

The Economic Impact of McKenzie County Healthcare Systems, Inc.



**Prepared by:
National Center for Rural Health Works
Oklahoma State University**

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Prepared for:

McKenzie County Healthcare Systems, Inc.

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Medical facilities have a tremendous medical and economic impact on the community in which they are located. This is especially true with health care facilities, such as hospitals and nursing homes. These facilities not only employ a number of people and have a large payroll, but they also draw into the community a large number of people from rural areas that need medical services and may also attract visitors to the area through tourism activities. The overall objective of this study is to measure the economic impact of McKenzie County Healthcare Systems, Inc., on McKenzie County, North Dakota. The specific objectives of this report are to:

- 1.** Discuss the importance of health care services to rural development, including national health trend data;
- 2.** Review McKenzie County demographic and economic data;
- 3.** Summarize the direct economic activities of McKenzie County Healthcare Systems, Inc.;
- 4.** Present concepts of community economics and multipliers; and
- 5.** Estimate the economic impact of McKenzie County Healthcare Systems, Inc.

No recommendations will be made in this report.

Health Services and Rural Development

The relationship between health care services and rural development is often overlooked. At least three primary areas of commonality exist. A strong health care system can help attract and maintain business and industry growth, and attract and retain retirees. A strong health care system also creates jobs in the local area.

Services that Impact Rural Development

Type of Growth	Services Important to Attract Growth
Business and Industry	Health and Education
Retirees	Health and Safety

Studies have found that quality-of-life (QOL) factors are playing a dramatic role in business and industry location decisions. Among the most significant of the QOL variables are health care services, which are important for at least three reasons.

Business and Industry Growth

First, as noted by a member of the Board of Directors of a community economic development corporation, the presence of good health and education services is imperative to business and industrial leaders as they select a community for location. Employees and participating management may offer strong resistance if they are asked to move into a community with substandard or inconveniently located health services.

Secondly, when a business or industry makes a location decision, it wants to ensure that the local labor force will be productive and a key factor in productivity is good health. Thus, investments in health care services can be expected to yield dividends in the form of increased labor productivity.

The cost of health care services is the third factor that is considered by business and industry in development decisions. Research shows that corporations take a serious look at health care costs in determining site locations. Sites that provide health care services at a lower cost were given higher consideration for new industry than sites with much higher health care costs.

Health Services and Attracting Retirees

A strong and convenient health care system is important to retirees, a special group of residents whose spending and purchasing can be a significant source of income for the local economy. Many rural areas have environments that enable them to be in a good position to attract and retain retirees (e.g., moderate climate and outdoor activities). The amount of spending embodied in this population, including the purchasing power associated with Social Security, Medicare, and other transfer payments, is substantial. Additionally, middle and upper income retirees often have substantial net worth. Although the data are limited, several studies suggest health services may be a critical variable that influences the location decision of retirees. For example, one study found that four items were the best predictors of retirement locations: safety, recreational facilities, dwelling units, and health care. Another study found that nearly 60 percent of potential retirees said health services were in the “must have” category when considering a retirement community. Only protective services were mentioned more often than health services as a “must have” service.

Health Services and Job Growth

A factor important to the success of rural economic development is job creation. *The health care sector is an extremely fast growing sector, and based on the current demographics,*

there is every reason to expect this trend to continue. Data in **Table 1** provide selected expenditure and employment data for the United States. Several highlights from the national data are:

- In 1970, health care services as a share of the national gross domestic product (GDP) were 7.2 percent and increased to 17.9 percent in 2011;
- Per capita health expenditures increased from \$356 in 1970 to \$8,680 in 2011;
- Employment in the health sector increased 359.6 percent from 1970 to 2011; and
- Annual increases in employment from 2001 to 2011 ranged from 1.8 percent to 2.8 percent.

In addition, the U. S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, projects that health care expenditures will account for 18.2 percent of GDP by 2015 and increase to 19.6 percent of GDP in 2021. Per capita health care expenditures are projected to increase to \$10,272 in 2015 and to \$14,103 in 2021. Total health expenditures are projected to increase to almost \$4.8 trillion in 2021.

Figure 1 illustrates 2011 health expenditures by percent of GDP and by type of health service. Health services represented 17.9 percent of national GDP in 2011. The largest category of health services was hospital care, representing 31.0 percent of the total and the second largest category was physician services with 27.0 percent of the total.

Table 1
United States Health Expenditures and Employment Data
1970-2011; Projected for 2015-2021

Year	Total Health Expenditures (\$Billions)	Per Capita Health Expenditures (\$)	Health as % of GDP (%)	Health Sector Employment (000)	Avg. Annual Increase in Employment (%)
1970	\$74.9	\$356	7.2%	3,052 ^a	
1980	255.8	1,110	9.2%	5,278 ^a	6.6%
1990	724.3	2,854	12.5%	8,211 ^a	5.1%
2000	1,377.2	4,878	13.8%	10,858 ^a	2.9%
2001	1,493.3	5,240	14.5%	11,188 ^b	
2003	1,775.4	6,121	15.9%	11,817 ^b	2.8%
2005	2,030.5	6,875	16.1%	12,314 ^b	2.1%
2007	2,298.3	7,636	16.4%	12,947 ^b	2.6%
2009	2,501.2	8,163	17.9%	13,543 ^b	2.3%
2011	2,700.7	8,680	17.9%	14,026 ^b	1.8%
				Avg Yrly Increase 2001 to 2011	2.5%
Projections					
2015	3,307.6	10,272	18.2%		
2017	3,723.3	11,360	18.4%		
2019	4,207.3	12,618	18.9%		
2021	4,781.0	14,103	19.6%		

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov [August 2013]); U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 1960-2011 and National Health Expenditure Projections 2011-2021 (<http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html> [August 2013])).

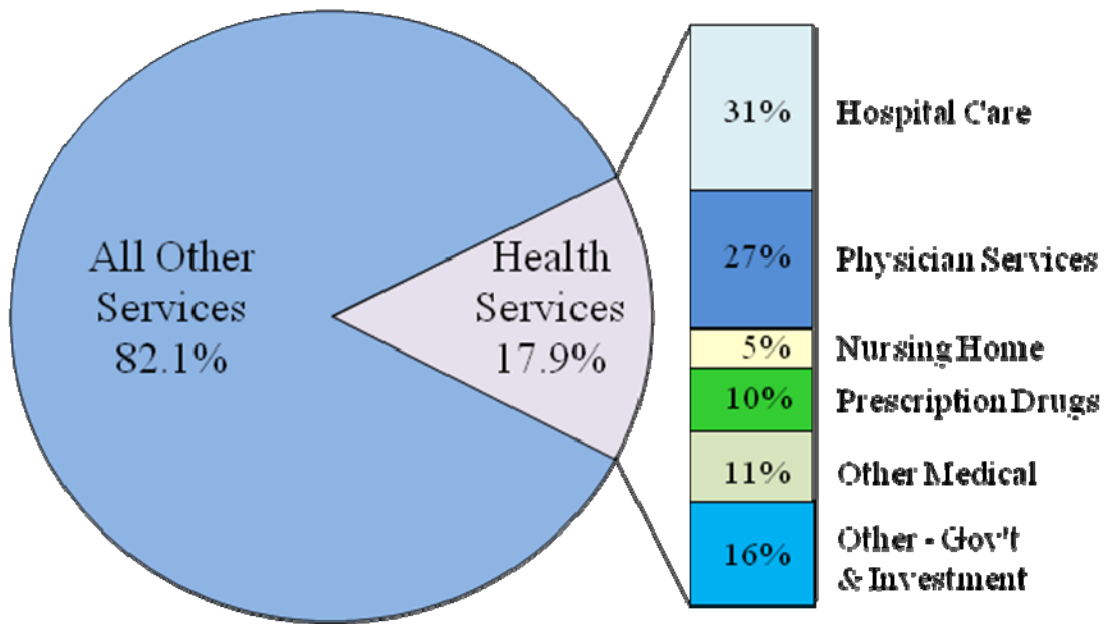
N/A - Not Available.

^a Based on Standard Industrial Classification (SIC) codes for health sector employment.

^b Based on North American Industrial Classification System (NAICS) for health sector employment.

Figure 1
National Health Expenditures
as a Percent of Gross Domestic Product
and by Health Service Type, 2011

National Health Care Expenditures
 \$2.7 trillion



SOURCE:
 U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 2011 (http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html [August 2013]).

U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 2011 (http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html [August 2013]).

McKenzie County Demographic and Economic Data

McKenzie County is the medical service area of McKenzie County Healthcare Systems, Inc. McKenzie County data will be utilized in the IMPLAN model to generate the multipliers for McKenzie County. McKenzie County data are presented in the next tables to show the population, population estimates, and population projections, and population by race and ethnicity, and population by age and gender.

The 2000 and 2010 U. S. Census Bureau populations and population estimates for McKenzie County and North Dakota are illustrated in **Table 2**. The total population of McKenzie County was 5,737 in 2000 and 6,360 in 2010, representing an increase of 10.9 percent; this compares to North Dakota increasing only 4.7 percent. The latest estimated population available is for 2012; McKenzie County is estimated to have a population of 7,987, which is an estimated increase of 25.6 percent from 2010 to 2012. This compares to an increase of only 4.0 percent for North Dakota.

Data from the North Dakota Statewide Housing Assessment Resource Project show the population projections for both McKenzie county and North Dakota through 2015, 2020, and 2025. McKenzie County shows an increase of 85.1 percent from 2010 to 2015, an increase of 144.5 percent from 2010 to 2020, and an increase of 169.0 percent from 2010 to 2025. This compares to North Dakota increasing 11.5 percent from 2010 to 2015, increasing 19.9 percent from 2010 to 2020, and increasing 25.2 percent from 2010 to 2025. These data are projecting an incredible growth rate for McKenzie County compared to North Dakota.

Table 2
Population, Population Estimates, and Population Projections
for McKenzie County and the State of North Dakota

	McKenzie County	State of North Dakota
2000 Census	5,737	642,200
2010 Census	6,360	672,591
2012 Estimate	7,987	699,628
2015 Projected	11,771	750,023
2020 Projected	15,550	806,541
2025 Projected	17,110	841,820
% change 2000-2010	10.9%	4.7%
% change 2010-2012	25.6%	4.0%
% change 2010-2015	85.1%	11.5%
% change 2010-2020	144.5%	19.9%
% change 2010-2025	169.0%	25.2%

SOURCE: Census populations, U. S. Census Bureau (www.census.gov [August 2013]); County and state projections, North Dakota Statewide Housing Assessment Resource Project (www.ndsu.nodak.edu [August 2013]).

Table 3 illustrates the population by age groups for McKenzie County for the 2000 and 2010 Census years. When comparing the 2000 and 2010 Census data, the age groups that increased the most from 2000 to 2010 included the 20-24 year age group with a 111.4 percent increase and the 45-64 year age group with a 25.6 percent increase. The age group with the largest loss was the 15-19 year age group with a decrease of 14.1 percent. The males are growing faster than females with an increase of 14.0 percent from 2000 to 2010 and increasing from 50.2 percent of the total population in 2000 to 51.6 percent of the total population in 2010.

Table 3
Population by Age and Gender for McKenzie County, North Dakota

Age Groups	2000 Census		2010 Census		% Change: 2000 to 2010
	Number	% of Total	Number	% of Total	
0-14	1,402	24.4%	1,416	22.3%	1.0%
15-19	496	8.6%	426	6.7%	-14.1%
20-24	175	3.1%	370	5.8%	111.4%
25-44	1,338	23.3%	1,455	22.9%	8.7%
45-64	1,426	24.9%	1,791	28.2%	25.6%
65+	<u>900</u>	<u>15.7%</u>	<u>902</u>	<u>14.2%</u>	0.2%
Total	<u>5,737</u>	<u>100.0%</u>	<u>6,360</u>	<u>100.0%</u>	10.9%
Male	2,878	50.2%	3,282	51.6%	14.0%
Female	<u>2,859</u>	<u>49.8%</u>	<u>3,078</u>	<u>48.4%</u>	7.7%
Total	<u>5,737</u>	<u>100.0%</u>	<u>6,360</u>	<u>100.0%</u>	10.9%

SOURCE: 2000 and 2010 census populations, U. S. Census Bureau (www.census.gov [August 2013]).

Table 4 illustrates the race breakdowns for McKenzie County for the 2000 and 2010 Census years. The race groups as a percent of total population for 2000 did not vary considerably from the race groups as a percent of total population for 2010. For instance, the white race group was 77.4 percent of the total population in 2000 and was 75.3 percent of the total population in 2010. These percents stayed relatively similar for the two Census years; i.e., there were no significant differences in the race groups between the 2000 and 2010 Census years. The Hispanic origin ethnic group increased 139.7 percent from a population of 58 in 2000 to a population of 139 in 2010.

Table 4
Population by Race and Ethnic Groups for McKenzie County, North Dakota

Race	2000 Census		2010 Census		% Change: 2000 to 2010
	No.	% of Total	No.	% of Total	
White	4,438	77.4%	4,792	75.3%	8.0%
Black	4	0.1%	8	0.1%	100.0%
American Indian & Alaska Native	1,215	21.2%	1,412	22.2%	16.2%
Asian	3	0.1%	19	0.3%	533.3%
Native HI/Other Pacific Islander	1	0.0%	2	0.0%	100.0%
Some Other Race	8	0.1%	27	0.4%	237.5%
Two or More Races ¹	<u>68</u>	<u>1.2%</u>	<u>100</u>	<u>1.6%</u>	<u>47.1%</u>
Totals	<u>5,737</u>	<u>100.0%</u>	<u>6,360</u>	<u>100.0%</u>	<u>10.9%</u>
Hispanic Origin ²	58	1.0%	139	2.2%	139.7%

SOURCE: 2000 and 2010 census populations, U.S. Census Bureau (www.census.gov [August 2013]).

¹ Two or more races indicates a person is included in more than one race group; it was introduced as a new category in the 2000 Census.

² Hispanic population is not a race but rather a description of ethnic origin; Hispanics are included in the five race groups.

Data in **Table 5** are from U.S. Census Bureau, County Business Patterns, and illustrate how the health sector is growing over time in McKenzie County and in North Dakota. From 2002 through 2011, the health services sector employment grew 14.0 percent compared to the total county employment growth of 124.4 percent. During this same time period, health services payroll grew 74.2 percent compared to the total county payroll growth of 560.0 percent.

The health services sector accounted for 17.5 percent of county employment in 2002 and decreased to 8.9 percent in 2011; health services payroll was 12.6 percent of the county payroll in 2002 and decreased to 3.3 percent in 2011. Comparing McKenzie County to North Dakota,

Table 5
Employment and Payroll for McKenzie County and the State of North Dakota

	<i>Employment</i>			
	Health Services	Total County	Hlth Svcs as a % of Total County Employment	Hlth Svcs as a % of Total State Employment
2002	179	1,020	17.5%	19.3%
2003	196	980	20.0%	19.8%
2004	203	1,026	19.8%	19.4%
2005	187	1,054	17.7%	18.6%
2006	190	1,082	17.6%	18.4%
2007	194	1,290	15.0%	17.5%
2008	198	1,500	13.2%	17.0%
2009	203	1,671	12.1%	18.0%
2010	199	1,843	10.8%	18.6%
2011	204	2,289	8.9%	18.4%
% Change from 2002 to 2011	14.0%	124.4%		
	<i>Payroll (\$1,000s)</i>			
	Health Services	Total County	Hlth Svcs as a % of Total County Payroll	Hlth Svcs as a % of Total State Payroll
2002	2,885	22,829	12.6%	20.8%
2003	3,409	23,363	14.6%	21.0%
2004	3,564	25,080	14.2%	20.9%
2005	3,705	29,654	12.5%	20.7%
2006	3,633	35,946	10.1%	19.9%
2007	3,933	47,683	8.2%	18.6%
2008	4,257	70,409	6.0%	18.4%
2009	4,591	84,598	5.4%	19.5%
2010	4,838	99,750	4.9%	19.5%
2011	5,027	150,675	3.3%	18.7%
% Change from 2002 to 2011	74.2%	560.0%		

SOURCE: U.S. Census Bureau, County Business Patterns; 2002-2011 NAICS data (www.census.gov [August 2013]).

¹ The Health Care and Social Assistance NAICS sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. Industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance. The services provided by establishments in this sector are delivered by trained professionals. All industries in the sector shared this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry.

*Data are excluded for self-employed persons, employees of private households, railroad employees, agricultural production workers, and for most government employees (except for those working in wholesale liquor establishments, retail liquor stores, Federally-chartered savings institutions, Federally-chartered credit unions, and hospitals).

state health services employment comprised 19.3 percent of the total state employment in 2002 and decreased to 18.4 percent in 2011 and the state health services payroll comprised 20.8 percent of the total state payroll and decreased to 18.7 percent.

Data in **Tables 6** and **7** are from the U. S. Department of Commerce, Bureau of Economic Analysis (BEA); BEA data have a broader definition of employment than does County Business Patterns. The purpose of these tables is to demonstrate the importance of the health sector as compared to the entire economy. In 2011, the health care sector included 244 full- and part-time employees, or 4.8 percent of the private employment in McKenzie County (**Table 6**). The health care sector was the fifth largest sector of total private employment, with the largest sector, mining, 2nd) construction, 3rd) transportation and warehousing, and 4th) accommodations and food services. At the state level, health care and social assistance is the largest sector of total private employment. From **Table 7**, the health care sector accounted for \$7.4 million in total private earnings (employee wages, salaries, and benefits), or 2.0 percent of the total private earnings for McKenzie County in 2011. The health care sector ranked seventh in private earnings by industry, while mining ranked first with 29.1 percent and construction ranked second with 22.8 percent. At the state level, health care and social assistance comprised 15.3 percent of the total private earnings and was the top private earnings sector in the state.

Data in **Table 8** are also from the U. S. Department of Commerce, Bureau of Economic Analysis (BEA) and illustrate all federal and state funds coming into McKenzie Counties; these federal and state funds are referred to as transfer receipts. Total transfer receipts into McKenzie County are \$39.5 million. Of this total, 37.4 percent or \$14.8 million are for retirement and disability insurance benefits and 41.2 percent or \$16.3 million are for medical benefits including Medicare and Medicaid.

Table 6
Full- and Part-Time Employment by Type of Employment and by Major Industry ¹
for McKenzie County and the State of North Dakota, 2011

Employment Categories	McKenzie County			State of North Dakota	
	No. of Jobs	% of Total	% of Private	% of Total	% of Private
Total FT & PT	<u>7,113</u>	<u>100.0%</u>		<u>100.0%</u>	
Wage & salary	5,605	78.8%		78.8%	
Proprietors'	<u>1,508</u>	<u>21.2%</u>		<u>21.2%</u>	
Farm proprietors'	484	32.1%		23.9%	
Nonfarm proprietors' ²	1,024	<u>67.9%</u>		<u>76.1%</u>	
By Industry:					
Farm employment	561	7.9%		6.1%	
Nonfarm employment	6,552	<u>92.1%</u>		<u>93.9%</u>	
Private	<u>5,039</u>	76.9%	<u>100.0%</u>	83.0%	<u>100.0%</u>
Forestry, fishing, related	65		1.3%		1.0%
Mining	1,131		22.4%		4.8%
Utilities	(D)		**		0.8%
Construction	961		19.1%		8.1%
Manufacturing	72		1.4%		6.1%
Wholesale trade	227		4.5%		5.8%
Retail trade	(D)		**		13.4%
Transp & warehousing	759		15.1%		4.9%
Information	(D)		**		1.9%
Finance & ins	135		2.7%		6.1%
RE rental & leasing	175		3.5%		4.3%
Prof & techn svcs	196		3.9%		4.7%
Mgmt of cos & enterp	(D)		**		1.1%
Admin & waste svcs	(D)		**		4.3%
Educational svcs	73		1.4%		1.4%
Health care & social assist	244		4.8%		14.8%
Arts, entert, & recreation	71		1.4%		1.7%
Accomm & food svcs	264		5.2%		8.4%
Other svcs, not pub admin	(D)		**		<u>6.2%</u>
<i>Sum of (D) Categories³</i>	<u>666</u>		<u>13.2%</u>		
Govt & govt enterprises	<u>1,513</u>	<u>23.1%</u>		<u>17.0%</u>	

SOURCE: Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [August 2013]).

(D) Not shown to avoid disclosure of confidential information, but estimates are included in totals.

** Due to nondisclosure of confidential data, no percentages are available.

¹ The estimates are based on the 2012 North American Industry Classification System (NAICS).

² Excludes limited partners.

³ All (D) categories have been totaled to show the total amount of missing data from private employment.

Table 7
Personal Income, Earnings by Place of Work and by Industry ¹
for McKenzie County and the State of North Dakota, 2011

Employment Categories	McKenzie County			State of North Dakota	
	Income (\$1,000s)	% of Total	% of Private	% of Total	% of Private
Total Personal Income	<u>448,945</u>	<u>100.0%</u>		<u>100.0%</u>	
Total earnings by place of work	<u>465,896</u>	<u>103.8%</u>		<u>81.6%</u>	
Wage & salary disbursements	342,225	73.5%		64.8%	
Proprietors' income ²	49,948	10.7%		19.3%	
Other	73,723	15.8%		<u>16.0%</u>	
Earnings by Industry	465,896	100.0%		100.0%	
Farm	28,240	6.1%		12.0%	
Nonfarm	<u>437,656</u>	<u>93.9%</u>		<u>88.0%</u>	
Private	<u>361,168</u>	82.5%	<u>100.0%</u>	79.8%	<u>100.0%</u>
Forestry, fishing, related	1,729		0.5%		0.8%
Mining	105,066		29.1%		9.4%
Utilities	(D)		**		2.2%
Construction	82,326		22.8%		10.7%
Manufacturing	1,354		0.4%		7.6%
Wholesale trade	28,186		7.8%		9.1%
Retail trade	(D)		**		8.4%
Transp & warehousing	68,851		19.1%		7.1%
Information	(D)		**		2.6%
Finance & ins	6,074		1.7%		6.0%
RE rental & leasing	15,846		4.4%		2.5%
Prof & techn svcs	13,640		3.8%		5.6%
Mgmt of cos & enterp	(D)		**		1.9%
Admin & waste svcs	(D)		**		2.6%
Educational svcs	783		0.2%		0.6%
Health care & soc assist	7,371		2.0%		15.3%
Arts, entert, & recreation	2,105		0.6%		0.4%
Accomm & food svcs	6,344		1.8%		3.3%
Other svcs, not pub admin	(D)		**		<u>4.1%</u>
<i>Sum of (D) Categories³</i>	<u>21,493</u>		<u>6.0%</u>		
Govt & govt enterprises	<u>76,488</u>	<u>17.5%</u>		<u>20.2%</u>	

SOURCE: Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [August 2013]).

(D) Not shown to avoid disclosure of confidential information, but estimates are included in totals.

** Due to nondisclosure of confidential data, no percentages are available.

¹ The estimates are based on the 2012 North American Industry Classification System (NAICS).

² Proprietors' income includes the inventory valuation adjustment and capital consumption adjustment.

³ All (D) categories have been totaled to show the total amount of missing data from private employment.

Table 8
Transfer Receipts for McKenzie County and the State of North Dakota, 2011

Transfer Receipts Categories	McKenzie County		North Dakota	
	Payments (\$1,000s)	% of Total	Payments (\$1,000s)	% of Total
<i>Personal transfer receipts total</i>	<u>39,558</u>	<u>100.0%</u>	<u>4,509,722</u>	<u>100.0%</u>
<i>Receipts of individuals from govts</i>	<u>38,005</u>	<u>96.1%</u>	<u>4,359,851</u>	<u>96.7%</u>
Retirement & disability ins benefits	<u>14,784</u>	<u>37.4%</u>	<u>1,702,145</u>	<u>37.7%</u>
Old-age, surv & disab ins (OASDI) benefits	13,238	33.5%	1,519,850	33.7%
Railroad ret & disab benefits	54	0.1%	63,875	1.4%
Workers' compensation	1,490	3.8%	118,141	2.6%
Other govt ret & disab ins benefits ¹	(L)	**	279	0.0%
Medical benefits	<u>16,309</u>	<u>41.2%</u>	<u>1,827,323</u>	<u>40.5%</u>
Medicare benefits	8,511	21.5%	1,048,403	23.2%
Public assist medical care benefits ²	7,669	19.4%	737,479	16.4%
Military medical ins benefits ³	129	0.3%	41,441	0.9%
Income maintenance benefits	<u>3,722</u>	<u>9.4%</u>	<u>414,053</u>	<u>9.2%</u>
Supplemental security income (SSI) benefits	254	0.6%	46,881	1.0%
Family Assistance ⁴	342	0.9%	20,691	0.5%
Suppl Nutrition Assistance Prog (SNAP)	819	2.1%	95,468	2.1%
Other income maint benefits ⁵	<u>2,307</u>	<u>5.8%</u>	<u>251,013</u>	<u>5.6%</u>
Unemp insurance compensation	<u>213</u>	<u>0.5%</u>	<u>95,214</u>	<u>2.1%</u>
State unemp ins compensation	203	0.5%	89,938	2.0%
Unemp comp for fed civilian empl (UCFE)	(L)	**	1,975	0.0%
Unemp for railroad emp	0	0.0%	563	0.0%
Unemp comp for vets (UCX)	0	0.0%	985	0.0%
Other unemp comp ⁶	<u>0</u>	<u>0.0%</u>	<u>1,753</u>	<u>**</u>
Veterans benefits	<u>1,170</u>	<u>3.0%</u>	<u>160,570</u>	<u>3.6%</u>
Veterans pension & disabl benefits	1,119	2.8%	138,420	3.1%
Veterans readjustment benefits ⁷	(L)	**	18,413	0.4%
Veterans life ins benefits	(L)	**	3,676	0.1%
Other assistance to veterans ⁸	<u>0</u>	<u>0.0%</u>	<u>61</u>	<u>0.0%</u>
Education & training assistance ⁹	<u>602</u>	<u>1.5%</u>	<u>122,503</u>	<u>2.7%</u>
Other receipts of individuals from govts ¹⁰	<u>1,205</u>	<u>3.0%</u>	<u>38,043</u>	<u>0.8%</u>
<i>Receipts of nonprofit institutions</i>	<u>921</u>	<u>2.3%</u>	<u>88,885</u>	<u>2.0%</u>
Receipts from Federal govt	370	0.9%	35,665	0.8%
Receipts from state and local govts	180	0.5%	17,385	0.4%
Receipts from businesses	<u>371</u>	<u>0.9%</u>	<u>35,835</u>	<u>0.8%</u>
<i>Receipts of individuals from businesses ¹¹</i>	<u>632</u>	<u>1.6%</u>	<u>60,986</u>	<u>1.4%</u>

SOURCE: U. S. Department of Commerce, Bureau of Economic Analysis, data based on NAICS (North American Industrial Classification System) (www.census.gov [August 2013]).

(L) Less than \$50,000, but the estimates for this item are included in the totals.

** Due to nondisclosure of confidential data, no percentages are available.

Data in **Table 9** include a summary of economic indicators and are from a variety of data sources. The per capita income from the U. S. Department of Commerce, Bureau of Economic Analysis (BEA), in McKenzie County is very high at \$63,961, compared to the state of \$47,236 and the U.S. of \$41,560. According to the U. S. Census Bureau, unemployment is very low in McKenzie County as compared to the state and the nation. The Census Bureau also reports the poverty rates of 12.5 percent for all people in McKenzie County, as compared to the state of 12.0 percent and the nation of 15.9 percent. The poverty rate is 16.4 percent for children under 18 in McKenzie County, as compared to the state of 14.8 percent and the nation of 22.5 percent. From BEA, the transfer receipts as a percent of total personal income are 8.8 percent for McKenzie County, as compared to the state of 14.0 percent and the nation of 17.9 percent. Subcategories of transfer receipts are shown on this table also, as a summary of transfer receipts from **Table 8**.

Table 9
Economic Indicators for McKenzie County,
the State of North Dakota and the United States

Indicator	McKenzie County	State of North Dakota	United States
Total Personal Income (2011)	\$448,945,000	\$32,306,315,000	\$12,949,905,000,000
Per Capita Income (2011)	\$63,961	\$47,236	\$41,560
Employment (2012)	5,735	379,828	142,469,000
Unemployment (2012)	85	12,236	12,506,000
Unemployment Rate (2012)	1.5%	3.1%	8.1%
Employment (Jun 2013)	7,140	396,005	145,113,000
Unemployment (Jun 2013)	110	13,160	12,248,000
Unemployment Rate (Jun 2013)	1.5%	3.2%	7.7%
% of People in Poverty (2011)	12.5%	12.0%	15.9%
% of Under 18 in Poverty (2011)	16.4%	14.8%	22.5%
Transfer Receipts (2011)	\$39,558,000	\$4,509,722,000	\$2,319,212,000,000
Transfer Receipts as Percent of Total Personal Income (2011)	8.8%	14.0%	17.9%
Transfer Receipts Sub-Categories (2011)			
<i>Retirement/Disability Insurance</i>	14,784,000	1,702,145,000	749,880,000,000
	37.4%	37.7%	32.3%
<i>Medical Benefits</i>	16,309,000	1,827,323,000	974,728,000,000
	41.2%	40.5%	42.0%
Medicare	8,511,000	1,048,403,000	545,096,000,000
	21.5%	23.2%	23.5%
Public Assist Medical Care (Medicaid)	7,669,000	737,479,000	418,330,000,000
	19.4%	16.4%	18.0%
<i>Income Maintenance Benefits</i>	3,722,000	414,053,000	278,037,000,000
	9.4%	9.2%	12.0%
<i>Unemployment Insurance Benefits</i>	213,000	95,214,000	108,555,000,000
	0.5%	2.1%	4.7%

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Census Bureau [August 2013].

The Direct Economic Activities of McKenzie County Healthcare Systems, Inc.

McKenzie County Healthcare Systems, Inc. provides the following health care services:

- Oncology
- Sleep studies
- General Orthopedics
- Cardiac and Pulmonary Rehab
- Lab and Radiology Services
- Diagnostic Imaging
- Nutrition Counseling
- Assisted Living
- Skilled Nursing (Nursing Home)
- General Surgery
- Speech Therapy
- Occupational Therapy
- Physical Therapy
- Family Practice and Primary Care
- Fitness and Wellness with Personal Training
- Acute Care and Emergency Services
- Cardiology
- Pharmacy
- Medical Expense Financial Counseling
- Charity Care
- Medicaid and Medicare Medical Care Provider

McKenzie County Healthcare Systems, Inc. also contributes to the local economy through jobs and wages, salaries, and benefits (income), and construction activities. The economic impact of McKenzie County Healthcare Systems, Inc. on the economy of McKenzie County will be measured by employment, income, and construction activities.

McKenzie County Healthcare Systems, Inc. provided the direct economic activity data presented in **Table 10**. McKenzie County Healthcare Systems, Inc. has provided data in three sub-sectors: the hospital, physician clinic, and an “other” health and medical sector that includes the Good Shepherd Home (GSH) (skilled nursing and basic care facility), Wellness Center (WC), and Horizon (HZ) (assisted living facility). These will be referred to as other health and medical services or “GSH/WC/HZ.” Wages, salaries, and benefits will be referred to as “income” throughout the rest of the study.

Table 10
Direct Economic Activities
of McKenzie County Healthcare Systems, Inc.

2013 Operations Employment (Total Full-Time and Part-Time)	
Hospital	62
Physician Clinic	24
GSH/WC/HZ	<u>115</u>
Total Healthcare Systems Employment from Operations	<u>201</u>
2013 Operations Income (Wages, Salaries, & Benefits)	
Hospital	\$2,254,820
Physician Clinic	\$964,087
GSH/WC/HZ	<u>\$2,057,216</u>
Total Healthcare Systems Income from Operations	<u>\$5,276,123</u>
Construction Totals	
2012	\$2,051,803
2013	\$4,833,042
2014	\$18,300,000
Estimated Construction Employment	
2012	15
2013	34
2014	130
Estimate Construction Income	
2012	\$1,318,309
2013	\$2,988,167
2014	\$11,425,344

SOURCE: Local operations employment and income data and construction totals provided by McKenzie County Healthcare Systems Inc.; estimated construction employment and income from IMPLAN data, Minnesota IMPLAN Group, Inc.

The hospital has 62 full- and part-time employees with income of \$2.3 million; the physician clinic has 24 employees with income of nearly \$1.0 million, and the GSH/WC/HZ has 115 employees with income of \$2.1 million. For 2013, McKenzie County Healthcare Systems, Inc. has 201 total full-time and part-time employees with income of \$5.3 million.

McKenzie County Healthcare Systems, Inc. had construction activities of \$2.1 million in 2012, \$4.8 million in 2013, and \$18.3 million in 2014. IMPLAN data were utilized to estimate the construction employment and construction income for each of these construction years. Employment was estimated to be 15 with construction income of \$1.3 million in 2012. For 2013, construction employment is estimated to be 34 with income of nearly \$3.0 million, and for 2014, the estimated construction employment is 130 with income of \$11.4 million. The data in **Table 10** reflect the direct economic activities of McKenzie County Healthcare Systems Inc.

Many rural communities have a large number of elderly, and the ranchers and farmers often retire in the towns. Thus, hospital facilities are an important component of the health sector. In summary, McKenzie County Healthcare Systems, Inc. is vitally important as a McKenzie County employer and important to McKenzie County's economy. McKenzie County Healthcare Systems, Inc. employs a large number of residents. The hospital and the employees in the hospital purchase a large amount of goods and services from businesses in McKenzie County. These impacts are referred to as secondary impacts or benefits to the economy. Before the secondary impacts of the hospital are discussed, basic concepts of county economics will be discussed.

Some Basic Concepts of County Economics and Income and Employment Multipliers

Figure 2 illustrates the major flow of goods, services, and dollars of any economy.

Businesses which sell some or all of their goods and services to buyers outside of the county are the foundation of a county economy. Such a business is a basic industry. The flow of products out of, and dollars into, a county are represented by the two arrows in the upper right portion of **Figure 2**. To produce these goods and services for "export" outside the county, the basic industry purchases inputs from outside of the county (upper left portion of **Figure 2**), labor from the residents or "households" of the county (left side of **Figure 2**), and inputs from service industries located within the county (right side of **Figure 2**). The flow of labor, goods, and services in the county is completed by households using their earnings to purchase goods and services from the county's service industries (bottom of **Figure 2**). The interrelationships shown in **Figure 2** illustrate that a change in any one segment of a county's economy will have reverberations throughout the entire economic system of the county.

Consider, for instance, the closing of a hospital. The services section will no longer pay employees and dollars going to households will stop. Likewise, the hospital will not purchase goods from other businesses and dollar flow to other businesses will stop. This decreases income in the "households" segment of the economy. Since earnings would decrease, households decrease their purchases of goods and services from businesses within the "services" segment of the economy. This, in turn, decreases these businesses' purchases of labor and inputs. Thus, the change in the economic base works its way throughout the entire local economy.

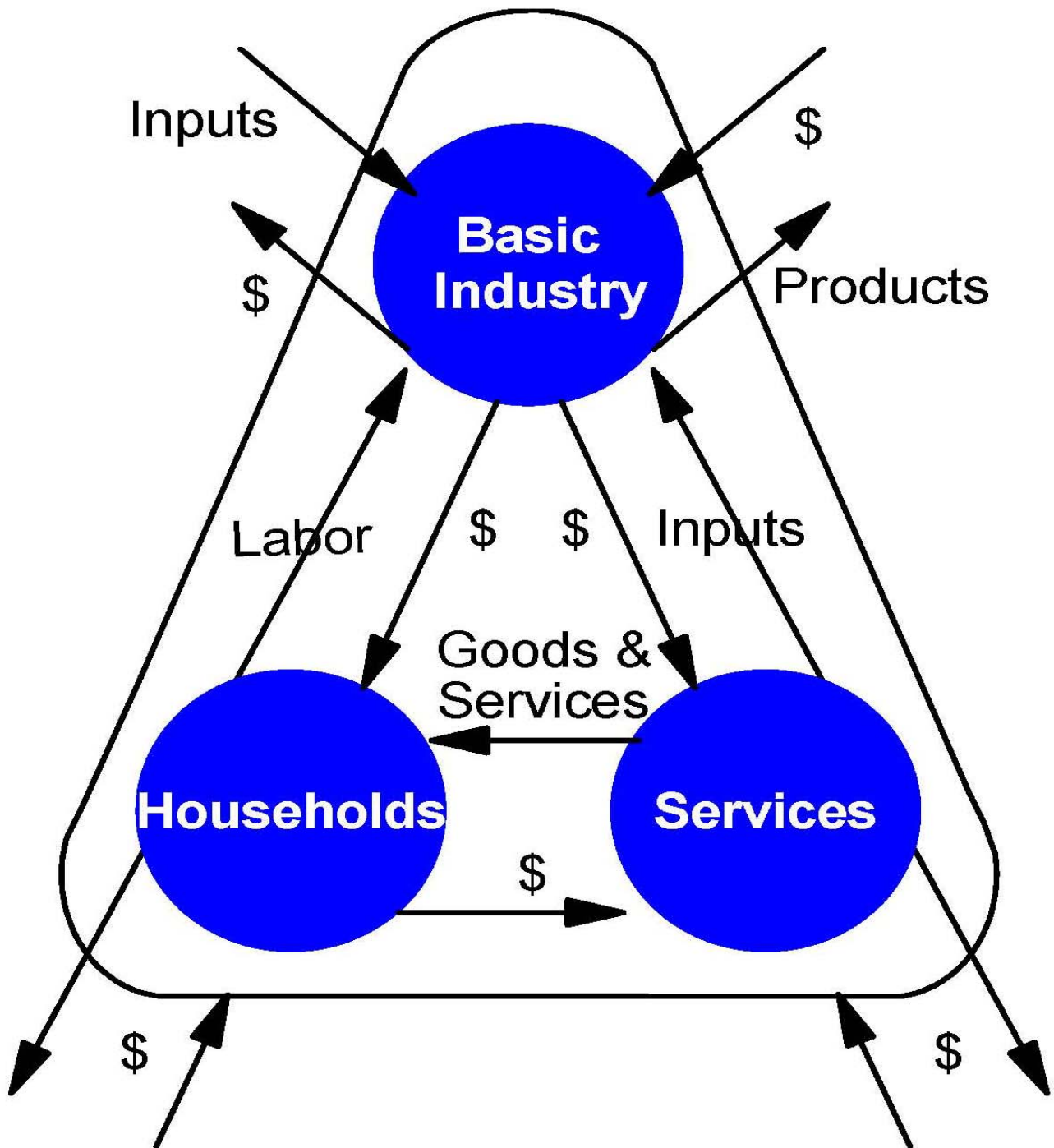


Figure 2
County Economic System

The total impact of a change in the economy consists of direct, indirect, and induced impacts. Direct impacts are the changes in the activities of the impacting industry, such as the closing of a hospital. The impacting business, such as the hospital, changes its purchases of inputs as a result of the direct impact. This produces an indirect impact in the business sectors. Both the direct and indirect impacts change the flow of dollars to the county's households. The households alter their consumption accordingly. The effect of this change in household consumption upon businesses in a county is referred to as an induced impact.

A measure is needed that yields the effects created by an increase or decrease in economic activity. In economics, this measure is called the multiplier effect. Multipliers are used in this report. An employment multiplier is defined as:

the ratio between direct employment, or that employment used by the industry initially experiencing a change in final demand and the direct, indirect, and induced employment.

An employment multiplier of 3.0 indicates that if one job is created by a new industry, 2.0 jobs are created in other sectors due to business (indirect) and household (induced) spending.

Secondary Impacts of McKenzie County Healthcare Systems, Inc.

Employment and income multipliers for the area have been calculated using the IMPLAN model. The model was developed by the U.S. Forest Service and allows for development of county multipliers. **Appendix A** includes additional information on the model and the IMPLAN data. McKenzie County Healthcare Systems, Inc. creates employment through operations and construction activities.

The employment multiplier for the hospital operations component is 1.19 (**Table 11**). This indicates that for each job created in the hospital sector, a 0.19 job is created throughout the area due to business (indirect) and household (induced) spending. Applying the employment multiplier to the hospital employment of 62 yields an estimate of the hospital's employment impact on McKenzie County. The secondary impact of the hospital sector is 12 employees ($62 \times 0.19 = 12$); these are the jobs created in other industry sectors in the economy of McKenzie County as a result of the spending of the hospital and the spending of the hospital employees. The total employment impact of the hospital sector is 74 full- and part-time employees ($62 \times 1.19 = 74$).

The employment multiplier for the physician sector is 1.20. After applying the physician employment multiplier to the 24 direct physician clinic employees, secondary physician employment impact is five employees and total physician employment impact is 29 employees (**Table 11**). The employment multiplier for the other health and medical services sector is 1.13. After applying the "other" employment multiplier to the 115 direct GSH/WC/HZ employees, the secondary "other" employment impact is 15 employees and the total "other" employment impact is 130 employees (**Table 11**).

Table 11
Employment Impact of McKenzie County Healthcare Systems, Inc., 2013 and 2014

Health Care Component	Number of Employees	Employment Multiplier	Secondary Employment Impact	Total Employment Impact
2013 Operations Employment				
Hospital	62	1.19	12	74
Physician Clinic	24	1.20	5	29
GSH/WC/HZ	<u>115</u>	1.13	<u>15</u>	<u>130</u>
Total Healthcare Systems Employment	<u>201</u>		<u>32</u>	<u>233</u>
2013 Construction Employment	<u>34</u>	1.22	<u>7</u>	<u>41</u>
Total 2013 Employment	<u>235</u>		<u>39</u>	<u>274</u>
2014 ESTIMATED Operations Employment*				
Hospital	62	1.19	12	74
Physician Clinic	24	1.20	5	29
GSH/WC/HZ	<u>115</u>	1.13	<u>15</u>	<u>130</u>
Total Healthcare Systems Employment*	<u>201</u>		<u>32</u>	<u>233</u>
2013 Construction Employment	<u>130</u>	1.22	<u>29</u>	<u>159</u>
Total 2014 ESTIMATED Employment	<u>331</u>		<u>61</u>	<u>392</u>

SOURCE: Local employment data and construction data provided by McKenzie County Healthcare Systems, Inc.; employment multipliers from IMPLAN data and construction employment derived from IMPLAN data, Minnesota IMPLAN Group, Inc.

* Assumption is that operations employment for 2014 is the same as 2013.

McKenzie County Healthcare Systems, Inc. has total direct employment impact of 201 employees from operations; these direct operations jobs generate secondary employment impact of 32 employees and total employment impact of 233 employees. These are the employment impacts from operations for 2013.

The 2013 construction activities resulted in direct construction employment of 34 jobs. These construction jobs worked directly on hospital construction activities. These construction companies and construction workers also have secondary impacts that are measured by multipliers. The construction employment multiplier for McKenzie County is 1.22. Thus, seven secondary jobs are created in other businesses due to construction activities of McKenzie County Healthcare Systems, Inc. Total employment impact from hospital construction activities in 2013 are 41. *In 2013, combined operations and construction activities of McKenzie County Healthcare Systems, Inc. generated direct employment impact of 235 jobs, secondary employment impact of 39 jobs, and total employment impact of 274 jobs in McKenzie County.*

Using the assumption that the operations employment for McKenzie County Healthcare Systems Inc. will remain the same in 2014 and that the multipliers will remain the same in 2014, the employment impact was estimated for 2014 (**Table 11**). *For 2014, the employment impact from both operations and construction for McKenzie County Healthcare Systems, Inc. would be 331 direct employees and 61 secondary employees, for a total employment impact of 392 employees.*

Data on the income impact of McKenzie County Healthcare Systems, Inc. are presented in **Table 12**. McKenzie County Healthcare Systems, Inc. reported income from hospital operations of \$2.3 million in 2013. Using the hospital income multiplier of 1.14, the hospital sector generated secondary income in other businesses of \$0.3 million and total income impact

Table 12
Income Impact of McKenzie County Healthcare Systems, Inc., 2013 and 2014

Health Care Component	Income (Wages, Salaries, and Benefits)	Income Multiplier	Secondary Income Impact	Total Income Impact
2013 Operations Income				
Hospital	\$2,254,820	1.14	\$315,675	\$2,570,495
Physician Clinic	\$964,087	1.13	\$125,331	\$1,089,418
GSH/WC/HZ	<u>\$2,057,216</u>	1.32	<u>\$658,309</u>	<u>\$2,715,525</u>
Total Operations Income	<u>\$5,276,123</u>		<u>\$1,099,315</u>	<u>\$6,375,438</u>
2013 Construction Income	<u>\$2,988,167</u>	1.12	<u>\$358,580</u>	<u>\$3,346,747</u>
Total 2013 Combined Income	<u>\$8,264,290</u>		<u>\$1,457,895</u>	<u>\$9,722,185</u>
2014 ESTIMATED Operations Income*				
Hospital	\$2,254,820	1.14	\$315,675	\$2,570,495
Physician Clinic	\$964,087	1.13	\$125,331	\$1,089,418
GSH/WC/HZ	<u>\$2,057,216</u>	1.32	<u>\$658,309</u>	<u>\$2,715,525</u>
Total Operations Income	<u>\$5,276,123</u>		<u>\$1,099,315</u>	<u>\$6,375,438</u>
2014 Construction Income	<u>\$11,425,344</u>	1.12	<u>\$1,371,041</u>	<u>\$12,796,385</u>
Total 2014 ESTIMATED Combined Income	<u>\$16,701,467</u>		<u>\$2,470,356</u>	<u>\$19,171,823</u>

SOURCE: Local income (wages, salaries, and benefits) data and construction data provided by McKenzie County Healthcare Systems, Inc.; income multipliers from IMPLAN data and construction income derived from IMPLAN data, Minnesota IMPLAN Group, Inc.

* Assumption is that operations income for 2014 is the same as 2013 and that the multipliers will remain the same in 2014.

of \$2.6 million. The income multiplier for the physician sector is 1.13. After applying the physician income multiplier to the \$1.0 million direct physician clinic income, secondary physician income impact is \$0.1 million and total physician income impact is \$1.1 million (Table 12). The income multiplier for the other health and medical services sector is 1.32. After applying the “other” income multiplier to the \$2.1 million direct GSH/WC/HZ income, the secondary “other” income impact is \$0.7 million and the total “other” income impact is \$2.7 million (Table 12). *For 2013, the income impact from operations for McKenzie County Healthcare Systems, Inc. is \$5.3 million direct income impact and \$1.1 million secondary income impact, for a total income impact of \$6.4 million.*

Income generated directly by construction workers engaged in hospital construction activities in 2013 is estimated at \$3.0 million. With a construction income multiplier of 1.12, hospital construction activities in 2013 were estimated to generate \$0.4 million in income in other businesses (Table 12). *From hospital construction activities in 2013, McKenzie County Healthcare Systems, Inc. generated direct income impact of \$3.0 million and secondary income impact of \$0.4 million, for a total income impact of \$3.3 million. In 2013, combined operations and construction activities of McKenzie County Healthcare Systems, Inc. generated \$8.3 million in direct income impact, \$1.5 million in secondary income impact, and \$9.7 million in total income impact in McKenzie County.*

Using the assumption that the operations income for McKenzie County Healthcare Systems Inc. will remain the same in 2014 and that the multipliers will remain the same in 2014, the income impact was estimated for 2014 (Table 12). *For 2014, the income impact from both operations and construction for McKenzie County Healthcare Systems, Inc. would be \$16.7*

million direct income impact and \$2.5 million secondary income impact, for a total income impact of \$19.2 million.

Summary

McKenzie County Healthcare Systems, Inc. has significant impacts on the economy of McKenzie County in North Dakota. From operations, McKenzie County Healthcare Systems, Inc. employs 201 full- and part-time employees and generates \$5.3 million in income (wages, salaries, benefits). When the secondary benefits are included, the total employment impact from operations is 233 jobs and the total income impact is \$6.4 million. These economic impacts are critical to the economy of McKenzie County. The employment and income impacts from operating activities are annual and will continue each and every year that McKenzie County Healthcare Systems, Inc. remains in operation in the future. These are long term economic benefits to the local economy.

The construction activities of McKenzie County Healthcare Systems, Inc. vary year to year but also have significant impacts on the economy of McKenzie County. During 2013, McKenzie County Healthcare Systems, Inc. has construction of \$4.8 million, resulting in 34 construction employees with income of \$3.0 million. The total impact of construction for 2013 is 41 employees and \$3.3 million in income. Construction activities only occur during the year of construction. The total impact of McKenzie County Healthcare Systems, Inc. in 2013 from both operations and construction is 274 employees and \$9.7 million income.

During 2014, McKenzie County Healthcare Systems, Inc. has estimated construction to be \$18.3 million, resulting in 130 construction employees with income of \$11.4 million. The assumption is made that the 2014 operations employment and income will remain the same as 2013 and that the multipliers in 2014 will be the same as the multipliers in 2013. Based on these assumptions, the total impact of McKenzie County Healthcare Systems, Inc. from both operations and construction for 2014 is 392 employees and \$19.2 million in income.

Construction activities only occur during the year of construction.

The fact that McKenzie County Healthcare Systems, Inc. provides quality care with outstanding technology enhances the opportunity to attract new business and industry to the local economy. This could, in turn, result in new jobs and new families moving into the area. Also, research clearly states that retirees are attracted to communities with quality health care services. All of these factors illustrate that McKenzie County Healthcare Systems, Inc. is critically important to the economic growth of McKenzie County. Given this, not only do health care services contribute to the health and wellness of the residents but, also, to the overall strength of the economy of McKenzie County.

APPENDIX A

**IMPLAN Software and Data
from Minnesota IMPLAN Group, Inc. (MIG):**

**Model and Data Used
to Derive Multipliers**

**IMPLAN Software and Data from Minnesota IMPLAN Group, Inc. (MIG):
Model and Data Used to Derive Multipliers**

A Review of Input-Output Analysis

Input-output (I/O) (Miernyk, 1965) was designed to analyze the transactions among the industries in an economy. These models are largely based on the work of Wassily Leontief (1936). Detailed I/O analysis captures the indirect and induced interrelated circular behavior of the economy. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis gives expression to the general economic equilibrium system. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis also assumes that average and marginal I/O coefficients are equal.

Nonetheless, the framework has been widely accepted and used. I/O analysis is useful when carefully executed and interpreted in defining the structure of an area, the interdependencies among industries, and forecasting economic outcomes.

The I/O model coefficients describe the structural interdependence of an economy. From the coefficients, various predictive devices can be computed, which can be useful in analyzing economic changes in a state, an area or a county. Multipliers indicate the relationship between some observed change in the economy and the total change in economic activity created throughout the economy.

The basis of IMPLAN was developed by the U. S. Forest Service to construct input/output accounts and models. The complexity of this type of modeling had hindered practitioners from constructing models specific to a community requesting an analysis. The

University of Minnesota utilized the U.S. Forest Service model to further develop the methodology and expand the data sources to form the model known as IMPLAN. The founders of IMPLAN, Scott Lindall and Doug Olson, joined the University of Minnesota in 1984 and, as an outgrowth of their work with the University of Minnesota, entered into a technology transfer agreement with the University of Minnesota that allowed them to form Minnesota IMPLAN Group, Inc. (MIG).

Minnesota IMPLAN Group, Inc. (MIG) – IMPLAN Software and Data

At first, MIG focused on database development and provided data that could be used in the Forest Service version of the software. In 1995, MIG took on the task of writing a new version of the IMPLAN software from scratch that extended the previous Forest Service version by creating an entirely new modeling system – an extension of input-output accounts and resulting Social Accounting Matrices (SAM) multipliers. Version 2 of the new IMPLAN software became available in May of 1999. MIG has continued to develop the software and now has available IMPLAN Version 3 Software System, the new economic impact assessment software system.

With IMPLAN Version 3 software, MIG changed the packaging of products. Versions 3 utilizes 2007 or later data. When data are ordered, the data cost plus shipping are your only costs. Version 3.0 software and the new IMPLAN appliance are included in the cost of the data. There are no additional fees to upgrade to IMPLAN Version 3.0. Data files are licensed to an individual user. Version 2 is no longer compatible with 2008 and later data sets.

Version 3 allows the user to do much more detailed analyses. Users can continued to create detailed economic impact estimates. Version 3.0 takes the analysis further, providing a new method for estimating regional imports and exports is being implemented - a trade model. IMPLAN can construct a model for any state, region, area, county, or zip code area in the United States by

using available national, state, county, and zip code level data. Impact analysis can be performed once a regional input/output model is constructed.

For more information about Minnesota IMPLAN Group, Inc., contact MIG by phone at 651-439-4421, by email at info@implan.com, or review their website at www.implan.com.

IMPLAN Multipliers

Five different sets of multipliers are estimated by IMPLAN, corresponding to five measures of regional economic activity. These are: total industry output, personal income, total income, value added, and employment. Two types of multipliers are generated. Type I multipliers measure the impact in terms of direct and indirect effects. Direct impacts are the changes in the activities of the focus industry or firm, such as the closing of a hospital. The focus business changes its purchases of inputs as a result of the direct impacts. This produces indirect impacts in other business sectors. However, the total impact of a change in the economy consists of direct, indirect, and induced changes. Both the direct and indirect impacts change the flow of dollars to the households. Subsequently, the households alter their consumption accordingly. The effect of the changes in household consumption on businesses in a community is referred to as an induced effect. To measure the total impact, a Type II (or Type SAM) multiplier is used. The Type II multiplier compares direct, indirect, and induced effects with the direct effects generated by a change in final demand (the sum of direct, indirect, and induced divided by direct).

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