The Economic Impact of West River Health Services on Adams County, North Dakota

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Medical facilities have a tremendous medical and economic impact on the county in which they are located. This is especially true with health care facilities, such as hospitals and long-term care facilities. These facilities not only employ a number of people and have a large payroll, but they also draw into the community or county a large number of people from rural areas that need medical services. The overall objective of this study is to illustrate the economic impact of West River Health Services on Adams 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 demographic and economic data for Adams County, North Dakota;
3. Summarize the direct economic activities of West River Health Services;
4. Present concepts of county economics and multipliers; and
5. Estimate the economic impact of West River Health Services on Adams County, North Dakota.

No recommendations will be made in this report.

Health Services and Rural Development

The nexus 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 can also create jobs in the local area.

Services that Impact Rural Development

Type of Growth	Services Important to Attract Growth
Industrial and Business	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 industrial and business 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 are 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 (e.g., moderate climate and outdoor activities) that enable them to be in a good position to attract and retain retirees. 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 sustainability. ***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 6.9 percent and increased to 17.9 percent in 2016;
- Per capita health expenditures increased from $355 in 1970 to $10,348 in 2016;

Table 1
United States Health Expenditures and Employment Data
1970-2016; Projected for 2017-2026

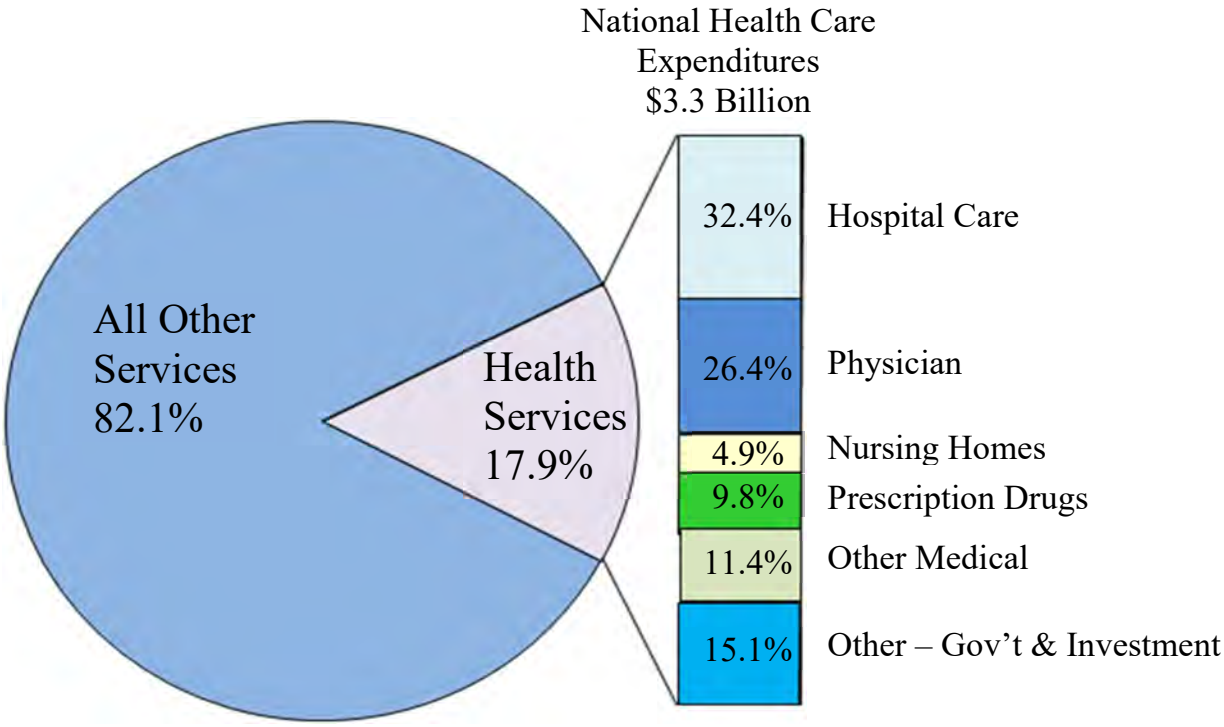
Year	Total Health Expenditures ($Billions)	Per Capita Health Expenditures ($)	Health as % of GDP (%)	Health Sector Employment (000)	Avg Annual Increase in Employment (%)
Historical					
1970	$74.6	$355	6.9%	3,052 [a]	
1980	255.3	1,108	8.9%	5,278 [a]	7.3%
1990	721.4	2,843	12.1%	8,211 [a]	5.6%
2000	1,369.1	4,855	13.3%	10,858 [a]	3.2%
2010	2,598.8	8,412	17.4%	13,777 [b]	2.7%
2011	2,689.3	8,644	17.3%	14,026 [b]	1.8%
2012	2,797.3	8,924	17.3%	14,282 [b]	1.8%
2013	2,879.0	9,121	17.2%	14,492 [b]	1.5%
2014	3,026.2	9,515	17.4%	14,677 [b]	1.3%
2015	3,200.8	9,994	17.7%	15,042 [b]	2.5%
2016	3,337.2	10,348	17.9%	15,414	2.6%
				Avg Yrly Increase '10-'16	2.0%
Projections					
2017	3,498.2	10,724	18.0%		
2020	4,090.9	12,230	18.4%		
2023	4,818.5	14,024	19.0%		
2026	5,696.2	16,168	19.7%		

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov [August 2018]); U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 1960-2016 and National Health Expenditure Projections 2017-2026. (https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html [August 2018]).

[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, 2016



SOURCE: U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 2016. Available at: http://www.cms.gov/. Accessed" August 2018.

Adams County demographic and Economic Data

This study illustrates West River Health Services located in Adams County, North Dakota. **Table 2** illustrates U.S. Census Bureau data with the last two Census populations and the most current population estimates for Adams County, the cities in the county, and North Dakota.

Table 2
Population and Percent Change for Adams County, North Dakota
2000, 2010, & 2016

	2000 Population	2010 Population	2016 Estimate	% Change '00 to '10	% Change '10 to '16
Bucyrus	26	27	13	3.8%	-51.9%
Haynes	19	23	15	21.1%	-34.8%
Hettinger	1,307	1,226	1,140	-6.2%	-7.0%
Reeder	181	150	150	-17.1%	0.0%
Rest of County	1,060	917	1,030	-13.5%	12.3%
County Total	**2,593**	**2,343**	**2,348**	-9.6%	0.2%
North Dakota	**642,200**	**672,591**	**757,953**	4.7%	12.7%

SOURCE: U. S. Census Bureau (www.census.gov [August 2018]).

The data in **Table 2** show Adams County had population of 2,593 in 2000 and 2,343 in 2010, which represents a decrease of 9.6 percent; this compares to North Dakota increasing 4.7 percent over the same time period. The estimated 2016 population was 2,348 for Adams County, a slight increase of 0.2 percent from 2010; this compared to North Dakota increasing 12.7 percent from 2010 to 2016. The populations for the cities in the county are also included.

The 2010 Census populations and population projections for Adams County and North Dakota are illustrated in **Table 3**. The 2010 Census populations are from the U. S. Census Bureau and the population projections are from the "North Dakota Census Office Population

Projections of the State, Regions, and Counties 2016," published January 19, 2016, by the North Dakota Census Office within the North Dakota Department of Commerce. The population projections are shown for 2020 through 2040. The populations are projected to decrease for Adams County and to increase for North Dakota over the projected years.

Table 3
Population and Population Projections for Adams County and North Dakota, 2010 - 2040

	Adams County	North Dakota
2010 Census population	2,394	672,591
2020 Projections	2,299	824,344
2025 Projections	2,258	884,874
2030 Projections	2,207	931,506
2035 Projections	2,150	966,375
2040 Projections	2,089	991,522
% Change 2010-2020	-4.0%	22.6%
% Change 2010-2025	-5.7%	31.6%
% Change 2010-2030	-7.8%	38.5%
% Change 2010-2035	-10.2%	43.7%
% Change 2010-2040	-12.7%	47.4%

SOURCE: Census populations, U.S. Census Bureau (www.census.gov [August 2018]); Population projections, "North Dakota Census Office Population Projections of the State, Regions, and Counties 2016," published January 19, 2016. (https://www.commerce.nd.gov/census/ [August 2018]).

Tables 4a and 4b show the populations by age group and gender for Adams County, the cities in Adams County, and North Dakota for the 2000 and 2010 census years and for the 2016 estimates year. The county had two age groups that increased from 2000 to 2010; the 20-24 age group and the 45-64 age group. The state increased in the 20-24, 45-64, and 65+ age groups. The county decreased over 20 percent in the 0-14, 15-19, and 25-44 age groups. The state decreased

Table 4a
Population by Age Groups and Gender for Adams County and North Dakota, 2000, 2010, and 2016

Area	Age Groups							Gender	
	0-14	15-19	20-24	25-44	45-64	65+	Totals	Male	Female
2000 Adams Co.									
Bucyrus	1	1	3	5	12	4	26	14	12
Haynes	2	0	0	3	9	5	19	9	10
Hettinger	226	86	34	286	303	372	1,307	581	726
Reeder	15	6	6	26	58	70	181	92	89
Rest of Co	226	83	19	242	317	173	1,060	543	517
County Ttls	470	176	62	562	699	624	2,593	1,239	1,354
2000 Co. % Ttl	**18.1%**	**6.8%**	**2.4%**	**21.7%**	**27.0%**	**24.1%**	**100.0%**	**47.8%**	**52.2%**
N Dakota Ttls	129,846	53,618	50,503	174,891	138,864	94,478	642,200	320,524	321,676
2000 State % Ttl	**20.2%**	**8.3%**	**7.9%**	**27.2%**	**21.6%**	**14.7%**	**100.0%**	**49.9%**	**50.1%**
2010 Adams Co.									
Bucyrus	8	0	1	6	7	5	27	13	14
Haynes	3	0	1	3	7	9	23	12	11
Hettinger	199	62	56	241	359	309	1,226	530	696
Reeder	16	6	8	30	43	59	162	84	78
Rest of Co	127	70	21	147	354	186	905	492	413
County Ttls	353	138	87	427	770	568	2,343	1,131	1,212
2010 Co. % Ttl	**15.1%**	**5.9%**	**3.7%**	**18.2%**	**32.9%**	**24.2%**	**100.0%**	**48.3%**	**51.7%**
N Dakota Ttls	124,461	47,474	58,956	165,747	178,476	97,477	672,591	339,864	332,727
2010 State % Ttl	**18.5%**	**7.1%**	**8.8%**	**24.6%**	**26.5%**	**14.5%**	**100.0%**	**49.9%**	**50.1%**

Table 4b
Population by Age Groups and Gender for Adams County and North Dakota, 2000, 2010, and 2016

Area	Age Groups							Gender	
	0-14	15-19	20-24	25-44	45-64	65+	Totals	Male	Female
2016 Adams Co.									
Bucyrus	0	0	2	1	4	6	13	6	7
Haynes	0	1	5	0	7	2	15	6	9
Hettinger	199	72	36	292	308	233	1,140	535	605
Reeder	6	1	15	34	36	58	150	85	65
Rest of Co	177	70	82	176	301	224	1,030	555	475
County Ttls	382	144	140	503	656	523	2,348	1,187	1,161
2016 Co. % Ttl	**16.3%**	**6.1%**	**6.0%**	**21.4%**	**27.9%**	**22.3%**	**100.0%**	**49.9%**	**50.1%**
N Dakota Ttls	149,441	48,827	64,670	202,354	182,810	109,851	757,953	390,181	367,772
2016 State % Ttl	**19.7%**	**6.4%**	**8.5%**	**26.7%**	**24.1%**	**14.5%**	**100.0%**	**49.9%**	**50.1%**
Percent Change '00 to '10									
County	**-24.9%**	**-21.6%**	**40.3%**	**-24.0%**	**10.2%**	**-9.0%**	**-9.6%**	**-8.7%**	**-10.5%**
State	**-4.1%**	**-11.5%**	**16.7%**	**-5.2%**	**28.5%**	**3.2%**	**4.7%**	**6.0%**	**3.4%**
Percent Change '10 to '16									
County	**8.2%**	**4.3%**	**60.9%**	**17.8%**	**-14.8%**	**-7.9%**	**0.2%**	**5.0%**	**-4.2%**
State	**20.1%**	**2.8%**	**9.7%**	**22.1%**	**2.4%**	**12.7%**	**12.7%**	**14.8%**	**10.5%**

SOURCE: U. S. Census Bureau (www.census.gov [August 2018]).

in the 0-14, 15-19, and the 25-44 age groups. The county decreased population for both genders, and the state increased population for both genders.

From 2010 to 216, the county increased in population in all the age groups below age 45, while the state increased in all age groups. The county decreased population in the age 45 and older age groups and the state did not decrease population in any age group. The county increased for males and decreased for females. The state increased population for both genders. Data are also shown for the individual cities in Adams County.

Tables 5a and **5b** provide population by race groups and Hispanic origin for Adams County and North Dakota. Basically, Adams County and North Dakota are predominantly of the White race group. The Hispanic origin group increased for both the county and the state from 2000 to 2010. The state also increased from 2010 to 2016.

Data in **Table 6** are from the U.S. Census Bureau, County Business Patterns. The data compare the employment and payroll for the health services sector to the total of all sectors for both Adams County and North Dakota; thus, illustrating how health services employment and payroll grew over time. County health services employment increased 5.0 percent from 2006 to 2016, while county employment decreased by 5.4 percent. Health services as a percent of total county employment decreased from 42.3 percent in 2006 to 39.2 percent in 2016; this compared to the state health services portion of state employment decreasing from 15.8 percent in 2006 to 14.9 percent in 2016.

County health services payroll grew 38.0 percent from 2006 to 2016, while the total county payroll decreased by 5.4 percent. County health services as a percent of total county payroll decreased from 60.5 percent in 2006 to 49.4 percent in 2016; this compared to the state

Table 5a
U.S Census Bureau Population by Race and Hispanic Origin for Adams County and North Dakota, 2000, 2010 and 2016

	White	Black	American Indian	Asian	Native HI/ Pacific Isldr	Some Other Race	Two or More Races	Totals[1]	Hispanic Origin
2000 Adams Co									
Bucyrus	26	0	0	0	0	0	0	26	0
Haynes	17	0	0	0	0	0	2	19	0
Hettinger	1,291	2	5	2	1	3	3	1,307	5
Reeder	177	0	2	0	0	0	2	181	0
Rest of County	1,043	12	1	2	0	0	2	1,060	0
County Total	2,554	14	8	4	1	3	9	2,593	7
2000% of Co. Ttl	**98.5%**	**0.5%**	**0.3%**	**0.2%**	**0.0%**	**0.1%**	**0.3%**	**100.0%**	**0.3%**
State of N Dakota	593,181	3,916	31,329	3,606	230	2,540	7,398	642,200	7,786
2000 % State Ttl	**92.4%**	**0.6%**	**4.9%**	**0.6%**	**0.0%**	**0.4%**	**1.2%**	**100.0%**	**1.2%**
2010 Adams Co									
Bucyrus	27	0	0	0	0	0	0	27	0
Haynes	18	0	5	0	0	0	0	23	0
Hettinger	1,194	3	8	8	0	0	13	1,226	11
Reeder	142	5	2	0	0	0	0	149	6
Rest of County	898	0	1	1	2	4	12	918	3
County Total	2,279	8	16	9	2	4	25	2,343	20
2010 % Co. Ttl	**97.3%**	**0.3%**	**0.7%**	**0.4%**	**0.1%**	**0.2%**	**1.1%**	**100.0%**	**0.9%**
State of N Dakota	605,449	7,960	36,591	6,909	320	3,509	11,853	672,591	13,467
2010 % State Ttl	**90.0%**	**1.2%**	**5.4%**	**1.0%**	**0.0%**	**0.5%**	**1.8%**	**100.0%**	**2.0%**

Table 5b
U.S Census Bureau Population by Race and Hispanic Origin for Adams County and North Dakota, 2000, 2010 and 2016

	White	Black	American Indian	Asian	Native HI/ Pacific Isldr	Some Other Race	Two or More Races	Totals[1]	Hispanic Origin
2016 Adams Co									
Bucyrus	13	0	0	0	0	0	0	13	0
Haynes	15	0	0	0	0	0	0	15	0
Hettinger	1015	18	46	38	0	15	8	1,140	14
Reeder	142	6	2	0	0	0	0	150	6
Rest of County	1,018	0	5	0	0	0	7	1,030	0
County Total	2,203	24	53	38	0	15	15	2,348	20
2016 % Co. Ttl	**93.8%**	**1.0%**	**2.3%**	**1.6%**	**0.0%**	**0.6%**	**0.6%**	**100.0%**	**0.9%**
State of N Dakota	660,919	19,250	41,649	9,200	233	5,114	21,588	757,953	26,434
2016 % State Ttl	**87.2%**	**2.5%**	**5.5%**	**1.2%**	**0.0%**	**0.7%**	**2.8%**	**100.0%**	**3.5%**
% Chg '00 to '10									
County	**-10.8%**	**-42.9%**	**100.0%**	**125.0%**	**100.0%**	**33.3%**	**177.8%**	**-9.6%**	**185.7%**
State	2.1%	103.3%	16.8%	91.6%	39.1%	38.1%	60.2%	4.7%	73.0%
% Chg '10 to '16									
County	-3.3%	200.0%	231.3%	322.2%	-100.0%	275.0%	-40.0%	0.2%	0.0%
State	5.70%	49.10%	4.60%	30.00%	-5.00%	67.00%	36.10%	7.30%	52.70%

SOURCE: U. S. Census Bureau (www.census.gov [August 2018]).

Table 6
Health Care and Social Assistance[1] Employment and Payroll Comparisons for Adams County, North Dakota

	Employment			
	Health [1,2]	County	Hlth as % of Ttl Co.	Hlth as % of Ttl State
2006	300	710	42.3%	15.8%
2007	NA	736	NA	15.1%
2008	NA	745	NA	14.6%
2009	NA	741	NA	15.3%
2010	NA	729	NA	15.7%
2011	NA	801	NA	15.6%
2012	NA	818	NA	14.6%
2013	NA	774	NA	14.7%
2014	NA	776	NA	13.9%
2015	313	767	40.8%	13.6%
2016	315	803	39.2%	14.9%
% Chg '06 - '16	**5.0%**	**-5.4%**		
	Payroll ($1,000s)			
	Health [1,2]	County	Hlth as % of Ttl Co.	Hlth as % of Ttl State
2006	10,087	16,673	60.5%	18.8%
2007	NA	19,470	NA	17.5%
2008	NA	19,723	NA	17.4%
2009	NA	20,520	NA	18.3%
2010	NA	21,280	NA	18.1%
2011	NA	22,709	NA	17.5%
2012	NA	25,873	NA	15.8%
2013	NA	26,527	NA	15.6%
2014	NA	26,297	NA	14.6%
2015	14,206	27,632	51.4%	15.4%
2016	13,953	28,259	49.4%	16.3%
% Chg '06 - '16	**38.0%**	**-5.4%**		

SOURCE: U.S. Census Bureau, County Business Patterns (CBP); 2006-2016 data based upon NAICS (www.census.gov [August 2018]).

[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.

[2] 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).

Data were estimated by the author; CBP did not provide data to ensure the privacy of individual businesses/organizations.

health services payroll as a percentage of total state payroll decreasing from 18.8 percent in 2006 to 16.3 percent in 2016.

Data from U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (BEA) are in **Tables 7** and **8**. These tables demonstrate the importance of health services as compared to other industries in the county and state economies.

BEA data for full- and part-time employment by type of employment and major industry are presented in **Table 7**. In 2015, the county health care and social assistance sector (which includes hospitals) employed 343 people or 28.0 percent of private nonfarm county employment; this compared to the state with 13.4 percent. County health care and social assistance was the largest industry in 2015 with retail trade the second largest with 14.1 percent. In 2015, the state health care and social assistance sector was the largest state industry at 13.4 percent, with retail trade second with 13.0 percent.

In 2016, the county health care and social assistance sector (which includes hospitals) employed 347 people or 27.7 percent of private nonfarm county employment (**Table 7**); this compared to the state with 14.4 percent. County health care and social assistance was the largest industry in 2016, with retail trade the second largest with 13.3 percent. In 2016, the state health care and social assistance sector was the largest state industry at 14.4 percent and retail trade was second with 13.3 percent.

BEA data for personal income ($1,000s) by major source and industry are presented in **Table 8**. In 2015, the county health care and social assistance earnings sector (which includes hospitals) had $19.0 million in total personal income or 35.1 percent of private nonfarm earnings; this compared to the state with 13.1 percent. County health care and social assistance earnings was the largest industry in 2015, with retail trade the second largest at 14.4 percent. For

Table 7
Full- and Part-Time Employment by Type of Employment and by Major Industry[1]
for Adams County and North Dakota, 2015 and 2016

Categories	2015			2016			'15-'16	'15-'16
	Adams Co.		State	Adams Co.		State	County	State
	No. of Jobs	%	%	No. of Jobs	%	%	% Chg	% Chg
Total FT & PT	1,775	100.0%	100.0%	1,791	100.0%	100.0%	0.90%	-3.10%
Wage & Salary	1,056	59.5%	78.7%	1,067	59.6%	77.6%	1.00%	-4.40%
Proprietors	719	40.5%	21.3%	724	40.4%	22.4%	0.70%	1.60%
Farm proprs'	335	46.6%	20.6%	333	46.0%	20.2%	-0.60%	-0.70%
Nonfarm proprs' [2]	384	53.4%	79.4%	391	54.0%	79.8%	1.80%	2.20%
By Industry:								
Farm empl	386	21.7%	5.3%	381	21.3%	5.3%	-1.30%	-1.60%
Nonfarm empl	1,389	78.3%	94.7%	1,410	78.7%	94.7%	1.50%	-3.20%
Private	1,225	88.2%	84.6%	1,252	88.8%	83.8%	2.20%	-4.10%
For/fshng/related	11	0.9%	1.0%	11	0.9%	1.0%	0.00%	-1.10%
Mining	61	5.0%	6.3%	53	4.2%	4.9%	-13.10%	-25.70%
Utilities	10	0.8%	0.8%	9	0.7%	0.9%	-10.00%	1.00%
Construction	66	5.4%	9.2%	68	5.4%	8.9%	3.00%	-7.20%
Manufacturing	46	3.8%	5.6%	44	3.5%	5.7%	-4.30%	-3.00%
Wholesale trade	63	5.1%	6.0%	77	6.2%	5.8%	22.20%	-6.90%
Retail trade	173	14.1%	13.0%	167	13.3%	13.3%	-3.50%	-2.00%
Transp/wrhsng	64	5.2%	5.8%	56	4.5%	5.1%	-12.50%	-14.90%
Information	23	1.9%	1.5%	27	2.2%	1.6%	17.40%	0.30%
Finance & ins	68	5.6%	5.6%	71	5.7%	5.9%	4.40%	-0.20%
RE/rent/leasing	32	2.6%	5.0%	34	2.7%	5.2%	6.30%	0.90%
Prof /techn svcs	34	2.8%	5.0%	38	3.0%	5.1%	11.80%	-1.90%
Mgmt/cos/enterp	0	0.0%	1.2%	0	0.0%	1.2%	0.00%	-0.40%
Adm/waste svcs	25	2.0%	3.8%	24	1.9%	3.8%	-4.00%	-5.40%
Educ svcs	5	0.4%	1.3%	5	0.4%	1.4%	0.00%	3.90%
Hlth care/soc asst	343	28.0%	13.4%	347	27.7%	14.4%	1.20%	2.50%
Art/entert/rec	15	1.2%	1.6%	19	1.5%	1.7%	26.70%	2.50%
Accom/food svc	82	6.7%	8.1%	89	7.1%	8.2%	8.50%	-3.00%
Other/not pub adm	104	8.5%	5.8%	113	9.0%	6.0%	8.70%	-0.70%
Govt/govt entrprs	164	11.8%	15.4%	158	11.2%	16.2%	-3.70%	2.00%

SOURCE: U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [August 2018]).
[1] The estimates are based on the North American Industry Classification System (NAICS).
[2] Excludes limited partners
Original BEA data was not provided to ensure privacy; the author has provided estimates.
Original BEA data was not provided since the total was less than 10 jobs; the author has provided estimates.

Table 8
Personal Income ($1,000s) by Major Source and Industry[1]
for Adams County and North Dakota, 2015 and 2016

	2015			2016			'15-'16	'15-'16
	Adams Co.		State	Adams Co.		State	County	State
Categories	Income	Percent	Percent	Income	Percent	Percent	% Chg	% Chg
TTl Pers Income	107,046	100.0%	100.0%	106,762	100.0%	100.0%	-0.3%	-1.4%
Ttl by plc of wrk	65,738	61.4%	78.4%	65,402	61.3%	77.3%	-0.5%	-2.8%
Wage/Salary	40,579	37.9%	55.8%	40,676	38.1%	52.5%	0.2%	-7.4%
Proprs' income[2]	15,802	38.9%	13.0%	14,321	35.2%	15.3%	-9.4%	14.1%
Other	9,357	23.1%	15.8%	10,405	25.6%	16.9%	11.2%	4.1%
By Industry								
Farm	4,471	6.8%	2.1%	2,747	4.2%	3.9%	-38.6%	82.6%
Nonfarm	61,267	93.2%	97.9%	62,655	95.8%	96.1%	2.3%	-4.6%
Private	54,191	88.5%	83.5%	55,432	88.5%	82.0%	2.3%	-6.3%
For/fishing/related	206	0.4%	0.7%	210	0.4%	0.8%	1.9%	10.0%
Mining	2,165	4.0%	11.6%	2,375	4.3%	8.7%	9.7%	-29.7%
Utilities	566	1.0%	1.9%	580	1.0%	2.1%	2.5%	7.4%
Construction	4,454	8.2%	12.7%	4,442	8.0%	12.8%	-0.3%	-5.7%
Manufacturing	2,242	4.1%	6.5%	2,066	3.7%	6.9%	-7.9%	-1.7%
Wholesale trade	6,012	11.1%	8.5%	6,800	12.3%	8.2%	13.1%	-10.4%
Retail trade	7,829	14.4%	8.0%	6,807	12.3%	8.1%	-13.1%	-4.7%
Transp/wrhsng	1,925	3.6%	8.2%	1,973	3.6%	7.2%	2.5%	17.6%
Information	251	0.5%	1.8%	253	0.5%	2.1%	0.8%	6.4%
Finance & ins	2,291	4.2%	5.2%	2,418	4.4%	5.8%	5.5%	4.9%
RE/rent/leasing	298	0.5%	3.4%	482	0.9%	3.7%	61.7%	3.3%
Prof/techn svcs	1,288	2.4%	5.9%	1,519	2.7%	5.9%	17.9%	-5.9%
Mgmt/cos/enterp	0	0.0%	1.9%	0	0.0%	1.9%	0.0%	-3.1%
Admin/waste svcs	756	1.4%	2.6%	704	1.3%	2.7%	-6.9%	-4.1%
Educ svcs	63	0.1%	0.5%	0	0.0%	0.6%	0.0%	8.1%
Hlth care/soc asst	19,009	35.1%	13.1%	19,047	34.4%	14.8%	0.2%	5.5%
Art/entert/rec	115	0.2%	0.4%	119	0.2%	0.4%	3.5%	6.7%
Accom/food svcs	852	1.6%	3.2%	868	1.6%	3.2%	1.9%	-6.5%
Other/not pub adm	3,872	7.1%	3.9%	4,682	8.4%	4.1%	20.9%	-1.9%
Govt/govt entrprs	7,076	11.5%	16.5%	7,223	11.5%	18.0%	2.1%	4.0%

SOURCE: U. S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [August 2018]).
[1] The estimates are based on the North American Industry Classification System (NAICS).
[2] Proprietors' income includes the inventory valuation.
Original BEA data was not provided to ensure privacy; the author has provided estimates.

the state, health care and social assistance was the largest industry (13.1 percent) and construction was second largest (12.7 percent).

In 2016, the county health care and social assistance earnings sector (which includes hospitals) again had $19.0 million in total personal income or 34.4 percent of private nonfarm earnings; this compared to the state at 14.8 percent (**Table 8**). In 2016, county health care and social assistance was the largest county industry with 34.4 percent and retail trade and wholesale trade were tied for second largest with 12.3 percent each. The state health care and social assistance earnings sector was the largest state industry at 14.8 percent, with construction second at 12.8 percent.

Basic economic indicators of Adams County, North Dakota, and United States economies are illustrated in **Table 9**. Based on BEA data, the 2016 per capita income for Adams County of $46,318 was lower than North Dakota ($54,627) and the United States ($49,246). The employment and labor force data are from the U.S. Department of Labor, Bureau of Labor Statistics. The unemployment rate for Adams County was 2.4 percent for 2017, which was lower than the state rate (2.6 percent) and the national rate (4.4 percent). In July 2018, the unemployment rate for Adams County decreased to 1.3 percent, which was lower than the state (2.3 percent) and the nation (3.9 percent).

From the U. S. Census Bureau, the percent of all people in poverty in the county was 9.6 percent in 2016, as compared to 10.5 percent for the state and 14.0 percent for the nation (**Table 9**). However, the percent of children under age 18 in poverty was higher for all three; 9.9 percent for the county, 11.9 percent for the state, and 19.5 percent for the nation.

Transfer receipts are the state and federal government payments that are paid within an entity; i.e., county, state, or nation. Transfer receipts include social security, Medicare, Medicaid,

Table 9
Economic Indicators for Adams County,
North Dakota and the United States

Indicator	Adams Co.	N. Dakota	U.S.
Total Personal Income (2016)	$106,762,000	$41,404,978,000	$15,912,777,000,000
Per Capita Income (2016)	$46,318	$54,627	$49,246
Employment (2017)	1,095	403,610	146,624,000
Unemployment (2017)	27	10,789	6,982,000
Unemployment Rate (2017)	2.4%	2.6%	4.4%
Employment (Jul 2018)	1,114	397,921	157,004,000
Unemployment (Jul 2018)	15	9,211	7,127,000
Unemployment Rate (Jul 2018)	1.3%	2.3%	3.9%
% of All People in Poverty (2016)	9.6%	10.5%	14.0%
% of Under 18 in Poverty (2016)	9.9%	11.9%	19.5%
Transfer Receipts (2016)	$24,872,000	$5,520,871,000	$2,768,331,000,000
Transfer Receipts as Percentage of Total Personal Income (2016)	23.3%	13.3%	17.4%
Xfer Rcpts Subcategories:			
Medicare (2016)	$6,350,000	$1,145,733,000	$655,856,000,000
% of Total Xfer rcpts	25.5%	20.8%	23.7%
Medicaid (2016)	$5,501,000	$981,589,000	$574,496,000,000
% of Total Xfer rcpts	22.1%	17.8%	20.8%

SOURCES: Bureau of Labor Statistics (www.bls.gov [August 2018]); U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [August 2018]); U.S. Census Bureau (www.census.gov [August 2018]).

unemployment, etc. This percent is an indication of how many people rely on federal and state funds for personal income. From BEA 2016 data, transfer receipts as a percentage of total personal income for the county were 23.3 percent; this was higher than the state at 13.3 percent and the nation at 17.4 percent (**Table 9**). Two subcategories of transfer receipts (Medicare and Medicaid) are also shown in **Table 9**; the county had a higher percent than the state and nation for Medicare and Medicaid.

Direct Economic Activities of West River Health Services

West River Health Services provides hospital services and long term care services in Adams County. West River Health Services not only impact the quality of life of their patients, but also impact the economy of Adams County. The direct economic activities of West River Health Services include the employees and their wages, salaries, and benefits. This will be further illustrated for hospital operations and for long term care operations. Construction impact will be provided for 2018, the most recent year of construction activities. Construction will include the employment and wages, salaries, and benefits of the construction workers and proprietor income from the construction ownership.

From **Table 10**, the total direct employment includes total full-time, part-time, and contractual employees. The hospital has 287 direct employees and long term care has 79 direct employees, for a total of 366 direct employees. These employees generate wages, salaries, and benefits and contractual compensation (labor income) in the amount of $18.4 million for the hospital and $3.3 million for long term care, for a combined total of $21.7 million. These are the direct impacts from the operations of West River Health Services on the Adams County economy.

The economic impact of construction activities can also be measured for employment and labor income. These activities only occur during the year of construction, while operations occur each and every year that West River Health Services continues to operate. In 2018, construction activities were $454,805; the construction generated three jobs with labor income of $204,488. The employment and labor income were estimated based on ratios and coefficients derived from IMPLAN data. These are the direct impacts from construction activities of West River Health Services.

Combining operations and construction, the total direct employment impact was 369 and the total labor income impact was $21.9 million.

Table 10
Direct Economic Activities
of West River Health Services on Adams County, North Dakota, 2018

FROM OPERATIONS		
	Employment	**Labor Income**
Hospital Operations	287	$18,411,733
Long Term Care Operations	79	$3,308,275
Total	**366**	**$21,720,008**

FROM CONSTRUCTION			
	Amount	**Employment**	**Labor Income**
Construction Activities	$454,805	**3**	**$204,888**

COMBINED DIRECT ECONOMIC ACTIVITIES		
	Employment	**Labor Income**
Total Combined Operations and Construction	**369**	**$21,924,896**

SOURCE: Hospital operations data and total construction data from West River Health Services, 2018; Construction employment and labor income derived utilizing IMPLAN data for Adams County, North Dakota (www.implan.com [2018]).

The direct impacts of West River Health Services, measured by employment and labor income, are only a portion of the total impact. There are additional economic impacts created as West River Health Services and its employees spend money and as West River Health Services construct additional facilities. These are known as secondary impacts and are measured by multipliers using an input-output model and data from IMPLAN (the model and data are further discussed in **Appendix A**). This model is widely used by economists and other academics

across the U. S. A brief description of the input-output model and the multiplier effect is included here.

Concepts of County Economics and Multipliers

The direct impacts of West River Health Services, measured by output, employment and labor income, are only a portion of the total impact. There are additional economic impacts created as the employees of the hospital and long term care services spend money and as the hospital and long term care services as businesses spend money. These are known as secondary impacts and are measured by multipliers using an input-output model and data from IMPLAN (the model and data are further discussed in **Appendix A**). This model is widely used by economists and other academics across the U. S.

A brief description of the input-output model and the multiplier effect is included and illustrated in **Figure 2**. **Figure 2** illustrates the major flows of goods, services, and dollars of any economy. The businesses which sell some or all of their goods and services to buyers outside of the county are the foundation of a county's 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 of 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**). It is evident from the interrelationships shown in **Figure 2** 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 sector will no longer pay employees and the dollars going to households will stop. Likewise, the hospital will not purchase

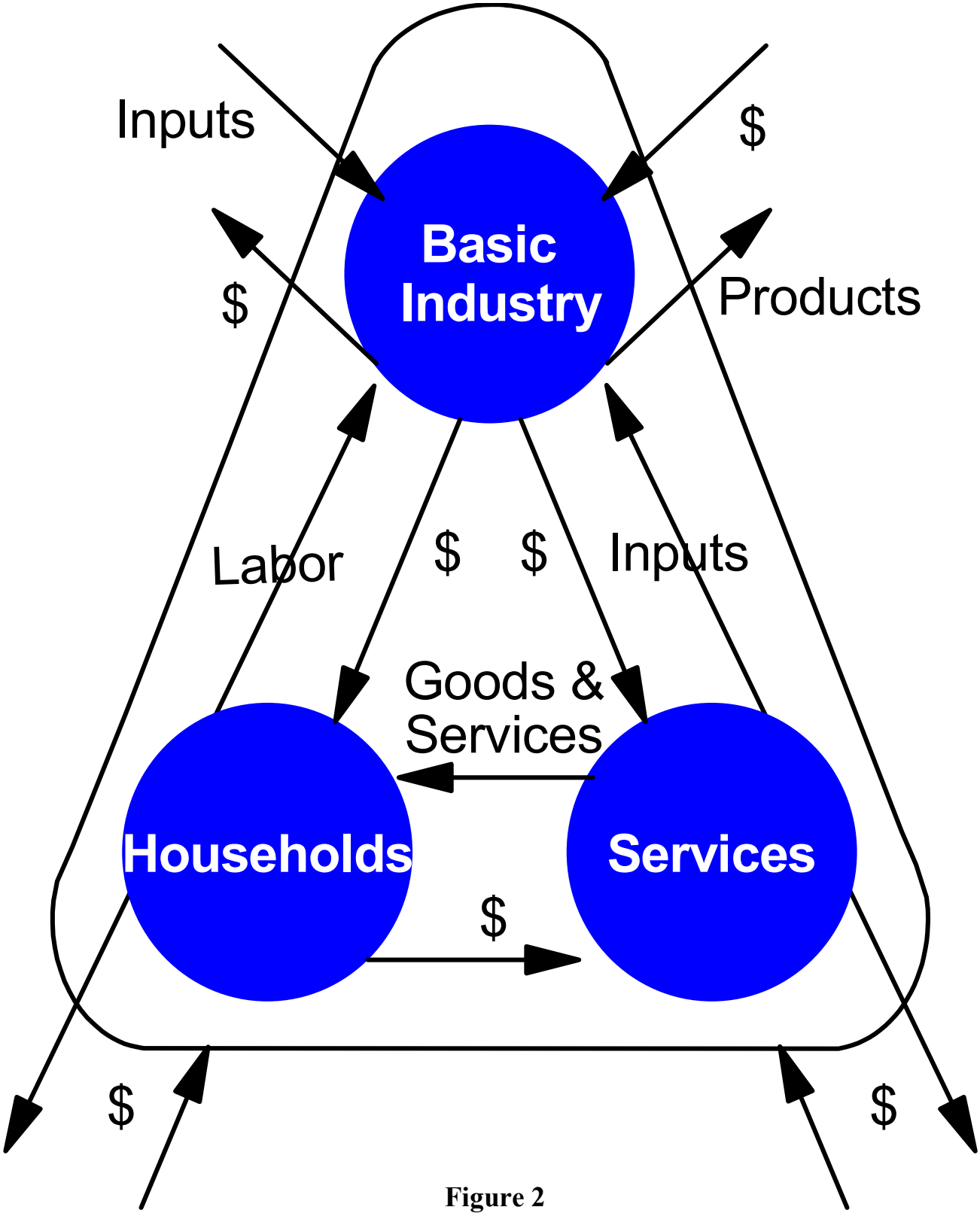


Figure 2
County Economic System

goods from other businesses, and the 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.

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 also 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. The same concept applies to labor income and output multipliers.

The Economic Impact of West River Health Services

The impacts of West River Health Services are presented in **Table 11**. Direct employment and labor income for operations were obtained from West River Health Services. The multipliers specific to Adams County, North Dakota, were derived from IMPLAN data.

Employment Impact of West River Health Services

The hospital employs 287 employees (**Table 11**). The hospital employment multiplier is 1.40; this means for every job in the hospital sector, another 0.40 job is created in other sectors (businesses) in Adams County. The secondary employment generated in Adams County from the hospital sector is estimated to be 115 jobs. The hospital had a total impact of 402 jobs on the local economy of Adams County. With an employment multiplier of 1.19 for long term care, the total long term care employment impact is 94 jobs; this includes direct jobs of 79 and secondary jobs of 15. The total impact from West River Health Services operations was 496 jobs in Adams County in 2018; this includes 366 direct jobs and 130 secondary jobs.

The employment and labor income impacts from the 2018 estimated construction activities of West River Health Services are also shown in **Table 11**. From the $454,805 in construction activities, estimated direct employment was three jobs; direct employment was derived from IMPLAN data. With a construction employment multiplier of 1.38, the construction activities generated direct employment impact of three jobs, secondary employment impact of one job, and total employment impact of four jobs.

The combined construction and operations employment impact was 369 direct employees, 131 secondary employees and 500 total employment impact for West River Health

Table 11
Impact of West River Health Services on Adams County, North Dakota, 2018

	Employment Impact			
	Direct Impact	***Multiplier***	***Secondary Impact***	***Total Impact***
Operations				
Hospital	287	1.40	115	402
Long Term Care	79	1.19	15	94
Operations Total	366		130	496
Construction				
2018	3	1.38	1	4
Combined Total	**369**		**131**	**500**
	Labor Income Impact*			
	Direct Impact	***Multiplier***	***Secondary Impact***	***Total Impact***
Operations				
Hospital	$18,411,733	1.27	$4,912,522	$23,324,255
Long Term Care	$3,308,275	1.22	$738,324	$4,046,599
Operations Total	$21,720,008		$5,650,846	$27,370,854
Construction				
2018 Construction	$204,888	1.25	$51,222	$256,110
Combined Total	**$21,924,896**		**$5,702,068**	**$27,626,964**

Total State and Local Tax Impact from West River Health Services on Adams County, ND, 2018

Category	***Total Impact***
State and Local Sales Tax Impact	$437,727
State and Local Property Tax Impact	$165,087
State and Local Motor Vehicle License Impact	$44,889
All Other State and Local Tax Impacts	$931,078
Total State and Local Tax Impacts	**$1,578,781**

Total Federal Tax Impact from West River Health Services on Adams County, ND, 2018

Category	***Total Impact***
Total Federal Tax Impacts	**$5,790,601**

SOURCES: Direct operations impacts from West River Health Services, 2018; Construction employment and labor income derivations, derivations of multipliers, state and local tax impacts, and federal tax impacts from IMPLAN (www.implan.com [2018]).

services in 2018. Construction impacts are only during the year of construction, while operation impacts continue each and every year that West River Health Services remain in operation.

Labor Income Impact of West River Health Services

Data obtained from West River Health Services indicate that direct labor income for the hospital was $18.4 million. Using the hospital labor income multiplier of 1.27 derived from IMPLAN, West River Health Services generated secondary labor income impact of $4.9 million and total labor income impact of $23.3 million. Using the long term care labor income multiplier, long term care had direct labor income impact of $3.3 million, secondary labor income impact of $0.7 million, and total labor income impact of $4.0 million. For the combined operations of the hospital and long term care services, West River Health Services had direct labor income impact of $21.7 million, secondary labor income impact of $5.7 million, and total labor income impact of $27.4 million.

In 2018, the construction activities are estimated to generate $204,888 direct labor income impact, $51,222 secondary labor income impact, and $256,110 total labor income impact. Combining the operations and construction labor income impacts resulted in combined direct labor income impact of $21.9 million, combined secondary labor income impact of $5.7 million, and combined total labor income impact of $27.6 million.

Tax Impacts of West River Health Services

IMPLAN also provides data on the state and local tax impacts and the federal tax impacts resulting from the combined operations and construction impacts of West River Health Services. For West River Health Services in 2018, state and local sales tax impact was $437,727, state and local property tax impact was $165,087, state and local motor vehicle license impact was $44,889, and all other state and local taxes were $931,078. ***The total state and local tax impacts were $1.6 million for West River Health Services in 2018. The total federal tax impacts from the West River Health Services were $5.8 million.*** More detailed information on the state and

local tax impacts and the federal tax impacts for West River Health Services are included in **Appendix B**.

Summary

Both the operation activities and construction activities of West River Health Services have an impact on the economy of Adams County. Often overlooked are the economic impacts created from construction activities. This report measures the impact that West River Health Services had on the Adams County economy for both operations and construction, based on data for the latest fiscal year, 2018. The operating impact occurs every year; whereas, when construction occurs, the construction impact occurs only during the construction year.

West River Health Services reported direct employment of 287 full-time, part-time, and contractual employees and $18.4 million in direct labor income (wages, salaries, and benefits and contract labor income) for hospital operations. Long term care operations had 79 direct employees and labor income of $3.3 million. When the secondary impacts are included, the total combined operations employment impact of West River Health Services was 496 jobs and the total combined labor income impact was $27.4 million.

Construction impact can be measured in the year the construction occurs; these impacts only occur only during the construction period. During 2018, West River Health Services had estimated construction of $454,805. The estimated direct employment impact from this construction was three employees, with direct labor income impact of $256,110.

The combined total from operations and construction was 369 direct employment impact, 131 secondary employment impact, and 500 total employment impact. For labor income, the

combined operations and construction impacts resulted in direct labor income impact of $21.9 million, secondary labor income impact of $5.7 million, and total labor income impact of $27.6 million. From both operations and construction, the total state and local tax impacts generated were $1.6 million and the total federal tax impacts, $5.8 million. The employment and labor income impacts, and a portion of the state and local taxes, and federal taxes from operating activities are annual and will continue each and every year that West River Health Services operate in the future; these are long term economic benefits of West River Health Services. The construction impacts only occur during the year of construction.

The impacts generated by West River Health Services contribute to the local economy of Adams County. The hospital and long term care services generate revenues in the local economy. The hospital and long term care services spend revenues in the local economy and pay their employees. The hospital and long term care services and their employees spend money in Adams County and generate a secondary impact. The hospital and long term care services and their employees also generate a tremendous amount of state and local taxes, and federal taxes in Adams County. If the hospital and long term care services increase or decrease in size, the medical health of Adams County residents as well as the economic health of Adams County can be affected. For the attraction of industrial firms, businesses, and retirees, the local area should have quality hospital and long term care services. Quality hospital and long term care services can contribute to the overall economic health of Adams County, as well as the overall medical health of the Adams County residents. Given this, not only does West River Health Services contribute to the health and wellness of the local residents but West River Health Services also contributes to the overall economic strength of Adams County.

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Appendix A

IMPLAN Software and Data:

Model and Data Used to Derive Multipliers

APPENDIX A
IMPLAN Software and Data from IMPLAN Group, LLC: 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).

In 2013, Minnesota IMPLAN Group, Inc. was purchased by IMPLAN Group, LLC. In 2015, IMPLAN Group, LLC became IMPLAN and relocated to:

IMPLAN
16905 Northcross Drive, Suite 120
Huntersville, NC 28078

IMPLAN can be reached by phone at 800-507-9426.

IMPLAN Software and Data

At first, IMPLAN focused on database development and provided data that could be used in the Forest Service version of the software. In 1995, IMPLAN 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. The latest development of the software is now available, IMPLAN Version 3 Software System, the new economic impact assessment software system.

With IMPLAN Version 3 software, the packaging of products has changed. Version 3 utilizes 2008 or later data. When data are ordered, the data cost plus shipping are the only costs. Version 3.0 software is included in the cost of the data. There are no additional fees to upgrade to IMPLAN Version 3.0. Data files are subject to licensing restrictions. 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 continue to create detailed economic impact estimates. Version 3.0 takes the analysis further, providing a new method for estimating regional imports and exports - 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.

IMPLAN online is an additional feature offered, allowing users to subscribe to online availability of the data and software. To purchase IMPLAN online, contact the company. Model economic impacts can be done from anywhere by utilizing IMPLAN online. IMPLAN online subscribers always have access to the latest data releases and most current software updates. Plus, subscribers also receive access to historical datasets (back to 2010) in addition to the data year of their selection.

Users should note that there are two different versions of the software available. One is referred to as IMPLAN online (available anywhere on the cloud) and is available at a monthly cost. The other version is called IMPLAN PRO (or desktop version) and is available on an individual computer. The cost is for the data. There are several differences in the two versions available and a user should determine through consultation with IMPLAN which version is appropriate for their needs. Be sure to check this thoroughly so the data you purchase will fulfill your needs.

IMPLAN Data

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).

IMPLAN also provides an additional feature that shows the state and local tax impacts and the federal tax impacts for a particular industry or a scenario for a specific employer.

Appendix B

IMPLAN Data:

Details of State and Local Tax Impacts

and Federal Tax Impacts

for West River Health Services

APPENDIX B - Detailed Description of State and Local Tax Impacts from West River Health Services on Adams County, ND, 2018

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations	TOTALS
Dividends					$11,725	$11,725
Social Ins Tax-Employee Contribution	$73,454					$73,454
Social Ins Tax-Employer Contribution	$153,864					$153,864
Tax on Production and Imports: Sales Tax			$437,727			$437,727
Tax on Production and Imports: Property Tax			$159,635			$159,635
Tax on Production and Imports: Motor Vehicle Lic			$9,955			$9,955
Tax on Production and Imports: Severance Tax			$376,220			$376,220
Tax on Production and Imports: Other Taxes			$48,416			$48,416
Tax on Production and Imports: S/L NonTaxes						$0
Corporate Profits Tax					$32,150	$32,150
Personal Tax: Income Tax				$156,485		$156,485
Personal Tax: NonTaxes (Fines- Fees				$34,434		$34,434
Personal Tax: Motor Vehicle License				$34,934		$34,934
Personal Tax: Property Taxes				$5,452		$5,452
Personal Tax: Other Tax (Fish/Hunt)				$44,329		$44,329
Total State and Local Tax Impact	$227,318	$0	$1,031,953	$275,634	$43,875	**$1,578,780**

APPENDIX B - Detailed Description of Federal Tax Impacts from West River Health Services on Adams County, ND, 2018

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations	TOTALS
Social Ins Tax-Employee Contribution	$1,926,662	$55,057				$1,981,719
Social Ins Tax-Employer Contribution	$1,852,493					$1,852,493
Tax on Production and Imports: Excise Taxes			$80,412			$80,412
Tax on Production and Imports: Custom Duty			$30,339			$30,339
Tax on Production and Imports: Fed NonTaxes			$3,826			$3,826
Corporate Profits Tax					$321,698	$321,698
Personal Tax: Income Tax				$1,520,114		$1,520,114
Total Federal Tax	$3,779,155	$55,057	$114,577	$1,520,114	$321,698	**$5,790,601**