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**Impacts of Changing Federal Infrastructure
Expenditures on the Great Plains**

**F. Larry Leistritz, Randal C. Coon,
Rita R. Hamm, and Stephen Fuller**

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A region's infrastructure is generally regarded as being critical in supporting current economic activity and contributing to the quality of life of its residents and also is widely recognized as an essential prerequisite for future economic development (Leistritz and Hamm 1994).

Historically, federal assistance has been important in making transportation, electrical, and telephone services available to residents of the sparsely populated Great Plains region. Indeed, the settlement and agricultural development of much of the region was contingent on the development of rail transportation, supported by massive federal land grants. More recently, the development of the interstate highway system and improvement of other roads in the federal system have encouraged the decentralization of manufacturing into rural areas, and a variety of federal programs have enabled rural communities to upgrade a broad range of facilities, ranging from water and sewer systems to hospitals, schools, and community housing.

However, in recent years, federal budget pressures have raised questions concerning the future of such infrastructure programs. Further, these budget

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pressures have arisen at the same time that many observers have been raising concerns regarding the adequacy of rural transportation, communications, and other infrastructure to support current economic activity and competitiveness in the global economy and/or to enable future growth and development (Wimberley 1991, Dillman 1991).

The Great Plains states have always faced unique infrastructure problems because of their sparse population. These problems have been exacerbated in recent years by economic restructuring and by population losses in many parts of the region. The Great Plains region as defined for this study consists of 396 counties in 10 states (Figure 1). This region as a whole experienced a population increase of 2.9 percent from 1980 to 1990, compared to 12.9 percent for the 10 states comprising the Great Plains region (Appendix Table 1). However, within six of the ten states, the Great Plains counties lost population during the 1980s. Of the 396 counties that comprise the study area, 323 or 81.6 percent lost population during the 1980s. The pattern of population decline in some parts of the Great Plains and growth rates in other areas that are less than those generally prevailing outside the Great Plains leads to additional concerns regarding the future of infrastructure programs.

The purpose of this paper and the study upon which it is based is to evaluate the effects of changes in federal infrastructure expenditures on the Great Plains. The paper proceeds by describing the magnitude of federal infrastructure expenditures in fiscal year (FY) 1992 by program area. Changes in infrastructure expenditures from FY 1985 to FY 1992 are then examined, and differences among states are discussed. Finally, implications of possible future changes in federal infrastructure expenditures are examined.

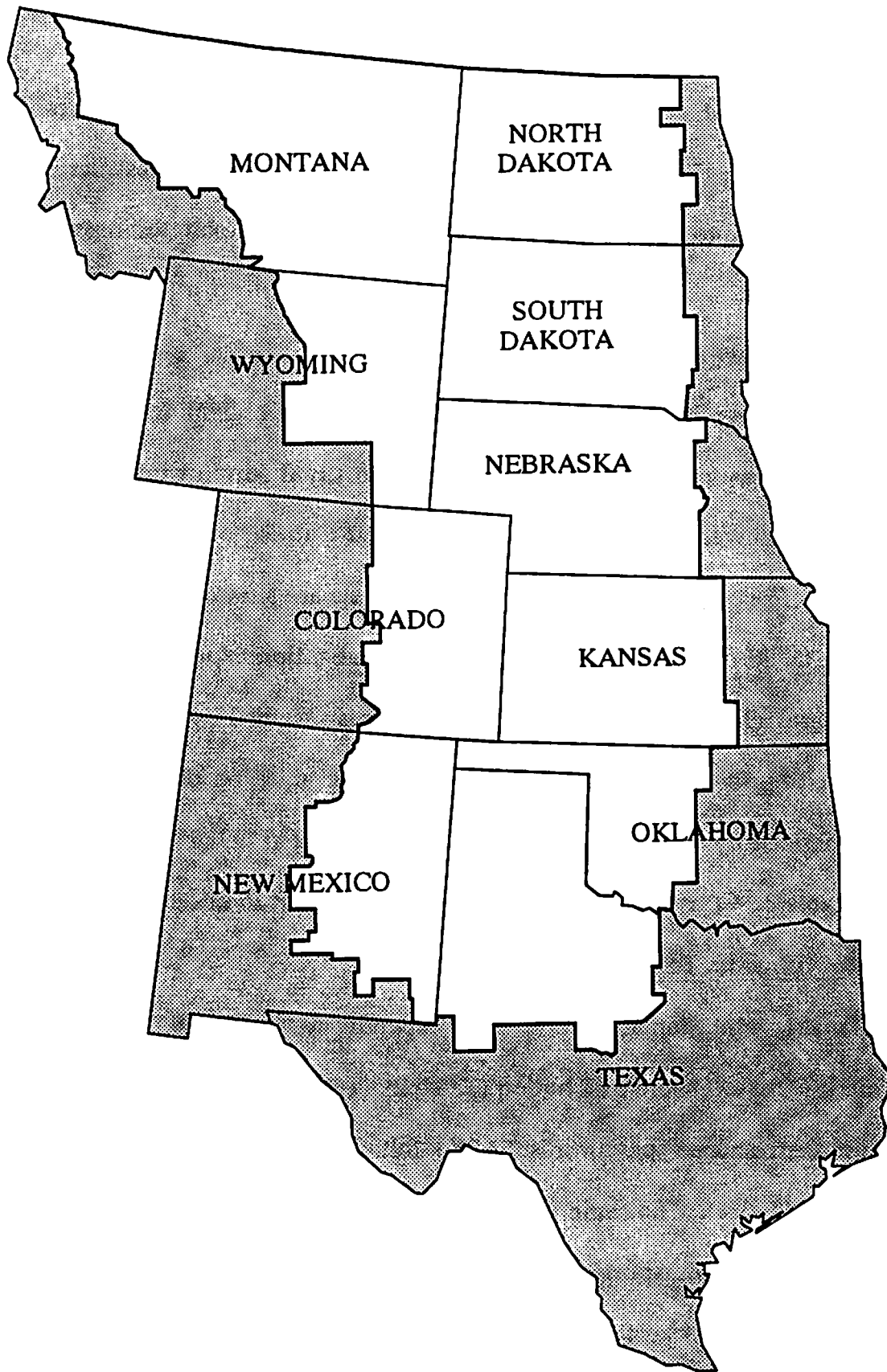


Figure 1. Great Plains Region

Federal Infrastructure Expenditures

The principal sources of information regarding federal infrastructure expenditures were the Consolidated Federal Funds Reports (CFFR) for fiscal years (FY) 1992 and 1985 (Economic Research Service 1993). Federal infrastructure expenditures fall into two general categories: (1) grants and obligation programs and (2) procurements.

Grants and Obligation Programs

The first step in estimating the federal grants and obligation expenditures for infrastructure was to identify the specific programs that support infrastructure. These programs were identified based on the *1992 Catalog of Federal Domestic Assistance*. The programs included in this analysis are summarized in Table 1.

The CFFR data base includes grants and obligation expenditures by county, enabling researchers to determine the expenditures received by Great Plains counties and their cities, schools, and special districts. The grants and obligation expenditures are summarized by state and major program area for FY 1992 in Table 2 and for FY 1985 in Table 3. Corresponding values for the ten Great Plains states as a whole are shown in Appendix Tables 2 and 3.

Total federal grants and obligation expenditures for FY 1992 for the programs identified in Table 1 were \$1.2 billion (Table 2). Transportation programs dominated federal infrastructure expenditures (54.7%), followed by community housing (18.2%) and utilities (10.1%). The same program areas also dominated the FY 1985 expenditures, with transportation accounting for 65.3 percent, community housing for 16.4 percent, and utilities for 10.4 percent (Table 3).

Table 1. Federal Grants and Obligation Program Identification and Corresponding Index Numbers for Infrastructure Programs in the Great Plains States

Program Name	Program Index Number*						
Education/ schools/ libraries	10.205,	10.211,	10.218,	12.001,	15.130,	23.012,	66.702,
	81.022,	81.049,	84.001,	84.002,	84.011,	84.027,	84.031,
	84.034,	84.035,	84.039,	84.040,	84.091,	84.142,	84.154,
	84.167,	84.173,	84.197,	84.216,	84.253		
Transportation/ roads	10.665,	10.666,	20.106,	20.107,	20.205,	20.308,	20.500,
	20.507,	20.509,	23.003,	23.008			
Water/ waste disposal	10.068,	10.070,	10.203,	10.206,	10.418,	10.419,	10.440,
	12.102,	12.104,	12.105,	12.106,	12.107,	12.108,	12.109,
	12.111,	62.004,	62.005,	66.418,	66.419,	66.426,	66.429,
	66.432,	66.433,	66.458				
Medical/ hospitals	(13.224),	(13.229),	(13.246),	(13.392),	(13.985),	23.004,	
	64.005,	64.008,	64.009,	64.010,	64.111,	64.014,	64.015,
	64.016,	64.022,	64.118,	93.151,	93.155,	93.193,	93.224,
	93.246,	93.392,	93.913,	93.950,	93.984		
Utilities	10.850,	10.851,	10.852,	10.855,	11.550		
Justice/ prisons	16.540,	16.541,	16.542,	16.543,	16.544,	16.574,	16.577,
	16.579,	16.580,	16.581,	16.583,	16.584		
Community housing/ facilities	10.405,	10.410,	10.411,	10.413,	10.415,	10.417,	
	10.420,	10.423,	10.429,	10.433,	11.300,	11.301,	11.304,
	12.400,	12.500,	14.142,	14.151,	14.157,	14.174,	14.182,
	14.218,	14.219,	14.223,	14.236,	14.850,	14.852,	15.141,
	15.223,	15.916,	15.919,	23.005,	64.106		
Miscellaneous community infrastructure	10.422,	10.424,	10.439,	(13.667),	15.124,		
	23.001,	23.002,	59.013,	59.021,	59.038,	59.041,	
	59.042,	93.550,	93.667				

*Program index numbers in parentheses were 1985 programs that were renumbered by 1992.

Sources: Bureau of the Census. *Agency Program Index - Federal Expenditures by State for Fiscal Year 1992*. U.S. Department of Commerce. Washington, D.C.: U.S. Government Printing Office.

Office of Management Budget and U.S. General Services Administration. *1992 Catalog of Federal Domestic Assistance*. Library of Congress No. 73-600118. Washington, D.C.: U.S. Government Printing Office.

Table 2. Federal Grants and Obligation Expenditures for Infrastructure Programs in Great Plains Counties, by State, 1992

Area	Education	Transportation	Water Projects	Medical	Utilities	Justice	Community Housing	Misc.
	-----\$000-----							
Colorado	15,247	65,659	12,761	6,451	16,814	—	32,395	27,360
Kansas	1,278	74,606	2,610	2,923	12,668	—	17,855	15,114
Montana	1,010	69,554	392	867	7,433	143	17,610	2,543
Nebraska	4,066	59,708	3,439	6,598	6,412	—	15,307	428
New Mexico	7,556	51,154	9,676	3,146	3,458	3,626	19,595	218
North Dakota	4,701	65,814	13,889	—	11,092	2,282	24,333	4,638
Oklahoma	4,650	62,228	1,668	2,900	32,699	—	24,049	531
South Dakota	4,394	83,881	11,065	2,347	14,739	2,312	34,585	2,246
Texas	2,729	80,599	4,196	2,600	12,757	52	21,858	2,422
Wyoming	2,396	61,607	708	1,145	6,623	2,035	16,346	5,868
Total	48,027	674,810	60,404	28,977	124,695	10,450	223,933	61,368

Source: Economic Research Service. *Geographic Distribution of Federal Funds - Fiscal Year 1992*. Documentation of Computer Tape Prepared by Elliott Dubin. Washington, D.C.: Government and Development Policy Section, Rural Business and Government Branch.

Table 3. Federal Grants and Obligation Expenditures for Infrastructure Programs in Great Plains Counties, by State, 1985

Area	Education	Transportation	Water Projects	Medical	Utilities	Justice	Community Housing	Misc.
-----\$000-----								
Colorado	--	79,539	12,370	4,654	451	83	26,960	90
Kansas	224	65,700	464	504	13,497	--	21,734	176
Montana	171	57,260	6,825	471	34,504	--	7,172	40
Nebraska	--	55,400	4,006	16,935	--	--	9,310	--
New Mexico	--	53,038	3,519	2,844	3,225	--	14,139	123
North Dakota	154	83,867	9,109	53	27,995	--	16,084	345
Oklahoma	534	49,517	5,295	897	5,507	--	23,087	--
South Dakota	490	66,244	5,513	1,317	7,854	--	14,986	617
Texas	368	173,312	1,440	2,764	20,951	--	48,117	437
Wyoming	--	58,087	7,638	199	3,838	--	4,601	66
Total	1,941	741,964	56,179	30,638	117,822	83	186,190	1,894

Source: Economic Research Service. *Geographic Distribution of Federal Funds - Fiscal Year 1985*. Documentation of Computer Tape Prepared by Elliott Dubin. Washington, D.C.: Government and Development Policy Section, Rural Business and Government Branch.

In the transportation program area, Highway Planning and Construction (index no. 20.205) accounted for the greatest expenditure, followed by the Airport Improvement Program (20.106). The importance of the highway planning and construction program is consistent with the region's substantial mileage of interstate and federal system highways and with historical patterns of higher than average per capita expenditures from the Highway Trust Fund to these states.

In the community housing and facilities program area, Public and Indian Housing (14.850) accounted for the greatest expenditures, followed by Very Low to Moderate Income Housing Loans (10.410). Within the utilities program area, Rural Electrification Loans and Loan Guarantees (10.850), Public Telecommunications Facilities -- construction and planning (11.550), and Rural Telephone Loans and Loan Guarantees (10.851) accounted for the largest infrastructure expenditures.

The federal grants and obligation expenditures received by Great Plains counties and their cities, schools, and special districts for 1985 and 1992 are summarized in Appendix Table 4. Comparable values are presented for counties that experienced population growth from 1980 to 1990 (Appendix Table 5) and for those that had population decreases during the same period (Appendix Table 6), for counties classified as agriculturally dependent (Appendix Table 7) and for counties where other sources of economic activity predominated (Appendix Table 8), for the region's metropolitan counties (Appendix Table 9) and for nonmetropolitan counties (Appendix Table 10). Regionwide, these expenditures increased 8.4 percent from 1985 to 1992. Per capita expenditures increased from about \$164 in 1985 to \$181 in 1992, a growth of about 10 percent. Counties that had population growth from 1980

to 1990 recorded above-average growth in both total expenditures (30.3 percent) and per capita expenditures (18.8 percent), while counties with population decreases recorded a decline in total expenditures (-3.3 percent).

Substantial contrasts can be noted between agricultural counties and counties that rely primarily on other sources of economic activity. Agricultural counties had a decrease in total expenditures from 1985 to 1992 of 17.8 percent and a decrease in per capita expenditures of 4.1 percent over the same period. The other counties recorded increases of about 19 percent in total expenditures and 18 percent in per capita spending. However, it also should be noted that the agricultural counties had a level of per capita expenditures in 1992 (\$276) that was much higher than that of the other counties (\$165).

Similar contrasts can be noted between metropolitan and nonmetropolitan counties, with the former showing higher rates of growth in both total and per capita expenditures, but much lower absolute levels of per capita expenditures than nonmetropolitan counties.

A second category of federal grants and obligation expenditures are those that are distributed by the states. That is, the federal government transfers the funds to a designated state agency which then redistributes them to local units of government. In FY 1992, the ten Great Plains states received about \$852 million in such funds from federal infrastructure programs (Table 4). The corresponding figure for FY 1985 was \$1.1 billion (Table 5). Because the CFFR database only reports the total distributed to the state by each program, it was necessary to estimate the proportion of each state's payment that was ultimately redistributed to the Great Plains counties. After

Table 4. Federal Grants and Obligation Expenditures for Infrastructure Programs Distributed by States, Great Plains States, 1992

Area	Education	Transportation	Water Projects	Medical	Utilities	Justice	Community Housing	Misc.
-----\$000-----								
Colorado	—	4,724	—	—	—	—	29,490	—
Kansas	18,266	3,702	—	—	—	—	23,668	—
Montana	6,976	307	38	—	—	—	6,737	9,542
Nebraska	—	283	—	—	—	—	18,261	10,013
New Mexico	14,848	9,711	603	—	—	—	14,206	18,023
North Dakota	4,889	3,278	—	—	—	—	5,555	7,841
Oklahoma	—	6,321	—	—	—	—	—	38,243
South Dakota	5,994	3,692	—	—	—	—	9,050	8,461
Texas	143,274	25,772	—	—	—	—	184,977	200,675
Wyoming	4,709	6,456	—	—	—	—	3,059	—
Total	198,956	64,246	641	—	—	—	295,003	292,798

Source: Economic Research Service. *Consolidated Federal Funds Report - Fiscal Year 1992*. Tape Technical Description Prepared by Elliott Dubin. Washington, D.C.: Government and Development Policy Section, Rural Business and Government Branch.

Table 5. Federal Grants and Obligation Expenditures for Infrastructure Programs Distributed by States, Great Plains States, 1985

Area	Education	Transportation	Water Projects	Medical	Utilities	Justice	Community Housing	Misc.
	-----\$000-----							
Colorado	19,270	3,090	1,255	--	--	543	22,145	35,639
Kansas	17,053	--	7,308	--	--	410	25,095	29,416
Montana	5,565	8,312	1,176	--	--	201	18,463	9,375
Nebraska	11,208	795	1,098	--	--	287	18,804	18,563
New Mexico	11,218	2,368	1,077	--	--	280	34,817	15,906
North Dakota	4,511	--	2,304	--	--	--	14,956	7,842
Oklahoma	22,544	2,631	5,292	--	--	597	73,395	37,183
South Dakota	4,498	1,378	5,391	--	--	--	26,577	8,087
Texas	159,204	20,754	9,238	--	--	2,527	161,035	178,904
Wyoming	3,509	1,369	1,148	--	--	--	4,119	6,907
Total	258,580	40,697	35,287	--	--	4,845	399,406	347,822

Source: Economic Research Service. *Consolidated Federal Funds Report - Fiscal Year 1985*. Tape Technical Description Prepared by Elliott Dubin. Washington, D.C.: Government and Development Policy Section, Rural Business and Government Branch.

consultation with several state and federal officials, a per capita allocation system was selected. That is, the Great Plains counties were assumed to receive a share of these funds equivalent to their share of the state population. For example, in 1992 the Great Plains counties in Colorado accounted for 44.2 percent of the state's total population (Table 6), so they were estimated to receive 44.2 percent of the federal infrastructure funds distributed by the state.

When the total federal grants and obligation expenditures for infrastructure in the Great Plains region for FY 1992 are compared to those for FY 1985 (Table 7), the values are almost identical. A substantial gain in education programs and smaller increases in miscellaneous programs, justice, and utilities were offset by a decrease in transportation. However, transportation remained by far the largest program area, accounting for about 50 percent of total expenditures in FY 1992 (Figure 2), followed by community housing (20%) and utilities (9%). Comparable data for the Great Plains counties in each of the 10 states are shown in Appendix Tables 11-20.

Procurement Expenditures

A final component of federal infrastructure expenditures is procurement contracts. Federal procurement contracts in the ten Great Plains states totaled \$23 billion in FY 1992, up from \$21.2 billion in FY 1985 (Table 8). About \$8.9 billion of the FY 1992 federal procurement expenditures, or 38.7 percent, were nonmilitary. However, federal procurement contracts cover a wide variety of goods and services, and published data sources did not indicate what portion of the FY 1992 procurements could appropriately be classified as infrastructure expenditures.

Table 6. Distribution of Population to Great Plains and Non-Great Plains Counties, 1985 and 1992

State	1985		1992	
	Great Plains Co.	Non-Great Plains Co.	Great Plains Co.	Non-Great Plains Co.
	----- percent -----			
Colorado	44.1	55.9	44.2	55.8
Kansas	40.7	59.3	39.6	60.4
Montana	48.8	51.2	46.4	53.6
Nebraska	30.6	69.4	28.7	71.3
New Mexico	24.8	75.2	23.6	76.4
North Dakota	65.3	34.7	62.4	37.6
Oklahoma	18.6	81.4	17.5	82.5
South Dakota	54.9	45.1	54.2	45.8
Texas	9.6	90.4	8.4	91.6
Wyoming	53.1	46.9	52.7	47.3

Sources: Bureau of the Census. 1985 Population Estimates. Federal and State Cooperating Project for Population Estimates. Unpublished data.

Bureau of the Census. 1992 Population Estimates. Federal and State Cooperating Project for Population Estimates. Unpublished data.

Table 7. Federal Grants and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Great Plains Region, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
----- \$000 -----						
Education	1,941	51,192	53,133	48,027	35,186	83,213
Transportation	742,034	10,221	752,255	675,170	17,331	692,501
Water Projects	56,179	11,658	67,837	60,404	160	60,564
Medical	30,638	—	30,638	28,977	—	28,977
Utilities	117,822	—	117,822	124,695	—	124,695
Justice	83	1,017	1,100	10,450	—	10,450
Community Housing	186,190	99,128	285,318	223,663	59,933	283,866
Misc.	1,894	79,298	81,192	61,368	44,601	105,969
Total	1,136,781	252,514	1,389,295	1,232,754	157,211	1,390,235

Table 8. Federal Government Procurement Contracts in Great Plains States, 1985 and 1992

State	1985			1992		
	Nonmilitary	Military	Total	Nonmilitary	Military	Total
----- \$000 -----						
Colorado	725,829	1,590,007	2,315,836	777,450	2,468,116	3,245,566
Kansas	153,630	2,138,425	2,292,055	286,798	857,007	1,143,805
Montana	99,954	101,983	201,937	173,993	56,399	230,392
Nebraska	151,582	193,188	344,770	289,743	296,711	586,454
New Mexico	2,068,014	490,390	2,558,404	3,083,058	725,649	3,808,707
North Dakota	31,061	220,004	251,065	72,090	146,874	218,964
Oklahoma	182,766	596,817	779,583	423,785	753,901	1,177,686
South Dakota	69,903	77,519	147,422	156,837	79,442	236,279
Texas	1,580,134	10,566,000	12,146,134	3,522,136	8,660,572	12,182,708
Wyoming	80,140	124,586	204,726	110,915	61,823	172,738
Total	5,143,013	16,098,919	21,241,932	8,896,805	14,106,494	23,003,299

Source: U.S. Department of Commerce. *Federal Expenditures by State for Fiscal Year 1985*. Economic and Statistics Administration, Bureau of the Census. Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Commerce. *Federal Expenditures by State for Fiscal Year 1992*. Economics and Statistics Administration, Bureau of the Census. Washington, D.C.: U.S. Government Printing Office.

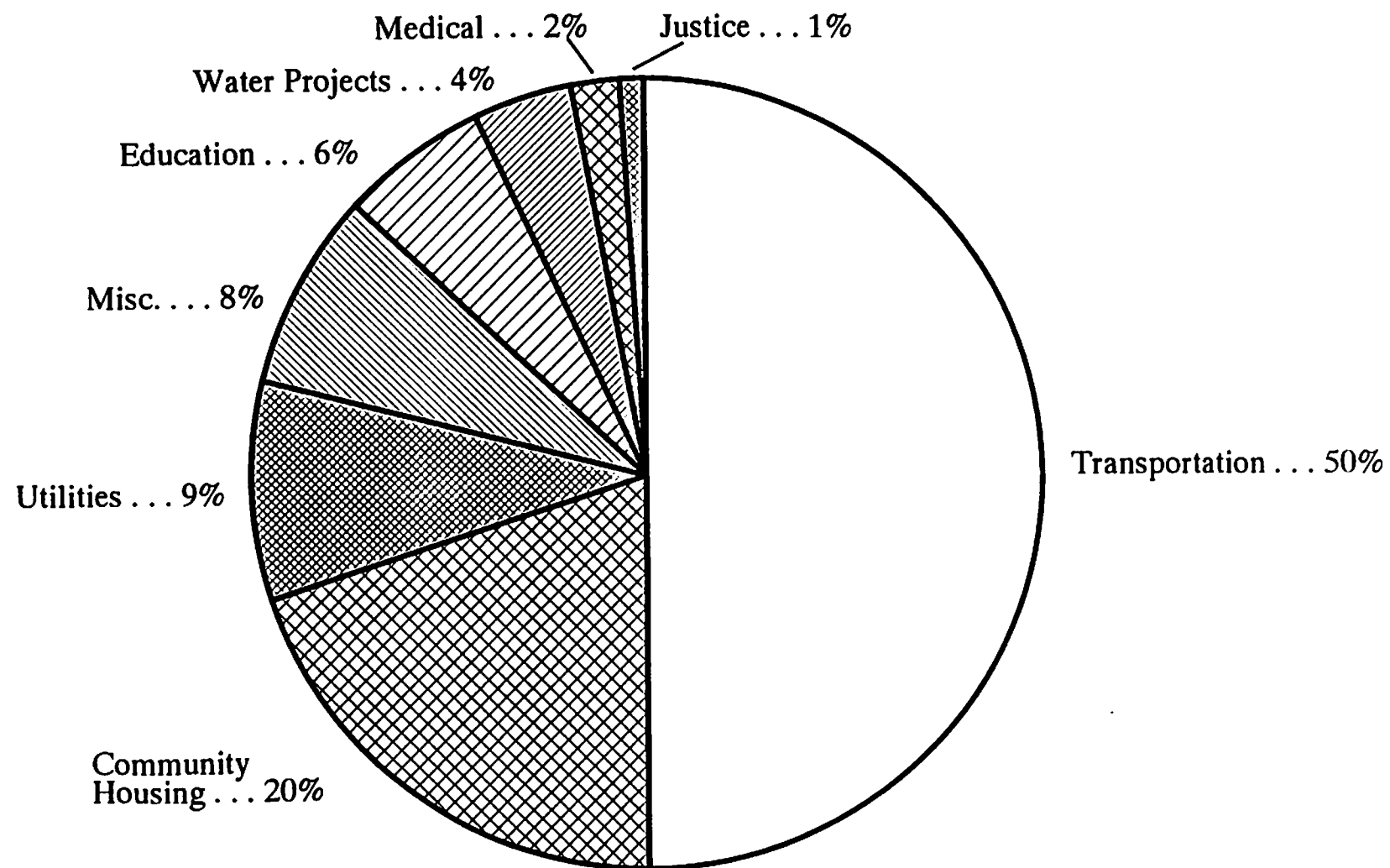


Figure 2. Federal Grants and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Great Plains Region, 1992

Fortunately, the General Services Administration (GSA) made available a special printout of FY 1992 procurement expenditures for infrastructure in each county of the ten Great Plains states. This allowed the researchers to determine the value of federal nonmilitary infrastructure procurements in each of the Great Plains states (Table 9) and the percentage of the infrastructure expenditures that occurred in the Great Plains counties (Table 10).

Estimates of the proportion of federal procurement expenditures that were for infrastructure and the percentage of those expenditures that occurred in the Great Plains counties were not available for the years other than FY 1992. To estimate infrastructure procurement expenditures for FY 1985, the FY 1992 percentages were applied to the total of nonmilitary procurement expenditures in each state to obtain an estimate of the infrastructure expenditures. Then, the FY 1992 percentages were applied to estimate the infrastructure procurements that would occur in the Great Plains counties of each state. The results were estimates of nonmilitary infrastructure procurements for the Great Plains counties of each state for FY 1992 and FY 1985 (Table 11). FY 1992 nonmilitary infrastructure procurements were estimated to total \$189.9 million for the Great Plains study area, up from \$104.3 million in FY 1985.

Total Federal Infrastructure Expenditures

When federal grants and obligations and nonmilitary procurement contracts for infrastructure were combined, an estimate of total federal expenditures to support infrastructure in the Great Plains study area was obtained (Table 12). Federal infrastructure expenditures in the study area were estimated to be \$1.6 billion for FY 1992, compared to \$1.5 billion in FY 1985.

Table 9. Percentage of Federal Nonmilitary Procurement Contracts for Infrastructure Programs, Great Plains States, 1992

State	1992 Federal Procurement Contracts		Percent Infrastructure
	Nonmilitary	Infrastructure	
	----- \$000 -----		-- percent --
Colorado	777,450	105,880	13.6
Kansas	286,798	20,517	7.2
Montana	173,993	52,044	29.9
Nebraska	289,743	43,915	15.2
New Mexico	3,083,058	267,623	8.7
North Dakota	72,090	21,052	29.2
Oklahoma	423,785	32,619	7.7
South Dakota	156,837	31,207	19.9
Texas	3,522,136	222,975	6.3
Wyoming	110,915	52,944	47.7
Total	8,896,805	850,776	--

Source: U.S. Department of Commerce. *Federal Expenditures by State for Fiscal Year 1992*. Economics and Statistics Administration, Bureau of the Census. Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Commerce. "Federal Procurement Infrastructure Contract Awards - Fiscal Year 1992." Federal Procurement Data Center. Unpublished Data.

Table 10. Distribution of Federal Nonmilitary Infrastructure Procurement Funds to Great Plains and Non-Great Plains Counties, 1992

State	1992 Procurements		Total
	Great Plains Counties	Non-Great Plains Counties	
	----- percent -----		
Colorado	2.8	97.2	100.0
Kansas	25.9	74.1	100.0
Montana	44.4	55.6	100.0
Nebraska	91.7	8.3	100.0
New Mexico	0.9	99.1	100.0
North Dakota	78.3	21.7	100.0
Oklahoma	60.6	39.4	100.0
South Dakota	96.6	3.4	100.0
Texas	1.8	98.2	100.0
Wyoming	44.9	55.1	100.0

Source: U.S. Department of Commerce. "Federal Procurement Infrastructure Contract Awards - Fiscal Year 1992." Federal Procurement Data Center. Unpublished data.

Table 11. Estimated Federal Government Procurement Contracts for Nonmilitary Infrastructure Programs, Great Plains and Non-Great Plains Counties, 1985 and 1992

State	1985 Infrastructure Procurements			1992 Infrastructure Procurements		
	Great Plains	Non-Great Plains	Total	Great Plains	Non-Great Plains	Total
	-----\$000-----					
Colorado	2,764	95,948	98,712	2,965	102,915	105,880
Kansas	2,865	8,196	11,061	5,314	15,203	20,517
Montana	13,269	16,617	29,886	23,108	28,936	52,044
Nebraska	21,128	1,912	23,040	40,270	3,645	43,915
New Mexico	16,193	163,724	179,917	24,086	243,537	267,623
North Dakota	7,102	1,968	9,070	16,484	4,568	21,052
Oklahoma	8,528	5,545	14,073	19,767	12,852	32,619
South Dakota	13,438	473	13,911	30,146	1,061	31,207
Texas	1,792	97,756	99,548	4,014	218,961	222,975
Wyoming	17,200	21,107	38,307	23,772	29,172	52,944
Total	104,279	413,246	517,525	189,926	660,850	850,776

Table 12. Federal Government Grants and Obligations and Procurement Contracts for Infrastructure Programs for Great Plains Counties, by State, 1985 and 1992

State	1985			1992		
	Grants	Procurement	Total	Grants	Procurement	Total
	-----\$000-----					
Colorado	155,875	2,764	158,639	191,810	2,965	194,775
Kansas	134,597	2,865	137,462	145,126	5,314	150,440
Montana	127,456	13,269	140,725	110,502	23,108	133,610
Nebraska	101,201	21,128	122,329	104,154	40,270	144,424
New Mexico	93,204	16,193	109,397	112,333	24,086	136,419
North Dakota	156,934	7,102	164,036	140,204	16,484	156,688
Oklahoma	111,218	8,528	119,746	136,524	19,767	156,291
South Dakota	122,243	13,438	135,681	170,310	30,146	200,456
Texas	298,670	1,792	300,462	173,808	4,014	177,822
Wyoming	83,487	17,200	100,687	105,419	23,772	129,191
Total	1,384,885	104,279	1,489,164	1,390,190	189,926	1,580,116

To adjust the total infrastructure expenditures to reflect changes in population, the total infrastructure expenditures from Table 12 were divided by the estimated population of the Great Plains counties in each state to derive estimates of infrastructure expenditures per capita (Table 13). The FY 1992 federal infrastructure expenditures averaged about \$232 per capita for the Great Plains study area. The per capita expenditures varied substantially among states, ranging from \$120 per capita in the Texas portion of the study area to \$523 in the South Dakota segment. The FY 1992 per capita expenditure for the region represents an increase of 7.7 percent, compared to FY 1985, and all but two of the states registered gains in per capita expenditures in their Great Plains counties.

To adjust for the effects of inflation, the FY 1985 per capita expenditures were adjusted to 1992 dollar values using the Gross Domestic Product (GDP) Implicit Price Deflators (Appendix Table 21). Per capita expenditures for FY 1985 and FY 1992, expressed in 1992 constant dollars, are shown in Table 14. When the effects of inflation are taken into account, the Great Plains study area registered a decrease in per capita federal infrastructure expenditures of 15.5 percent from FY 1985 to FY 1992. Seven of the 10 states had decreases in per capita infrastructure expenditures in their Great Plains counties.

The CFFR data base enabled us to compare federal grant and obligation expenditures for infrastructure in the Great Plains region to those for the U.S. as a whole. Federal grant and obligation expenditures for infrastructure for FY 1992 averaged \$190.50 per capita, nationwide (Table 15), compared to \$204.08 per capita for the Great Plains region (Table 13). From FY 1985 to FY 1992, per capita grant and obligation expenditures for infrastructure increased by \$72.90, or 62 percent, nationwide, compared to an increase of only 2 percent in the Great Plains region.

Table 13. Per Capita Federal Government Grants and Obligations and Procurement Contracts for Infrastructure Programs for Great Plains Counties, by State, 1985 and 1992

State	1985			1992		
	Grants	Procurement	Total	Grants	Procurement	Total
	<i>dollars</i>					
Colorado	110.16	1.95	112.11	125.34	1.94	127.28
Kansas	136.11	2.90	139.01	145.63	5.33	150.97
Montana	317.86	33.09	350.95	289.89	60.62	350.52
Nebraska	208.45	43.52	251.97	226.38	87.53	313.91
New Mexico	260.78	45.31	306.09	301.30	64.60	365.90
North Dakota	355.19	16.07	371.26	354.39	41.67	396.05
Oklahoma	182.54	14.00	196.53	243.21	35.21	278.43
South Dakota	318.75	35.04	353.79	443.92	78.58	522.50
Texas	190.55	1.14	191.69	117.02	2.70	119.72
Wyoming	314.57	64.81	379.38	430.09	96.99	527.07
Total	200.27	15.08	215.34	204.08	27.88	231.96

Table 14. Per Capita Federal Government Expenditures for Infrastructure Programs for Great Plains Counties, by State, 1985 and 1992, in 1992 Constant Dollars

State	1985	1992	Percent Change
	<i>----- 1992 Dollars -----</i>		<i>- percent -</i>
Colorado	142.94	127.28	-10.96
Kansas	177.23	150.97	-14.82
Montana	447.46	350.52	-21.66
Nebraska	321.26	313.91	-2.29
New Mexico	390.26	365.90	-6.24
North Dakota	473.36	396.05	-16.33
Oklahoma	250.58	278.43	+11.11
South Dakota	451.08	522.50	+15.83
Texas	244.40	119.72	-51.01
Wyoming	483.71	527.07	+8.96
Total	274.56	231.96	-15.52

**Table 15. Per Capita Federal Grants and Obligations
Expenditures for Infrastructure Programs, Total for
United States, by Program, 1985 and 1992**

Program	1985	1992
	----- dollars -----	
Education	1.15	16.13
Transportation	72.23	90.89
Water Projects	8.94	12.51
Medical	2.33	3.47
Utilities	4.36	4.80
Justice	.08	2.23
Community		
Housing	28.29	46.19
Misc.	.22	14.29
Total	117.60	190.50

Source: Economic Research Service. *Geographic Distribution of Federal Funds - Fiscal Year 1985 and Fiscal Year 1992*. Documentation of Computer Tapes Prepared by Elliott Dubin. Washington, D.C.: Government and Development Policy Section, Rural Business and Government Branch.

Conclusions and Implications

The purpose of this study was to evaluate the effects of changes in federal infrastructure expenditures on the Great Plains region. Examination of the data for FY 1985 and FY 1992 indicated that per capita federal expenditures for infrastructure were higher in the Great Plains region than nationwide for both years. However, when the change in per capita expenditures in the Great Plains region from FY 1985 to FY 1992 was examined, it was clear that infrastructure expenditures in this region (a) were not keeping pace with the national growth in such outlays and (b) were not keeping pace with inflation. These observed trends have several implications for

residents of the Great Plains region and for decision makers concerned about the future of the region.

An obvious implication is that a continued trend of decreasing per capita real federal expenditures for infrastructure in the region could have both short-run and longer-run effects. The short-run effects would include both direct and secondary impacts on jobs, income, and the overall level of economic activity in the region. For example, if the decrease in real (deflated) infrastructure expenditures that was experienced from FY 1985 to FY 1992 (roughly 2.2 percent per year) were extrapolated to the year 2000, the region would suffer a loss of about \$280 million annually, compared to the FY 1992 level of \$1.58 billion. A reduction in infrastructure expenditures of this magnitude would clearly have a negative short-run economic impact on the region.

The longer term implications of a potential reduction in federal infrastructure expenditures are not as obvious. The major concern appears to be the possible effect of reduced infrastructure expenditures on the future quality/adequacy of the region's infrastructure and, hence, on the region's economic development potential. A number of analysts have addressed the relationship between infrastructure and economic development (Economic Research Service 1990, Steinnes 1990, Eberts 1991). While the linkage between infrastructure and economic development is indirect, and additional infrastructure investments will not automatically ensure favorable development outcomes, communities that lack adequate transportation, housing, utilities, etc. are often eliminated from consideration by firms seeking sites (Barkley

1993, Leistritz 1991). Thus, the long-term implications of decisions regarding infrastructure cannot be ignored.

One set of estimates regarding the longer term effects of infrastructure investments is provided by Crane and Leatham (1993). They found that in Texas a 1 percent increase in transportation (highway maintenance and construction) expenditures increases income 1.944 percent for the farm sector in urban counties, 1.938 percent for the farm sector in rural counties, 1.120 percent for the nonfarm sector in urban counties, and 0.860 percent for the nonfarm sector in rural counties. In addition, their analysis shows that a \$1 million expenditure for highway construction and maintenance in Texas generates 20 new jobs in the farm sector of rural counties over a five-year period and also generates 59 new jobs in the nonfarm rural sector over a nine-year period. In urban counties, a \$1 million expenditure generates 91 jobs in the farm sector over five years and 477 jobs in the nonfarm sector over nine years. Similar results have been reported for Minnesota by Stephanedes (1989).

These short- and longer term effects must be considered when policies for infrastructure investment are formulated. In addition, such policies and plans must take into account the fact that the Great Plains region is far from homogeneous. While the majority of its counties have been experiencing outmigration, population decline, and a substantial aging of their population (Albrecht 1993), the region also contains a number of growing counties. The differing needs of growing and declining counties must be taken into account when policies and plans are formulated.

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Appendix

Appendix Table 1. Population Change in the Great Plains Study Region, 1980 to 1990

State	No. of Great Plains Counties	Great Plains Counties' Population			No. of Counties With	
		1980	1990	% Change 1980-90	Pop. Gain	Pop. Loss
Colorado	22	1,251,264	1,454,833	16.27	8	14
Kansas	62	961,757	986,516	2.57	14	48
Montana	35	387,107	376,245	-2.81	5	30
Nebraska	60	492,530	459,702	-6.67	2	58
New Mexico	15	322,782	359,229	11.29	9	6
North Dakota	44	428,453	402,375	-6.09	4	40
Oklahoma	28	566,814	555,497	-2.00	3	25
South Dakota	45	382,742	378,717	-1.05	9	36
Texas	74	1,465,805	1,482,366	1.13	16	58
Wyoming	11	250,042	239,402	-4.26	3	8
Total	396	6,509,296	6,694,882	2.85	73	323

Appendix Table 2. Federal Grant and Obligation Expenditures for Infrastructure Programs, Total for All Counties in the Great Plains States, by State, 1992

Area	Education	Transportation	Water Projects	Medical	Utilities	Justice	Community Housing	Misc.
	-----\$000-----							
Colorado	51,078	335,393	42,804	24,349	36,701	7,763	90,715	63,435
Kansas	22,376	216,545	56,128	3,262	16,032	4,996	58,247	38,481
Montana	3,772	307	15,801	3,064	10,685	3,082	27,709	148,161
Nebraska	21,587	175,643	31,582	12,802	10,642	4,983	48,946	4,912
New Mexico	12,262	201,490	16,684	11,988	10,898	3,746	65,242	30,041
North Dakota	4,830	119,926	18,274	1,465	11,222	2,282	28,751	12,442
Oklahoma	57,924	274,139	33,642	24,127	39,612	6,489	113,018	5,011
South Dakota	4,435	135,299	20,006	3,181	24,829	2,637	54,113	4,953
Texas	131,638	1,323,318	150,663	41,764	125,636	31,462	393,918	26,990
Wyoming	2,960	125,721	5,545	1,329	9,085	2,035	25,221	8,723
Total	312,862	2,907,781	391,129	127,331	295,342	69,475	905,880	343,149

Appendix Table 3. Federal Grant and Obligation Expenditures for Infrastructure Programs, Total for All Counties in the Great Plains States, by State, 1985

Area	Education	Transportation	Water Projects	Medical	Utilities	Justice	Community Housing	Misc.
----- \$000 -----								
Colorado	3,139	283,538	24,078	15,220	2,396	364	63,652	90
Kansas	2,350	196,604	23,870	863	29,408	--	54,708	1,510
Montana	286	142,590	11,667	1,278	38,837	--	14,747	184
Nebraska	1,388	132	7,684	17,470	338	--	33,765	5
New Mexico	860	145	12,467	7,681	4,009	--	66,321	258
North Dakota	154	99,805	12,176	453	32,094	--	22,636	592
Oklahoma	2,015	222,745	19,575	7,565	19,276	--	96,628	--
South Dakota	537	92,233	11,550	1,888	17,080	--	24,700	974
Texas	8,069	1,242,925	98,787	29,149	128,897	405	480,199	850
Wyoming	8	109,707	9,215	257	3,838	--	8,955	1,098
Total	18,806	2,390,474	231,069	81,824	276,173	769	866,311	5,561

Appendix Table 4. Federal Grants and Obligation Expenditures for Infrastructure Programs to All Counties, Great Plains Region, 1985 and 1992

Program	Total Expenditures			Per Capita Expenditures		
	1985	1992	% Change 1985-1992	1985	1992	% Change 1985-1992
	----- \$000 -----		-- % --	----- \$000 -----		-- % --
Education	1,941	48,027	2374.34	0.28	7.05	2411.76
Transportation	742,034	675,170	-9.01	107.31	99.11	-7.64
Water Projects	56,179	60,404	7.52	8.12	8.87	9.15
Medical	30,638	28,977	-5.42	4.43	4.25	-3.99
Utilities	117,822	124,695	5.83	17.04	18.31	7.43
Justice	83	10,450	12490.36	0.01	1.53	12680.73
Community						
Housing	186,190	223,663	20.13	26.93	32.83	21.94
Misc.	1,894	61,368	3140.13	0.27	9.01	3189.12
Total	1,136,781	1,232,754	8.44	164.39	180.97	10.08

Appendix Table 5. Federal Grants and Obligation Expenditures for Infrastructure Programs to Population Growth Counties, Great Plains Region, 1985 and 1992

Program	Total Expenditures			Per Capita Expenditures		
	1985	1992	% Change 1985-1992	1985	1992	% Change 1985-1992
	----- \$000 -----		-- % --	----- \$000 -----		-- % --
Education	1,531	29,305	1814.11	0.50	8.81	1645.44
Transportation	266,943	230,741	-13.56	88.04	69.40	-21.18
Water Projects	11,378	44,494	291.05	3.75	13.38	256.59
Medical	25,212	18,770	-25.55	8.32	5.65	-32.11
Utilities	18,657	23,568	26.32	6.15	7.09	15.19
Justice	81	10,339	12664.20	0.03	3.11	11539.41
Community						
Housing	63,225	112,258	77.55	20.85	33.76	61.91
Misc.	939	36,014	3735.36	0.31	10.83	3397.38
Total	387,966	505,489	30.29	127.96	152.03	18.81

Appendix Table 6. Federal Grants and Obligation Expenditures for Infrastructure Programs to Population Decrease Counties, Great Plains Region, 1985 and 1992

Program	Total Expenditures			Per Capita Expenditures		
	1985	1992	% Change 1985-1992	1985	1992	% Change 1985-1992
	----- \$000 -----		-- % --	----- \$000 -----		-- % --
Education	410	15,453	3669.02	0.11	4.43	4097.05
Transportation	478,436	444,429	-7.11	123.21	127.45	3.44
Water Projects	44,801	15,911	-64.49	11.54	4.56	-60.45
Medical	5,423	10,206	88.20	1.40	2.93	109.57
Utilities	99,165	101,128	1.98	25.54	29.00	13.56
Justice	0	108	--	0.00	0.03	--
Community						
Housing	122,987	111,674	-9.20	31.67	32.03	1.11
Misc.	956	28,622	2893.93	0.25	8.21	3233.94
Total	752,178	727,531	-3.28	193.71	208.64	7.71

Appendix Table 7. Federal Grants and Obligation Expenditures for Infrastructure Programs to Agricultural Counties, Great Plains Region, 1985 and 1992

Program	Total Expenditures			Per Capita Expenditures		
	1985	1992	% Change 1985-1992	1985	1992	% Change 1985-1992
	----- \$000 -----		-- % --	----- \$000 -----		-- % --
Education	244	4,114	1586.07	0.21	4.10	1868.20
Transportation	229,176	171,102	-25.34	195.54	170.42	-12.85
Water Projects	10,648	6,019	-43.47	9.09	6.00	-34.01
Medical	1,076	339	-68.49	0.92	0.34	-63.22
Utilities	58,977	46,481	-21.19	50.32	46.30	-8.00
Justice	0	(32)	--	0.00	0.00	--
Community						
Housing	36,630	44,701	22.03	31.25	44.52	42.45
Misc.	437	4,372	900.46	0.37	4.35	1067.86
Total	337,188	277,096	-17.82	287.70	275.99	-4.07

Appendix Table 8. Federal Grants and Obligation Expenditures for Infrastructure Programs to Other Counties, Great Plains Region, 1985 and 1992

Program	Total Expenditures			Per Capita Expenditures		
	1985	1992	% Change 1985-1992	1985	1992	% Change 1985-1992
	----- \$000 -----		-- % --	----- \$000 -----		-- % --
Education	1,697	40,644	2295.05	0.30	7.00	2268.25
Transportation	516,202	504,068	-2.35	89.88	86.79	-3.44
Water Projects	45,530	54,386	19.45	7.93	9.36	18.11
Medical	29,559	28,637	-3.12	5.15	4.93	-4.20
Utilities	58,845	78,215	32.92	10.25	13.47	31.43
Justice	81	10,480	--	0.01	1.80	--
Community						
Housing	149,582	179,232	19.82	26.05	30.86	18.48
Misc.	1,458	60,265	4033.40	0.25	10.38	3987.14
Total	802,954	955,927	19.05	139.81	164.59	17.72

Appendix Table 9. Federal Grants and Obligation Expenditures for Infrastructure Programs to Metropolitan Counties, Great Plains Region, 1985 and 1992

Program	Total Expenditures			Per Capita Expenditures		
	1985	1992	% Change 1985-1992	1985	1992	% Change 1985-1992
	----- \$000 -----		-- % --	----- \$000 -----		-- % --
Education	1,145	24,737	2060.44	0.37	7.77	1980.40
Transportation	248,298	215,044	-13.39	80.96	67.52	-16.60
Water Projects	32,522	22,858	-29.72	10.60	7.18	-32.32
Medical	6,247	10,448	67.25	2.04	3.28	61.05
Utilities	15,926	21,638	35.87	5.19	6.79	30.83
Justice	(2)	7,953	--	0.00	2.50	--
Community						
Housing	56,099	86,276	53.79	18.29	27.09	48.09
Misc.	629	31,635	4929.41	0.21	9.93	4743.08
Total	360,864	420,589	16.55	117.66	132.05	12.23

Appendix Table 10. Federal Grants and Obligation Expenditures for Infrastructure Programs to Nonmetropolitan Counties, Great Plains Region, 1985 and 1992

Program	Total Expenditures			Per Capita Expenditures		
			% Change 1985-1992			% Change 1985-1992
	1985	1992		1985	1992	
	----- \$000 -----		-- % --	----- \$000 -----		-- % --
Education	796	20,020	2415.08	0.21	5.52	2568.32
Transportation	497,080	460,125	-7.43	129.18	126.86	-1.79
Water Projects	23,656	37,546	58.72	6.15	10.35	68.39
Medical	24,388	18,528	-24.03	6.34	5.11	-19.40
Utilities	101,896	103,058	1.14	26.48	28.41	7.30
Justice	83	2,494	--	0.02	0.69	--
Community						
Housing	130,113	137,657	5.80	33.81	37.95	12.24
Misc.	1,266	33,002	2506.79	0.33	9.10	2665.63
Total	779,278	812,430	4.25	202.52	224.00	10.61

Appendix Table 11 Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Colorado, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
	-----	-----	-----	-----	-----	-----
	\$000					
Education	--	8,498	8,498	15,247	--	15,247
Transportation	79,539	1,363	80,902	65,659	2,088	67,747
Water Projects	12,370	554	12,924	12,761	--	12,761
Medical	4,654	--	4,654	6,451	--	6,451
Utilities	451	--	451	16,814	--	16,814
Justice	83	240	323	--	--	--
Community						
Housing	26,960	9,766	36,726	32,395	13,035	45,430
Misc.	90	15,717	15,807	27,360	--	27,360
Total	124,147	36,138	160,285	176,687	15,123	191,810

Appendix Table 12. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Kansas, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
----- \$000 -----						
Education	224	6,947	7,171	1,278	7,233	8,511
Transportation	65,700	—	65,700	74,606	1,466	76,072
Water Projects	464	2,977	3,441	2,610	—	2,610
Medical	504	—	504	2,923	—	2,923
Utilities	13,497	—	13,497	12,668	—	12,668
Justice	—	167	167	—	—	—
Community Housing	21,734	10,223	31,957	17,855	9,373	27,228
Misc.	176	11,984	12,160	15,114	—	15,114
Total	102,299	32,298	134,597	127,054	18,072	145,126

Appendix Table 13. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Montana, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
----- \$000 -----						
Education	171	2,714	2,885	1,010	3,237	4,247
Transportation	57,260	4,053	61,313	69,554	142	69,696
Water Projects	6,825	573	7,398	392	18	410
Medical	471	—	471	867	—	867
Utilities	34,504	—	34,504	7,433	—	7,433
Justice	—	98	98	143	—	143
Community Housing	7,172	9,003	16,175	17,610	3,126	20,736
Misc.	40	4,572	4,612	2,543	4,427	6,970
Total	106,443	21,013	127,456	99,552	10,950	110,502

Appendix Table 14. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Nebraska, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
----- \$000 -----						
Education	—	3,434	3,434	4,066	—	4,066
Transportation	55,400	244	55,644	59,708	81	59,789
Water Projects	4,006	336	4,342	3,439	—	3,439
Medical	16,935	—	16,935	6,598	—	6,598
Utilities	—	—	—	6,412	—	6,412
Justice	—	88	88	—	—	—
Community						
Housing	9,310	5,761	15,071	15,037	5,241	20,548
Misc.	—	5,687	5,687	428	2,874	3,302
Total	85,651	15,550	101,201	95,688	8,196	104,154

Appendix Table 15. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, New Mexico, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
----- \$000 -----						
Education	—	2,787	2,787	7,556	3,504	11,060
Transportation	53,038	588	53,626	51,514	2,292	53,806
Water Projects	3,519	268	3,787	9,676	142	9,818
Medical	2,844	—	2,844	3,146	—	3,146
Utilities	3,225	—	3,225	3,458	—	3,458
Justice	—	70	70	3,626	—	3,626
Community						
Housing	14,139	8,651	22,790	19,595	3,353	22,948
Misc.	123	3,952	4,075	218	4,253	4,471
Total	76,888	16,316	93,204	98,789	13,544	112,333

Appendix Table 16. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, North Dakota, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
	----- \$000 -----					
Education	154	2,944	3,098	4,701	3,051	7,752
Transportation	83,867	--	83,867	65,814	2,045	67,859
Water Projects	9,109	1,504	10,613	13,889	--	13,889
Medical	53	--	53	--	--	--
Utilities	27,995	--	27,995	11,092	--	11,092
Justice	--	--	--	2,282	--	2,282
Community						
Housing	16,084	9,761	25,845	24,333	3,466	27,799
Misc.	345	5,118	5,463	4,638	4,893	9,531
Total	137,607	19,327	156,934	126,749	13,455	140,204

Appendix Table 17. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Oklahoma, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
	----- \$000 -----					
Education	534	4,199	4,733	4,650	--	4,650
Transportation	49,517	490	50,007	62,228	1,106	63,334
Water Projects	5,295	986	6,281	1,668	--	1,668
Medical	897	--	897	2,900	--	2,900
Utilities	5,507	--	5,507	32,699	--	32,699
Justice	--	111	111	--	--	--
Community						
Housing	23,087	13,670	36,757	24,049	--	24,049
Misc.	--	6,925	6,925	531	6,693	7,224
Total	84,837	26,381	111,218	128,725	7,799	136,524

Appendix Table 18. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, South Dakota, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
----- \$000 -----						
Education	490	2,470	2,960	4,394	3,249	7,643
Transportation	66,244	757	67,001	83,881	2,001	85,882
Water Projects	5,513	2,960	8,473	11,065	—	11,065
Medical	1,317	—	1,317	2,347	—	2,347
Utilities	7,854	—	7,854	14,739	—	14,739
Justice	—	—	—	2,312	—	2,312
Community						
Housing	14,986	14,594	29,580	34,585	4,905	39,490
Misc.	617	4,441	5,058	2,246	4,586	6,832
Total	97,021	25,222	122,243	155,569	14,741	170,310

Appendix Table 19. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Texas, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
----- \$000 -----						
Education	368	15,335	15,703	2,729	12,035	14,764
Transportation	173,382	1,999	175,381	80,599	2,165	82,764
Water Projects	1,440	890	2,330	4,196	—	4,196
Medical	2,764	—	2,764	2,600	—	2,600
Utilities	20,951	—	20,951	12,757	—	12,757
Justice	—	243	243	52	—	52
Community						
Housing	48,117	15,511	63,628	21,858	15,538	37,396
Misc.	437	17,233	17,670	2,422	16,875	19,297
Total	247,459	51,211	298,670	127,213	46,613	173,826

Appendix Table 20. Federal Grant and Obligation Expenditures for Infrastructure Programs to Counties, Distributed by State, and Total for Great Plains Counties, Wyoming, 1985 and 1992

Program	1985			1992		
	Great Plains	Distributed	Total	Great Plains	Distributed	Total
----- \$000 -----						
Education	--	1,864	1,864	2,396	2,877	5,273
Transportation	58,087	727	58,814	61,607	3,945	65,552
Water Projects	7,638	610	8,248	708	--	708
Medical	199	--	199	1,145	--	1,145
Utilities	3,838	--	3,838	6,623	--	6,623
Justice	--	--	--	2,035	--	2,035
Community						
Housing	4,601	2,188	6,789	16,346	1,896	18,242
Misc.	66	3,669	3,735	5,868	--	5,868
Total	74,429	9,058	83,487	96,728	8,718	105,446

Appendix Table 21. Gross Domestic Product Implicit Price Deflators for 1992 Base Year, 1980-1992

Year	GDP Implicit Price Deflator
1980	60.28
1981	66.45
1982	70.41
1983	73.19
1984	75.93
1985	78.43
1986	80.26
1987	82.79
1988	85.32
1989	88.84
1990	92.50
1991	97.28
1992	100.00