2011:
 - FRA-74-147
 - WAW-1086-249
 - CLA-56-83
 In addition, all the newly reconstructed bridges from the above list will be waterproofed as they are constructed.

6. We intend to continue to pursue earthwork projects in 2011. These are projects that require very little purchase of raw materials; since we already have the equipment and the personnel on our payroll, our only additional expense is in purchasing fuel and additional maintenance for our equipment. We are at varying stages of preparation for several earthwork projects, including:

Bunker Hill Road (CR 24) at Frank Road

Indian Hill Road (CR 62) hump removal – this project, if undertaken, will be with the assistance of the L&M Mineral Company, which has a mine site adjacent to the road.

In addition to the above, we may be cutting back banks and moving ditches in an effort to increase the vehicle recovery area, and thus increase safety, on several roads. All of these projects depend on the cooperation of adjoining land owners, since many of the excavations are extended slightly onto private property.

7. We have Federal Highway Administration (FHWA) funding for the complete replacement of bridge #FRA-425-299 on Race Road in Franklin Township.
8. A Federal Highway Administration (FHWA) project to provide guardrail along Baltzley Valley Road (CR 69), Bunker Hill Road (CR 24) and River Road (CR 16) should be bid and constructed in 2011.
9. We plan to complete renovation of our electrical systems. This renovation was in response to the voluntary workers compensation inspection report done in 2010.
10. We plan to complete the renovation of the tar tank piping and electrical supply – this project was undertaken to clean up the area around our 10,000 gallon tar storage tank and to preclude the possibility of a spill.
11. We plan to complete renovation of our sign-making area and equipment in order to comply with the Federal Highway Administration's sign retro-reflectivity standards. These standards, passed in 2008, require that all signs conform to new standards by 2015 (regulatory signs) and 2018 (directional signs).
11. We are renovating existing structures at our New Philadelphia location in order to increase vehicle storage areas. When this work is complete, we intend to market our facility at Gilmore in Washington Township. This Gilmore facility has been used for winter storage of vehicles for several years, and the facility is at the point of needing significant repair in the next few years.

LONG TERM GOALS

The long term goal of this office is to construct and maintain a system of roads and bridges that will safely and efficiently serve the citizens of Tuscarawas County within our funding constraints. Generally, our long-term goals remain the same as last year, as follows:

1. We need to continue and increase our safety related projects in areas having high accident potential and high accident history. The accident rate on county roads is more than 3 times the rate of accidents on state routes; this is due in large part to the geometry problems on the county roads needing correction.
2. The county paving program needs to be at a minimum rate of 25 to 30 miles per year in order to build additional pavement strength and to maintain the integrity of the pavement. The average traffic counts continue to increase, and truck traffic in particular has increased recently because of the renewed coal mining in the county.

Most of our current roadways are inadequate to handle the weight of modern traffic, and as a result we generally have considerable damage due to truck traffic. We plan to pave approximately 12 miles of roadway in 2011 if we are successful in obtaining OPWC grants; there is very little money available in our local budget for paving. At this rate of paving on our 467 miles of roadway, we will pave each roadway every 39 years on the average – this is obviously not sufficient to maintain a decent roadway system.

3. The bridge maintenance and replacement program needs to be maintained at the rate of 8 to 9 bridges per year in order to keep our inventory of load-limited bridges to a minimum.

RECOMMENDATIONS

The County does not currently have sufficient income to properly maintain our roads and bridges and to address the many safety problems. We recommend that the Commissioners take the appropriate steps in accordance with the Ohio Revised Code to provide additional funding to this Department.

