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Ohio Rural Road and Bridge Problems: Issues and Alternative Solutions

By

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Introduction

The value of the total capital investment in Ohio's roads and bridges exceeds that of all other Ohio public projects put together. Yet in recent years, maintenance programs designed to protect this huge investment have not kept pace with the deterioration that occurs due to wear-and-tear and natural phenomena. This report will review the problems which have led to the decline in Ohio's road and bridge maintenance programs and will offer suggestions which might help ease this critical situation.

The Maintenance Shortfall

To protect the basic road structure, the Ohio Department of Transportation (ODOT) reports that each mile of state highway should, at a minimum, be resurfaced every ten years. This means that of the 19,000 miles of state highways in Ohio, 1,900 miles should be resurfaced each year. Currently, ODOT resurfaces only 770-800 miles annually, a situation which can have disastrous financial consequences in the future. The cost of major reconstruction on a road which has basic structural damage can be 5-8 times greater than the cost of resurfacing. At the county level, many county engineers are delaying bridge rehabilitation programs

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and cutting back on resurfacing projects, resorting instead to a "bare-bones" maintenance strategy of patching and sealing.

Declining Revenues and Rising Costs

The basic problem behind Ohio's faltering road and bridge maintenance programs is declining revenues. Steady increases in gasoline consumption in the years prior to 1973 caused Ohio gasoline tax revenues to rise at an average annual rate of 3 percent per year. At the same time, inflation was under 5 percent. Since 1973, rapid increases in the prices of oil products have resulted in decreased gasoline consumption and enormous increases in the cost of road and bridge materials. While gas tax revenues have been steadily decreasing, the cost of materials has been rising at a 30-35 percent annual rate (although with the recent "oil glut" this rate has eased somewhat) (Table 1).

The problem with declining gas tax revenues lies in the fact that the gas tax has been fixed at 7¢ per gallon since 1959. In 1973 when gas was selling at 40¢ per gallon, the gas tax was 17.5 percent of the purchase price. In 1981 with gas selling at around $1.25 per gallon, the gas tax had been only 5.6 percent of the purchase price. Although the tax was increased by 3¼¢ per gallon beginning July 1, 1981, the basic reason why gas tax revenues have been declining has not been changed. With the current cents per gallon gas tax, the proceeds of the gas tax are totally dependent on gasoline consumption. In 1970, when gasoline consumption was up, Ohio collected an average of $54 in gas tax revenues from each Ohio licensed driver. This amount was just slightly under the national average. In 1979, Ohio collected $49 per li-

censed driver compared to the national average of $68. Meanwhile by 1979, the purchasing power of the dollar had eroded to less than half of what it was in 1970. If gasoline consumption continues to decline, the fixed cents per gallon tax increase will prove to be merely a temporary solution to Ohio's road and bridge woes.

Funding Differences Between the State and County Levels

While the increase in the gasoline tax will significantly boost revenues for ODOT, at least in the short-term, the effect on most county road budgets will be a token increase at best. Unlike ODOT, the counties do not receive the majority of their road funding from gasoline taxes. Instead, most revenue comes from vehicle registration fees. Wayne County, for example, ranks fifth out of 88 Ohio counties in county road mileage and eighth in county bridges maintained. Wayne County receives approximately 80 percent of its road and bridge funds from vehicle registration fees. Only 15 percent of budget funding comes from gasoline taxes. Wayne's share of the 3¼ cent gas tax increase is expected to hike its road and bridge budget by a mere 7 percent.

The attention given by the media to the gas tax increase may lead to public pressure on county engineers to mount ambitious road and bridge programs. In reality, the counties' share of the gas tax increase will probably do little more than cover inflation costs for one year.

Can Present Funds Be Used More Efficiently?

Although the purchasing power of county road and bridge budgets has shrunk significantly in recent years, there are some

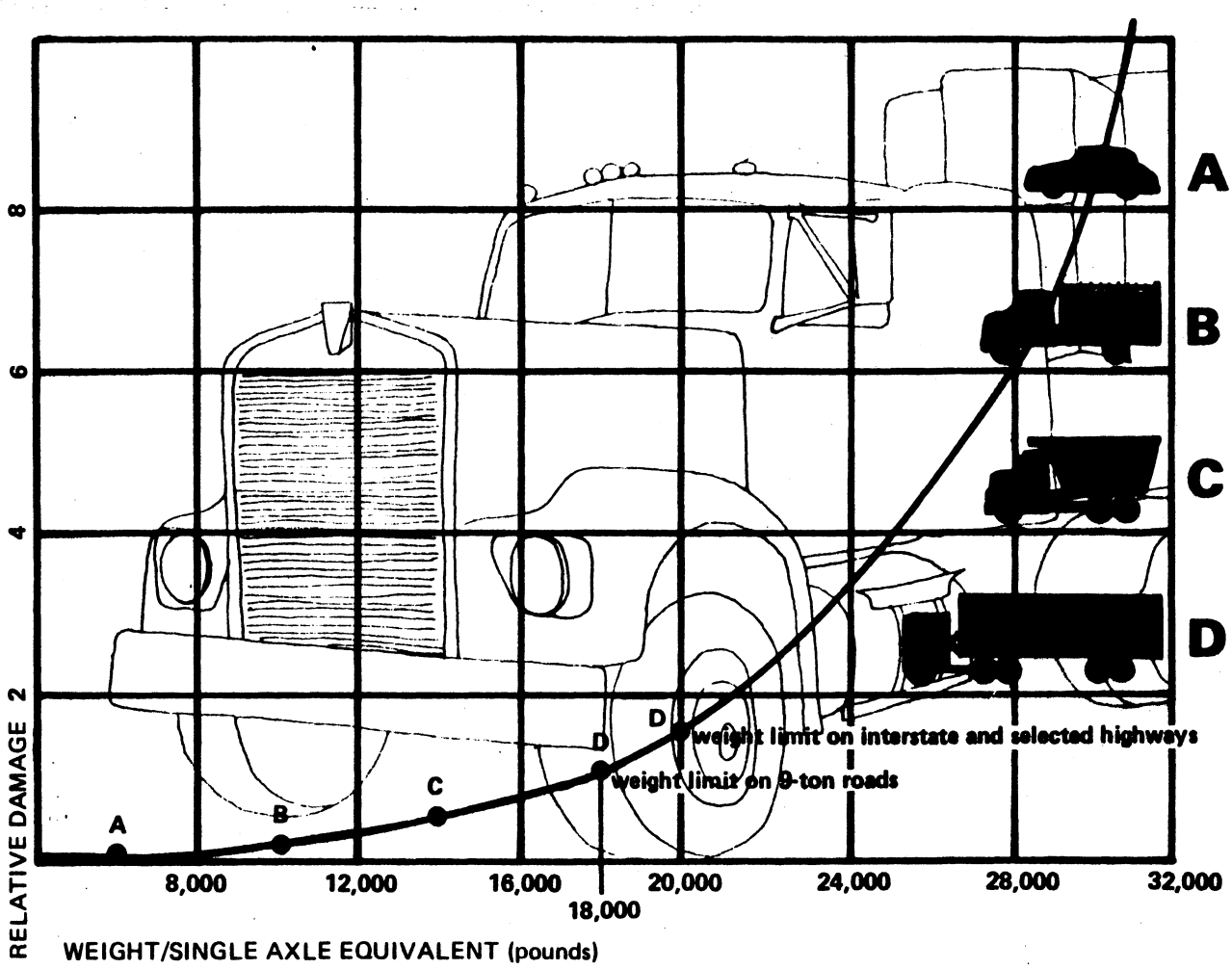
people, including at least one county engineer, who feel that existing county road revenues can and should be used more efficiently before any additional funding is approved. This argument centers around a 1962 law (Section 5543.19 (B)) which requires that all proposed bridge improvements estimated to cost more than $40,000 to be let to contract. Today's equivalent of 40,000 dollars of 1962 means that most bridge improvements must be let to contract. In the opinion of some people, tax dollars could be saved if the county engineer was permitted to do more of what he or she is being paid to do - design bridges and use county labor and equipment to eliminate the overhead and profit which are incorporated into any contract bid.

Heavy Vehicles and Road Damage

Two major factors which contribute to serious and premature road damage are heavy axle weights and high numbers of heavy vehicles. The standard rural road is designed to support axle weights of up to 18,000 pounds. A national trend to increase the maximum axle weight from 18,000 to 20,000 pounds is cause for concern. While the increase would apply only to vehicles on the interstate system, any unauthorized trucks with 20,000 pound axle loads would inflict 50 percent more damage to rural roads than trucks with 18,000 pound axle loads (Figure 1).

The increasing numbers of heavy vehicles is a second major factor contributing to road damage. A 40 ton truck weighs 20 times as much as an automobile, but it causes 9,600 times as much stress on the pavement and roadbed.

Figure 1: Damage Level Escalation Due to Added Vehicle Weight Per Axle



Source: Minnesota Department of Highways, Axle Load: Effects on Highway, p.2.

The Enforcement Dilemma

Enforcement of vehicle weight restrictions is a controversial issue. ODOT states that weigh stations on the Ohio interstate system have a citation rate of less than 1 percent. This low rate is primarily due to the fact that truckers are almost always aware of whether they are operating overweight vehicles. An open interstate weigh station surprises few illegal truckers since most truckers receive ample warning over their CB radios that a weigh station is in operation. ODOT claims that the forewarned illegal trucker usually will leave the interstate at the next exit and travel on county roads which are even less able to withstand overweight vehicles.

One solution to this problem is to locate portable scales on the county roads surrounding the operating interstate weigh stations. At the present time, ODOT has nine of the costly portable scales with which to patrol 85,000 miles of state, county, and township roads. Resources are not available to purchase more of the scales even though strong evidence suggests they are an effective deterrent to overweight vehicles. With the element of surprise working in their favor, portable scale operations have a citation rate in excess of 95 percent.

ODOT argues that since it cannot afford additional portable scales, the next best alternative is to cut back on the operating hours of interstate weigh stations. This would at least keep overweight trucks on the interstate system and minimize overall damage to the Ohio road system. Despite the logic of this

argument, ODOT has continued to operate interstate weigh stations because it does not want to risk public criticism that the agency is not protecting the state's road investment.

The Bridge Problem

Many Ohio roads and bridges were originally built in the 1920s and 1930s. Since that time, the sizes and weights of farm machinery and delivery vehicles have increased dramatically. Coal trucks, grain and feed trucks, milk trucks, fertilizer applicators, and tractors can easily weigh anywhere from 5 to 40 tons or more. While the maximum legal vehicle weight on any Ohio road is 40 tons, there are bridges on many county road systems which are rated to carry 12-15 tons of total weight per vehicle. Some bridges have ratings as low as 5-6 tons. Bridges which have restricted ratings are posted and vehicles are required to either reduce their loads or detour around the bridge. In reality, most heavy vehicle drivers pay little heed to bridge postings because of the costs involved in reducing loads or detouring, and because bridge postings are rarely enforced.

Identifying Bridge Deficiencies

Bridge inadequacies fall into two categories, "structural deficiencies" and "functional deficiencies." Structural deficiencies weaken a bridge and often necessitate legal-load-limit reductions. ODOT lists the following examples of common structural deficiencies:

- Structural members of an older bridge are sound but too small for today's heavier traffic loads.

- Main bridge members are deteriorated so badly as to reduce load capacity.
- Main bridge members are damaged by vehicle collision, reducing strength.
- Piers or abutments are weakened by weathering or overloads.
- Bridge footings are undermined by changes in stream flow.

Functional deficiencies are those factors such as original bridge design and bridge approach which do not meet modern traffic volume or safety and other standards. Common functional deficiencies include:

- A roadway is too narrow for modern traffic.
- The horizontal or vertical alignment of a bridge and the approaching roadway is poor.
- The clearance above or below a bridge is insufficient for passage of modern traffic.
- Poor waterflow under a bridge causes flooding upstream.

ODOT's Bridge Sufficiency Rating System

Information on structural and functional deficiencies is useful for identifying the kind of attention a bridge requires. However, to denote the overall serviceability of Ohio bridges, ODOT employs a "sufficiency" rating system. Under this system each bridge is assigned a rating between 0 and 150. This rating is interpreted as a "percentage of sufficiency". Generally, a bridge with a sufficiency rating less than 50 percent is considered as needing replacement. Bridges with a rating 50 through

80 percent need some level of rehabilitation. Ratings over 80 and under 100 percent are given to bridges which require cosmetic repairs such as painting and routine deck maintenance.

The Ohio Bridge Inventory

ODOT maintains a computerized inventory of all bridges in Ohio which are 10 feet or more in overall length. Tables 2, 3, 4, 5, and 6 are summaries of some of the data contained in this file.

Table 2 categorizes Ohio bridges by county and decade of original construction or major reconstruction. Total figures for the state as a whole indicate that 26.7 percent of all Ohio bridges are more than fifty years old. This figure alone does not mean that all of these bridges are necessarily unsafe. However, older bridges are more likely to require major expenditures than newer bridges. Bridge age is one factor which ODOT and Ohio county engineers consider when estimating funding needs for future bridge programs.

Table 3 indicates the number of functionally obsolete and structurally deficient bridges in each Ohio county. These figures are useful in identifying the extent and the nature of bridge problems in each county, but this method of appraisal also tends to be highly subjective. Ohio law does not require a bridge inspector to have an engineering degree. ODOT points out that the lack of this job requirement has resulted in different levels of expertise among bridge inspectors. When bridge assessments must be made on a basis of personal judgment, the report of an experienced inspector with an engineering de-

gree can vary greatly with a report done by an inspector with little or no experience or education. In the latter case, ODOT suspects it is simply receiving "prettiness" reports. Bridge deficiency numbers should therefore be placed in the perspective that they are only part of evaluating the needs of Ohio bridge programs.

Table 4 lists the number of bridges in each county according to maintenance responsibility. The final totals for the state as a whole reveal that 66.3 percent of Ohio bridges are maintained by the county. ODOT maintains 28 percent of Ohio bridges - less than half the number of bridges maintained by the county. These figures indicate that any proposal to benefit Ohio bridge programs should give high consideration to the role of the county.

Table 5 gives further evidence that it is the plight of county bridge programs that probably has not received sufficient attention. The percent of maximum legal load rating for bridges, according to maintenance agency, reveals that bridges maintained by ODOT are generally rated higher than bridges maintained by the counties. This is not to say that ODOT does not have serious problems in its bridge program. It is, nevertheless, necessary to consider that such remedies as increasing the gasoline tax contributes to ODOT bridge programs much more than they contribute to county bridge programs.

County revenues did increase significantly in 1979 when vehicle registration fees increased from $10 to $20 per vehicle. But like the gasoline tax, the total revenues from vehicle regis-

trations are primarily fixed according to the number of registered vehicles in a county. Effective solutions to county road and bridge problems must deal with this fixed-revenue aspect.

Table 6 is a summary of county bridge statistics, including the number of bridges in each county needing replacement or rehabilitation. The total cost of undertaking these programs is estimated to be 2.2 billion dollars to replace or rehabilitate nearly 15,000 bridges in the state of Ohio. Table 6 was taken from ODOT's bridge inventory by the Ohio County Engineers Association and published as part of a report titled, "Report on County Bridges", (May, 1981).

Suggested Solutions

From interviews and literature on road and bridge issues the following suggestions are offered:

1) Revamp the Gas Tax Formula

It is recommended that the current fixed cents per gallon gasoline tax be changed to a fixed percentage of the total dollar gasoline sale. This would end the current situation where road and bridge revenues are dependent on the level of gasoline consumption.

2) Increase Federal Aid but Request More Autonomy

A great deal of federal matching highway funds have been lost in the past because Ohio could not come up with the state's required 20 percent share. Efforts are being made to lower the states' share to 10 percent of total funding.

It is recommended that efforts be made to curb Ohio's dependence on federal dollars. When the state accepts federal monies, it accepts the federal regulations that each road and bridge project must follow. In adhering to federal specifications and by delaying projects until federal funds are secured, the cost of a project can easily double and even triple. If the federal government granted rebates to the states on federal gasoline taxes, federal funds would be received without incurring an expensive obligation to comply with federal standards.

3) Use Present Funds More Efficiently

This can be done by changing the 1962 law which requires all bridge projects costing more than $40,000 to be let to contract.

4) Consider Road Abandonment

Much of today's rural road system was fashioned during the horse and wagon days when travel times were longer and farms were smaller. Some agricultural economists claim that with larger farms and faster traveling times, many miles of rural roads could be eliminated. However, the legal implications of road abandonment would seem to make this alternative unrealistic at least in the short-term. More detailed analysis of the costs and benefits of road and bridge abandonment in Ohio is needed.

5) Increase Vehicle Registration Revenues

This could be accomplished by assessing different fees on vehicles, according to a vehicle's "book" value. Compared to other states, Ohio's flat $20 registration fee is very low for vehicles with high book values.

6) Increase Efforts to Enforce Vehicle Weight Restrictions

More portable scales are needed to make enforcement effective. It is imperative that Ohio protect its road and bridge investment from the damaging effects of overweight vehicles.

7) Conduct Analysis on Whether Heavy Vehicles Should Pay More

A Columbus, Ohio-based group called Motorists of Ohio for Vehicular Equity (MOVE) maintains that a study is needed to determine whether heavy vehicles should pay more to maintain highways. MOVE points out that Ohio's axle-mile tax on trucks has remained unchanged ever since it was established in 1953. The tax varies from a half cent to 2.5 cents per mile, depending on the number of axles on a truck. It is recommended that the heavy vehicle tax structure be reviewed.

8) Conduct Further Analysis

Additional study is needed on road and bridge abandonment, financing, and vehicle load limits. It is recommended that federal, state, and local authorities work to better coordinate regulation and planning efforts.

Table 1: A Cost Comparison for Selected Items Purchased By County Engineers, Ohio, 1973, 1977 and 1980

Item	1973	1977	1980	Increase From 1973 to 1980	Percent Increase From 1973 to 1980
Gasoline	.2185 per gal.	.5050 per gal.	1.086 per gal.	.79	361%
Gravel #67	2.10 per ton	2.60 per ton	4.75 per ton	2.65 per ton	126%
Limestone	2.80 per ton	3.20 per ton	5.85 per ton	3.05 per ton	109%
Bituminous Mix	7.00 per ton	13.50 per ton	24.00 per ton	17.00 per ton	243%
Liquid Asphalt	.1512 per gal.	.3559 per gal.	.90 per gal.	.7488 per gal.	495%
Salt	11.00 per ton	12.98 per ton	19.36 per ton	8.36 per ton	76%
Cinders	1.10 per ton	1.60 per ton	2.50 per ton	1.40 per ton	127%

Source: County Engineers Office of Wayne County, Ohio

Table 2: Total Number of Bridges With Original Construction or Major Reconstruction by Decades for Each County and the State of Ohio, 1900-1980

County	Before 1900	1901-1910	1911-1920	1921-1930	1931-1940	1941-1950	1951-1960	1961-1970	1971-1980	Total
Adams	14	2	13	56	53	55	82	95	50	420
Allen	40	15	21	44	43	32	101	130	112	538
Ashland	79	2	39	22	37	9	65	61	43	357
Ashtabula	129	13	10	33	87	38	52	60	40	462
Athens	10	5	8	50	89	51	58	81	53	405
Auglaize	4	29	19	36	83	24	105	100	90	490
Belmont	205	5	10	46	48	19	36	46	56	471
Brown	-	2	1	33	37	46	119	71	50	359
Butler	5	6	57	83	106	37	57	81	97	529
Carroll	7	5	3	25	21	45	26	59	23	214
Champaign	5	26	9	24	83	15	57	55	43	317
Clark	-	-	5	20	13	20	57	93	53	261
Clermont	40	26	40	38	55	16	66	151	110	542
Clinton	180	5	6	13	43	18	28	61	47	401
Columbiana	20	5	30	94	52	41	80	102	72	496
Coshocton	135	1	6	18	26	15	44	90	99	434
Crawford	44	17	10	41	23	12	41	78	83	349
Cuyahoga	33	23	45	126	133	33	107	202	179	881
Darke	149	25	12	53	71	35	43	76	66	530
Defiance	8	27	84	46	18	7	28	101	41	360
Delaware	6	4	37	93	32	20	75	55	86	409
Erie	12	1	6	14	35	15	78	67	44	272
Fairfield	83	2	55	44	26	25	56	39	59	389
Fayette	4	2	2	20	24	7	72	123	71	325

Table 2, Cont'd

County	Before 1900	1901-1910	1911-1920	1921-1930	1931-1940	1941-1950	1951-1960	1961-1970	1971-1980	Total
Franklin	16	2	22	35	78	50	114	378	238	933
Fulton	-	6	19	25	24	18	59	40	48	239
Gallia	15	-	2	73	25	37	63	105	40	360
Geauga	31	-	2	28	32	21	51	59	48	272
Greene	9	10	27	26	64	71	66	64	105	442
Guernsey	15	11	21	43	71	99	69	192	46	567
Hamilton	41	12	55	93	77	34	99	178	196	785
Hancock	54	3	4	60	81	72	162	107	70	613
Hardin	17	-	32	34	41	16	61	103	86	390
Harrison	114	-	-	15	17	16	26	23	20	231
Henry	19	7	33	99	42	53	45	100	72	470
Highland	14	11	32	39	38	40	77	79	107	437
Hocking	4	1	2	18	44	71	147	102	38	427
Holmes	2	-	9	52	24	21	113	136	63	420
Huron	78	3	9	24	49	39	78	145	118	543
Jackson	21	3	1	29	40	23	66	75	38	296
Jefferson	167	5	9	49	16	7	28	43	33	357
Knox	35	16	14	24	64	32	58	48	93	384
Lake	-	-	4	17	14	12	84	95	16	242
Lawrence	110	2	2	28	31	29	32	57	40	331
Licking	123	6	6	22	34	53	75	97	101	517
Logan	19	52	24	29	25	37	56	104	59	405
Lorain	43	7	20	33	57	14	124	163	50	511
Lucas	6	2	13	91	56	20	88	118	78	472

Table 2, Cont'd

County	Before 1900	1901-1910	1911-1920	1921-1930	1931-1940	1941-1950	1951-1960	1961-1970	1971-1980	Total
Madison	8	2	7	25	30	20	98	85	36	311
Mahoning	17	5	15	73	130	41	124	118	53	576
Marion	117	1	2	14	40	14	21	95	74	378
Medina	37	-	2	31	30	17	91	80	32	320
Meigs	-	-	9	61	49	28	62	61	36	306
Mercer	104	77	23	10	17	36	56	66	51	440
Miami	-	1	14	50	50	16	175	96	56	458
Monroe	82	-	-	19	23	16	33	22	5	200
Montgomery	27	5	36	50	106	85	184	234	78	805
Morgan	194	9	2	19	19	14	25	24	5	311
Morrow	6	3	5	6	22	23	82	96	76	319
Muskingum	376	5	9	31	34	38	44	68	29	634
Noble	129	-	1	28	25	21	52	60	21	337
Ottawa	-	1	1	6	38	19	39	38	40	182
Paulding	33	22	24	12	38	29	30	29	48	265
Perry	121	15	8	24	59	15	24	29	23	318
Pickaway	119	7	3	27	31	14	41	38	20	300
Pike	1	-	4	6	32	41	62	62	52	260
Portage	5	8	5	15	67	34	51	64	39	288
Preble	169	7	12	36	41	12	33	47	27	384
Putnam	46	9	11	7	18	17	103	78	80	369
Richland	142	3	2	18	100	36	81	122	83	587
Ross	54	17	41	66	82	44	75	64	141	584
Sandusky	3	1	7	43	41	18	149	79	53	394

Table 2, Cont'd

County	Before 1900	1901-1910	1911-1920	1921-1930	1931-1940	1941-1950	1951-1960	1961-1970	1971-1980	Total
Scioto	4	2	4	47	317	108	74	50	64	670
Seneca	16	4	35	71	111	92	85	76	65	558
Shelby	54	4	20	44	42	8	46	81	103	403
Stark	41	5	11	56	57	57	159	92	43	521
Summit	7	-	3	56	98	30	99	155	95	543
Trumbull	14	3	14	41	80	42	117	108	72	491
Tuscarawas	20	15	17	55	43	31	51	143	50	425
Union	16	5	13	40	16	7	32	71	40	240
Van Wert	30	3	10	49	84	43	50	103	64	436
Vinton	9	6	19	29	80	30	91	56	24	344
Warren	6	24	33	70	83	20	59	106	104	505
Washington	30	27	17	51	34	30	77	87	49	402
Wayne	20	4	25	96	120	46	96	128	69	604
Williams	17	7	49	7	20	18	68	48	37	271
Wood	34	22	29	74	80	33	107	135	59	573
Wyandot	44	9	5	17	26	25	43	91	102	362
TOTALS	4,317	745	1,437	3,538	4,695	2,788	6,363	7,973	5,668	37,529
Percent of Total	11.5%	2.0%	3.8%	9.4%	12.5%	7.4%	17.0%	21.2%	15.1%	100%

Source: Ohio Department of Transportation

Table 3, Cont'd

County	Number of Bridges	Number Functionally Obsolete	Number Structurally Deficient	County	Number of Bridges	Number Functionally Obsolete	Number Structurally Deficient
Madison	311	38	12	Scioto	670	217	138
Mahoning	576	38	50	Seneca	558	1	63
Marion	378	1	9	Shelby	403	3	90
Medina	320	15	11	Stark	521	15	29
Meigs	306	19	6	Summit	543	11	7
Mercer	440	105	33	Trumbull	491	13	23
Miami	458	31	20	Tuscarawas	425	46	45
Monroe	200	66	3	Union	240	1	26
Montgomery	805	13	36	Van Wert	436	19	54
Morgan	311	45	126	Vinton	344	32	27
Morrow	319	7	14	Warren	505	7	9
Muskingum	634	85	129	Washington	402	17	35
Noble	337	100	18	Wayne	604	33	114
Ottawa	182	3	24	Williams	271	2	38
Paulding	265	13	41	Wood	573	119	35
Perry	318	27	60	Wyandot	362	18	51
Pickaway	300	8	10				
Pike	260	4	5	TOTALS	37,529	2,857	3,741
Portage	288	55	19	Percent of Total		7.6%	10.0%
Preble	384	5	18				
Putnam	369	10	12				
Richland	587	55	83	Source: Ohio Department of Transportation			
Ross	584	25	52				
Sandusky	394	6	39				

Table 4: Total Number of Bridges for Each Maintenance Responsibility and County, 1981

County	Number of Bridges	MAINTENANCE RESPONSIBILITY							
		ODOT	Other State	County	City+ Local	Fed. Agency	R.R.	Other Private	Combi-nation
Adams	420	135		285					
Allen	538	110		415	11			2	
Ashland	357	160		179	13	1	3		1
Ashtabula	462	166		278	13		1	2	2
Athens	405	157		233	10		1		4
Auglaize	490	101		389					
Belmont	471	152		314	2		2		1
Brown	359	122		235					2
Butler	529	87		392	45		3		2
Carroll	214	55		158			1		
Champaign	317	93		223					1
Clark	261	150		82	26		2		1
Clermont	542	147		393					2
Clinton	401	97		304					
Columbiana	496	140		327	29				
Coshocton	434	87		346		1			
Crawford	349	86		245	14				4
Cuyahoga	881	246	28	315	263		23		6
Darke	530	119		410					1
Defiance	360	58		301	1				
Delaware	409	100		299	10				
Erie	272	80	41	144	2		1		4
Fairfield	389	94		283	12				
Fayette	325	98		218	9				

Table 4, Cont'd

County	Number of Bridges	MAINTENANCE RESPONSIBILITY							
		ODOT	Other State	County	City+ Local	Fed. Agency	R.R.	Other Private	Combi-nation
Franklin	933	358	3	407	142		6	7	10
Fulton	239	34	21	178	4				2
Gallia	360	134		226					
Geauga	272	66		202	4				
Greene	442	95		344	2			1	
Guernsey	567	171		390	2		4		
Hamilton	785	263		480	34		3	2	3
Hancock	613	141		470	2				
Hardin	390	55		335					
Harrison	231	71		152	3	1	1	2	1
Henry	470	89		371	10				
Highland	437	132		300			1		4
Hocking	427	132		292	2		1		
Holmes	420	94		325			1		
Huron	543	104		419	17		2		1
Jackson	296	116		167	13				
Jefferson	357	87		264	6				
Knox	384	106		278					
Lake	242	75		147	12		2		6
Lawrence	331	128		197	4			1	1
Licking	517	147		321	48				1
Logan	405	113		290					2
Lorain	511	133	49	272	46		3		8
Lucas	472	107	26	178	141		10		10

Table 4, Cont'd

County	Number of Bridges	MAINTENANCE RESPONSIBILITY							
		ODOT	Other State	County	City+ Local	Fed. Agency	R.R.	Other Private	Combi-nation
Madison	311	123		188					
Mahoning	576	133	47	323	70			2	1
Marion	378	105		270	3				
Medina	320	176		135					9
Meigs	306	115		191					
Mercer	440	120		319					1
Miami	458	123		332			1	1	1
Monroe	200	93		107					
Montgomery	805	168		566	67			1	3
Morgan	311	58		252				1	
Morrow	319	99		220					
Muskingum	634	167		460	7				
Noble	337	170		167					
Ottawa	182	52	4	121	4				1
Paulding	265	52		213					
Perry	318	100		218					
Pickaway	300	109		191					
Pike	260	92		167			1		
Portage	288	102	23	143	3		17		
Preble	384	129		254					1
Putnam	369	63		306					
Richland	587	134		410	37				6
Ross	584	147		428	2		6		1
Sandusky	394	88	66	230	9		1		

Table 4, Con't

County	Number of Bridges	MAINTENANCE RESPONSIBILITY							
		ODOT	Other State	County	City+ Local	Fed. Agency	R.R.	Other Private	Combi-nation
Scioto	670	150		508	9		3		
Seneca	558	92	1	453	12				
Shelby	403	83		303	15				2
Stark	521	169		320	28		4		
Summit	543	176	13	251	101				2
Trumbull	491	202	28	254	1	1	5		
Tuscarawas	425	160		251	12	1			1
Union	240	105		135					
Van Wert	436	87		339	10				
Vinton	344	101		243					
Warren	505	104		395	4				2
Washington	402	140		254	5		2	1	
Wayne	604	146		449	3				6
Williams	271	70	24	142	1				34
Wood	573	165	39	359	7				3
Wyandot	362	102		253	7				
TOTALS	37,529	10,561	413	24,883	1,369	5	121	23	154
Percent of Total		28.1%	1.1%	66.3%	3.6%	-	-	-	-

Source: Ohio Department of Transportation

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Adams	ODOT		14	5	116
	Other State Agency				
	County	31	50		204
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Allen	ODOT		2		108
	Other State Agency				
	County	25	4	6	380
	City & Local		3		8
	Federal				
	Railroad				
	Other Private				2
	Combination				
Ashland	ODOT		1		159
	Other State Agency				
	County	55	35	2	87
	City & Local		2		11
	Federal				1
	Railroad	1	2		
	Other Private				
	Combination				1
Ashtabula	ODOT				166
	Other State Agency				
	County	23	148	7	100
	City & Local	1	1		11
	Federal				
	Railroad	1			
	Other Private				2
	Combination	1		1	

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Athens	ODOT		3	1	153
	Other State Agency				
	County	62	12	18	141
	City & Local				10
	Federal				
	Railroad				1
	Other Private				
	Combination				4
Auglaize	ODOT			1	100
	Other State Agency				
	County	34	2	52	301
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Belmont	ODOT		5	2	145
	Other State Agency				
	County	219	59		36
	City & Local				2
	Federal				
	Railroad				2
	Other Private				
	Combination				1
Brown	ODOT	2	11	4	105
	Other State Agency				
	County	14	49	6	166
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				2

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Butler	ODOT		1		86
	Other State Agency				
	County	30	14		348
	City & Local	2	3		40
	Federal				
	Railroad	2			1
	Other Private				
	Combination				2
Carroll	ODOT			2	53
	Other State Agency				
	County	14	1	2	141
	City & Local				
	Federal				
	Railroad	1			
	Other Private				
	Combination				
Champaign	ODOT		1	1	91
	Other State Agency				
	County	26			197
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				1
Clark	ODOT		1		149
	Other State Agency				
	County	17	19		46
	City & Local	3			23
	Federal				
	Railroad				2
	Other Private				
	Combination				1

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Clermont	ODOT		1	2	144
	Other State Agency				
	County	134	96		163
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				2
Clinton	ODOT		3	5	89
	Other State Agency				
	County	24	65	14	201
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Columbiana	ODOT		3	1	136
	Other State Agency				
	County	233	48	2	44
	City & Local	12	4		13
	Federal				
	Railroad				
	Other Private				
	Combination				
Coshocton	ODOT		3	3	81
	Other State Agency				
	County	153	79		114
	City & Local				
	Federal				1
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Crawford	ODOT			1	85
	Other State Agency				
	County	34	48	5	158
	City & Local	2			12
	Federal				
	Railroad				
	Other Private				
	Combination		2		2
Cuyahoga	ODOT				246
	Other State Agency				28
	County	28	35	2	250
	City & Local	30	10	1	222
	Federal				
	Railroad	1		1	21
	Other Private				
	Combination		2		4
Darke	ODOT		1	1	117
	Other State Agency				
	County	47	116	13	234
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				1
Defiance	ODOT				58
	Other State Agency				
	County	241	24	2	34
	City & Local				1
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Delaware	ODOT			1	99
	Other State Agency				
	County	15	38	14	232
	City & Local				10
	Federal				
	Railroad				
	Other Private				
	Combination				
Erie	ODOT				80
	Other State Agency				41
	County	7			137
	City & Local				2
	Federal				
	Railroad			1	
	Other Private				
	Combination				4
Fairfield	ODOT		1	6	87
	Other State Agency				
	County	121	81	28	53
	City & Local		1		11
	Federal				
	Railroad				
	Other Private				
	Combination				
Fayette	ODOT				98
	Other State Agency				
	County	27	5	22	164
	City & Local	1			8
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Franklin	ODOT			1	357
	Other State Agency				3
	County	15	33	15	344
	City & Local	4			138
	Federal				
	Railroad				6
	Other Private	1			6
	Combination			1	9
Fulton	ODOT		1		33
	Other State Agency				21
	County	27	1		150
	City & Local				4
	Federal				
	Railroad				
	Other Private				
	Combination				2
Gallia	ODOT		1	3	130
	Other State Agency				
	County	40	71	18	97
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Geauga	ODOT				66
	Other State Agency				
	County	2	26	21	153
	City & Local	2			2
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Greene	ODOT		1	3	91
	Other State Agency				
	County	100	56	2	186
	City & Local	1			1
	Federal				
	Railroad				
	Other Private				1
	Combination				
Guernsey	ODOT		2	9	160
	Other State Agency				
	County	45	75	31	239
	City & Local				2
	Federal				
	Railroad	4			
	Other Private				
	Combination				
Hamilton	ODOT			2	261
	Other State Agency				
	County	18	33	19	410
	City & Local	3	1	9	21
	Federal				
	Railroad	1			2
	Other Private	1		1	
	Combination			1	2
Hancock	ODOT				141
	Other State Agency				
	County	278	97	4	91
	City & Local				2
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Hardin	ODOT				55
	Other State Agency				
	County	21	41		273
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Harrison	ODOT	1		2	68
	Other State Agency				
	County	80	43	3	26
	City & Local	1	2		
	Federal				1
	Railroad				1
	Other Private				2
	Combination				1
Henry	ODOT				89
	Other State Agency				
	County	147	36		188
	City & Local	4			6
	Federal				
	Railroad				
	Other Private				
	Combination				
Highland	ODOT	1	4	1	126
	Other State Agency				
	County	28	57	21	194
	City & Local				
	Federal				
	Railroad				1
	Other Private				
	Combination	1			3

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Hocking	ODOT		3	1	128
	Other State Agency				
	County	110	79		103
	City & Local				2
	Federal				
	Railroad	1			
	Other Private				
	Combination				
Holmes	ODOT		1		93
	Other State Agency				
	County	28	80	1	216
	City & Local				
	Federal				
	Railroad				1
	Other Private				
	Combination				
Huron	ODOT				104
	Other State Agency				
	County	72	136	45	166
	City & Local	7	2	1	7
	Federal				
	Railroad	1			1
	Other Private				
	Combination				1
Jackson	ODOT		3	3	110
	Other State Agency				
	County	29	38	8	92
	City & Local	4	2		7
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Jefferson	ODOT				87
	Other State Agency				
	County	24	26		214
	City & Local		1		5
	Federal				
	Railroad				
	Other Private				
	Combination				
Knox	ODOT		4	3	99
	Other State Agency				
	County	98	47	14	119
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Lake	ODOT	1			74
	Other State Agency				
	County	7	45	4	91
	City & Local	2			10
	Federal				
	Railroad				2
	Other Private				
	Combination	1	4		1
Lawrence	ODOT		5	1	122
	Other State Agency				
	County	80	63	11	43
	City & Local	1	3		
	Federal				
	Railroad				
	Other Private	1			
	Combination			1	

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Licking	ODOT		2	1	144
	Other State Agency				
	County	18	71	25	207
	City & Local	3	2	1	42
	Federal				
	Railroad				
	Other Private				
	Combination				1
Logan	ODOT		2	2	109
	Other State Agency				
	County	81	45	5	159
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				2
Lorain	ODOT			1	132
	Other State Agency				49
	County		2		270
	City & Local	1			45
	Federal				
	Railroad	2			1
	Other Private				
	Combination				8
Lucas	ODOT				107
	Other State Agency				26
	County	9	5	8	156
	City & Local	2	7	1	131
	Federal				
	Railroad	5	3		2
	Other Private				
	Combination				10

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Madison	ODOT				123
	Other State Agency				
	County	12	37	13	126
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Mahoning	ODOT				133
	Other State Agency				47
	County	12	27	3	281
	City & Local	13		1	56
	Federal				
	Railroad				
	Other Private				2
	Combination		1		
Marion	ODOT			1	104
	Other State Agency				
	County	161	15		94
	City & Local				3
	Federal				
	Railroad				
	Other Private				
	Combination				
Medina	ODOT				176
	Other State Agency				
	County	6	1	1	127
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				9

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Meigs	ODOT			1	114
	Other State Agency				
	County	66	102	20	3
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Mercer	ODOT		2		118
	Other State Agency				
	County	52	71	25	171
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				1
Miami	ODOT	1	3	1	118
	Other State Agency				
	County	2	4		326
	City & Local				
	Federal				
	Railroad				1
	Other Private				1
	Combination				1
Monroe	ODOT		1	1	91
	Other State Agency				
	County	73	20	6	8
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Montgomery	ODOT			1	167
	Other State Agency				
	County	55	139	50	322
	City & Local	4	6	1	56
	Federal				
	Railroad				
	Other Private				1
	Combination				3
Morgan	ODOT			2	56
	Other State Agency				
	County	41	57	5	149
	City & Local				
	Federal				
	Railroad				
	Other Private				1
	Combination				
Morrow	ODOT		1	1	97
	Other State Agency				
	County	108	3	2	107
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Muskingum	ODOT		5	1	161
	Other State Agency				
	County	30	52	1	377
	City & Local	2			5
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Noble	ODOT		2	2	166
	Other State Agency				
	County	83	24	9	51
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Ottawa	ODOT				52
	Other State Agency				4
	County	7	6		108
	City & Local		2		2
	Federal				
	Railroad				
	Other Private				
	Combination				1
Paulding	ODOT				52
	Other State Agency				
	County	65	25	4	119
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Perry	ODOT		2	10	88
	Other State Agency				
	County	124	38	3	53
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Pickaway	ODOT		4	4	101
	Other State Agency				
	County	40	28	6	117
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Pike	ODOT		1	1	90
	Other State Agency				
	County		2	59	106
	City & Local				
	Federal				
	Railroad				1
	Other Private				
	Combination				
Portage	ODOT	1	2		99
	Other State Agency				23
	County	15	33	9	86
	City & Local				3
	Federal				
	Railroad	7	8		2
	Other Private				
	Combination				
Preble	ODOT		2	7	120
	Other State Agency				
	County	17	8	1	228
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				1

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Putnam	ODOT		1		62
	Other State Agency				
	County	61	17	42	186
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Richland	ODOT	1	3	1	129
	Other State Agency				
	County	17	147	31	215
	City & Local	1	4	1	31
	Federal				
	Railroad				
	Other Private				
	Combination			1	5
Ross	ODOT			2	145
	Other State Agency				
	County	54	73	20	281
	City & Local	2			
	Federal				
	Railroad	3			3
	Other Private				
	Combination				1
Sandusky	ODOT	1		1	86
	Other State Agency				66
	County	11	2		217
	City & Local	2	1		6
	Federal				
	Railroad	1			
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Scioto	ODOT		1	2	147
	Other State Agency				
	County	201	93	40	174
	City & Local		7		2
	Federal				
	Railroad	1			2
	Other Private				
	Combination				
Seneca	ODOT		3		89
	Other State Agency				1
	County	98	7		348
	City & Local				12
	Federal				
	Railroad				
	Other Private				
	Combination				
Shelby	ODOT		1		82
	Other State Agency				
	County	43	23	1	236
	City & Local				15
	Federal				
	Railroad				
	Other Private				
	Combination				2
Stark	ODOT		1		168
	Other State Agency				
	County	46	3		271
	City & Local	2			26
	Federal				
	Railroad	1			3
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Summit	ODOT				176
	Other State Agency				13
	County	5	1	1	244
	City & Local	10			91
	Federal				
	Railroad				
	Other Private				
	Combination				2
Trumbull	ODOT				202
	Other State Agency				28
	County	24	55	20	155
	City & Local				1
	Federal				1
	Railroad	3	1		1
	Other Private				
	Combination				
Tuscarawas	ODOT		3		157
	Other State Agency				
	County	59	3	1	188
	City & Local	1			11
	Federal				1
	Railroad				
	Other Private				
	Combination				1
Union	ODOT				105
	Other State Agency				
	County	46	20		69
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

		PERCENT OF MAXIMUM LEGAL LOAD			
County	Main Agency	< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Van Wert	ODOT				87
	Other State Agency				
	County	110	107	12	110
	City & Local	1	7		2
	Federal				
	Railroad				
	Other Private				
	Combination				
Vinton	ODOT		4	1	96
	Other State Agency				
	County	137	40		66
	City & Local				
	Federal				
	Railroad				
	Other Private				
	Combination				
Warren	ODOT		2		102
	Other State Agency				
	County	77	1		317
	City & Local	1			3
	Federal				
	Railroad				
	Other Private				
	Combination				2
Washington	ODOT		1	2	137
	Other State Agency				
	County	116	54	4	80
	City & Local				5
	Federal				
	Railroad	1			1
	Other Private				1
	Combination				

Table 5: Total Number of Bridges by Percent of Legal Rating and Maintenance Agency for Each County of Ohio, 1981

County	Main Agency	PERCENT OF MAXIMUM LEGAL LOAD			
		< 50%	≥ 50%, ≤ 80%	> 80%, < 100%	≥ 100%
Wayne	ODOT		2	1	143
	Other State Agency				
	County	81	4	1	363
	City & Local	1			2
	Federal				
	Railroad				
	Other Private				
	Combination				6
Williams	ODOT			1	69
	Other State Agency				24
	County		14		128
	City & Local				1
	Federal				
	Railroad				
	Other Private				
	Combination		2		32
Wood	ODOT			2	163
	Other State Agency				39
	County	66	47	17	229
	City & Local	7			
	Federal				
	Railroad				
	Other Private				
	Combination				3
Wyandot	ODOT				102
	Other State Agency				
	County	26	28	5	194
	City & Local	2			5
	Federal				
	Railroad				
	Other Private				
	Combination				

Table

BRIDGE INVENTORY SYSTEM

DATE 05/26/81 — ESTIMATED COUNTY BRIDGE REHABILITATION OR REPLACEMENT COSTS — BI-81 PAGE 0001

STRUCTURES MAINTAINED BY COUNTY OR SHARED WITH OTHER AGENCY

COUNTY	TOTAL BRIDGES ON FILE	OVERALL LENGTH 10-20FT REPLACEMENT NO.	OVERALL LENGTH 10-20FT REPLACEMENT COST(1000S)	OVERALL LENGTH 10-20FT REHABILITATION NO.	OVERALL LENGTH 10-20FT REHABILITATION COST(1000S)	OVERALL LENGTH 21FT & UP REPLACEMENT NO.	OVERALL LENGTH 21FT & UP REPLACEMENT COST(1000S)	OVERALL LENGTH 21FT & UP REHABILITATION NO.	OVERALL LENGTH 21FT & UP REHABILITATION COST(1000S)	TOTAL DEFICIENT BRIDGES NO.	TOTAL DEFICIENT BRIDGES COST(1000S)
ADA	285	5	$200	41	$517	21	$7,598	44	$1,542	111	$9,857
ALL	415	6	$607	27	$417	28	$12,415	58	$5,019	119	$18,458
ASD	179	1	$66	1	$18	65	$10,378	58	$2,515	125	$12,977
ATB	278	9	$713	54	$1,086	48	$23,427	99	$11,101	210	$36,327
ATH	234	0	$0	4	$78	62	$11,385	74	$3,908	140	$15,371
AUG	389	10	$608	90	$1,937	54	$16,759	110	$6,530	274	$25,834
BEL	314	11	$672	70	$1,038	44	$9,052	152	$8,063	277	$18,825
BRO	235	2	$113	14	$226	23	$4,579	122	$5,515	161	$10,433
BUT	392	2	$137	37	$703	37	$10,187	132	$15,694	208	$26,721
CAR	158	0	$0	44	$566	20	$2,444	66	$2,824	130	$5,834
CHP	223	4	$236	23	$377	25	$4,624	42	$2,087	94	$7,324
CLA	82	0	$0	1	$22	30	$10,010	34	$9,496	65	$19,528
CLE	393	31	$1,681	72	$1,331	103	$19,380	79	$5,031	285	$27,423
CLI	306	4	$279	79	$1,142	38	$7,439	85	$4,680	206	$13,540
COL	327	22	$1,277	47	$578	143	$28,149	81	$5,563	293	$35,567
COS	346	32	$1,761	33	$513	108	$27,025	81	$6,839	254	$36,138
CRA	248	20	$1,178	15	$243	45	$8,357	54	$3,546	134	$13,324
CUY	323	19	$462	30	$180	51	$289,032	102	$53,528	202	$343,202
DAR	413	1	$70	33	$621	61	$10,147	105	$4,316	200	$15,154
DEF	301	59	$3,248	97	$1,707	72	$16,308	43	$4,235	271	$25,498
DEL	299	29	$1,518	60	$1,000	61	$20,686	39	$2,905	189	$26,109
ERI	144	2	$196	6	$128	4	$16,225	19	$2,220	31	$18,769
FAI	233	1	$61	15	$207	108	$16,652	100	$4,678	224	$21,598
FAY	218	0	$0	4	$68	22	$7,602	22	$2,146	48	$9,816

STRUCTURES MAINTAINED BY COUNTY OR SHARED WITH OTHER AGENCY

COUNTY	TOTAL BRIDGES ON FILE	OVERALL LENGTH 10-20FT REPLACEMENT NO.	OVERALL LENGTH 10-20FT REPLACEMENT COST(1000S)	OVERALL LENGTH 10-20FT REHABILITATION NO.	OVERALL LENGTH 10-20FT REHABILITATION COST(1000S)	OVERALL LENGTH 21FT & UP REPLACEMENT NO.	OVERALL LENGTH 21FT & UP REPLACEMENT COST(1000S)	OVERALL LENGTH 21FT & UP REHABILITATION NO.	OVERALL LENGTH 21FT & UP REHABILITATION COST(1000S)	TOTAL DEFICIENT BRIDGES NO.	TOTAL DEFICIENT BRIDGES COST(1000S)
FRA	414	3	$316	48	$904	18	$10.941	93	$26.718	162	$38.879
FUL	178	2	$144	3	$54	23	$4.609	19	$976	47	$5.783
GAL	226	4	$220	13	$179	55	$9.029	78	$2.877	150	$12.305
GEA	202	2	$68	29	$511	8	$1.316	53	$2.844	92	$4.739
GRE	345	42	$2.476	52	$720	45	$9.015	53	$3.705	192	$15.916
GUE	391	6	$288	16	$265	37	$4.078	74	$5.225	133	$9.856
HAM	502	7	$563	22	$308	43	$46.142	106	$58.656	178	$105.669
HAN	470	64	$3.712	61	$919	119	$18.645	138	$9.022	382	$32.298
HAR	335	18	$1.100	78	$1.263	32	$8.126	107	$5.150	235	$15.639
HAS	153	8	$532	22	$395	43	$6.481	59	$3.162	132	$10.570
HEN	371	32	$1.971	25	$564	93	$17.160	66	$4.862	216	$24.557
HIG	300	11	$619	40	$581	58	$8.131	56	$2.958	165	$12.289
HOC	292	33	$1.536	25	$383	91	$12.716	88	$3.179	237	$17.814
HOL	325	10	$565	65	$817	27	$4.159	98	$3.737	200	$9.278
HUR	420	14	$890	77	$1.356	51	$9.400	123	$8.469	265	$20.115
JAC	167	0	$0	4	$61	37	$5.588	71	$2.994	112	$8.643
JEF	267	15	$847	51	$743	34	$8.385	93	$6.654	193	$16.629
KNO	278	1	$71	5	$102	129	$26.825	65	$3.486	200	$30.484
LAK	159	3	$193	21	$302	12	$11.961	57	$7.617	93	$20.073
LAW	198	11	$669	4	$48	61	$8.276	94	$3.927	170	$12.920
LIC	326	0	$0	10	$130	40	$7.227	129	$7.831	179	$15.188
LOG	290	20	$1.243	22	$347	98	$17.331	48	$2.836	188	$21.757
LOR	287	1	$54	29	$535	3	$1.083	78	$15.981	111	$17.653
LUC	178	11	$891	23	$500	14	$4.464	40	$16.340	88	$22.195

COUNTY	TOTAL BRIDGES ON FILE	OVERALL LENGTH 10-20FT REPLACEMENT NO.	OVERALL LENGTH 10-20FT REPLACEMENT COST(1000S)	OVERALL LENGTH 10-20FT REHABILITATION NO.	OVERALL LENGTH 10-20FT REHABILITATION COST(1000S)	OVERALL LENGTH 21FT & UP REPLACEMENT NO.	OVERALL LENGTH 21FT & UP REPLACEMENT COST(1000S)	OVERALL LENGTH 21FT & UP REHABILITATION NO.	OVERALL LENGTH 21FT & UP REHABILITATION COST(1000S)	TOTAL DEFICIENT BRIDGES NO.	TOTAL DEFICIENT BRIDGES COST(1000S)
MAD	189	2	$139	20	$420	22	$6.195	55	$3.384	99	$10.138
MAH	324	4	$273	56	$1.256	23	$64.658	69	$15.797	152	$81.984
MAR	270	11	$652	50	$822	65	$14.172	55	$3.060	181	$18.706
MED	135	1	$74	14	$180	8	$1.834	62	$3.228	85	$5.316
MEG	191	3	$160	3	$74	46	$4.844	107	$4.987	159	$10.065
MER	319	0	$0	5	$96	61	$10.105	147	$6.009	213	$16.211
MIA	332	1	$42	32	$597	8	$4.677	106	$11.974	147	$17.290
MOE	107	0	$0	5	$78	15	$3.667	15	$1.053	35	$4.798
MOT	576	21	$1.762	109	$2.101	42	$21.357	135	$35.093	307	$60.313
MRG	252	24	$1.152	43	$551	82	$12.932	57	$2.245	206	$16.880
MRW	220	0	$0	2	$33	108	$15.142	23	$1.268	133	$16.443
MUS	460	28	$1.468	103	$1.460	53	$16.619	111	$8.676	295	$28.223
NOR	167	6	$285	3	$47	81	$9.050	48	$1.410	138	$10.792
OTT	121	2	$151	7	$100	14	$4.170	56	$4.647	79	$9.068
PAU	213	13	$816	26	$394	61	$18.916	18	$1.051	118	$21.177
PER	218	16	$829	10	$152	99	$12.747	42	$2.347	167	$16.075
PIC	191	0	$0	3	$62	42	$10.039	71	$4.608	116	$14.709
PIK	167	0	$0	17	$283	3	$604	48	$2.451	68	$3.338
POR	143	1	$68	10	$185	14	$3.586	54	$4.560	79	$8.399
PRE	254	0	$0	13	$240	20	$5.770	70	$4.397	103	$10.407
PUT	306	6	$388	11	$193	43	$14.046	25	$2.188	85	$16.815
PIC	410	7	$633	103	$1.751	27	$8.087	117	$7.880	254	$18.351
POS	429	21	$1.112	66	$1.023	74	$15.413	109	$7.245	270	$24.793
SAN	230	1	$25	7	$133	19	$4.347	52	$4.434	79	$8.939

STRUCTURES MAINTAINED BY COUNTY OR SHARED WITH OTHER AGENCY

COUNTY	TOTAL BRIDGES ON FILE	OVERALL LENGTH 10-20FT REPLACEMENT NO.	OVERALL LENGTH 10-20FT REPLACEMENT COST(1000S)	OVERALL LENGTH 10-20FT REHABILITATION NO.	OVERALL LENGTH 10-20FT REHABILITATION COST(1000S)	OVERALL LENGTH 21FT & UP REPLACEMENT NO.	OVERALL LENGTH 21FT & UP REPLACEMENT COST(1000S)	OVERALL LENGTH 21FT & UP REHABILITATION NO.	OVERALL LENGTH 21FT & UP REHABILITATION COST(1000S)	TOTAL DEFICIENT BRIDGES NO.	TOTAL DEFICIENT BRIDGES COST(1000S)
SCI	509	144	$7.647	61	$1.020	117	$15.953	103	$10.071	425	$34.691
SEN	453	36	$2.058	61	$994	72	$13.675	73	$3.047	242	$19.774
SHE	303	14	$942	34	$534	59	$19.526	29	$2.654	136	$23.656
STA	323	7	$575	16	$260	36	$15.378	147	$16.077	206	$32.290
SUM	252	0	$0	14	$379	11	$44.355	149	$14.919	174	$59.653
TRU	254	4	$279	17	$346	19	$22.304	105	$12.792	145	$35.721
TUS	252	10	$675	30	$585	49	$23.085	65	$6.595	154	$30.940
UNI	135	5	$370	0	$0	47	$15.223	26	$1.942	78	$17.535
VAN	339	8	$420	28	$477	91	$11.465	103	$4.985	230	$17.347
VIN	243	44	$2.314	19	$339	78	$12.976	44	$2.132	185	$17.761
WAR	395	15	$1.008	59	$1.234	63	$24.479	47	$3.441	184	$30.162
WAS	254	26	$1.466	14	$249	79	$21.356	75	$4.302	194	$27.373
WAY	451	9	$609	72	$1.295	99	$18.426	141	$7.194	321	$27.524
WIL	172	1	$174	2	$30	17	$4.165	36	$2.682	56	$7.051
WOO	359	2	$169	18	$331	30	$5.150	95	$6.082	145	$11.732
YA	253	10	$620	12	$173	40	$10.002	38	$2.571	100	$13.366
STATE	25029	1091	$63.438	2817	$47.208	4391	$1.411.487	6615	$628.702	14914	$2.150.835

NOTE-- BRIDGE REHAB. RATE = $50 PER SQ. FT.
BRIDGE REPLAC. RATE = $100 PER SQ. FT.. PLUS ASSUMED 100% DECK AREA INCREASE.
CULVERT TYPE BRIDGE:
REHAB. = $6.000 PER INSTALLATION.
REPLAC. = $25.000 PER INSTALLATION.
FOR SHARED MAINTENANCE COST - ASSUMED 50% OF TOTAL TO COUNTY