The Economic Impact of Linton Hospital on Emmons County, North Dakota

Prepared by:

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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 nursing homes. These facilities not only employ a number of people and have a large payroll, but they also draw into the county a large number of people from rural areas that need medical services. The overall objective of this study is to measure the economic impact of Linton Hospital on Emmons County in 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 Emmons County;
3. Summarize the direct economic activities of Linton Hospital from operations in Emmons County;
4. Present concepts of community economics and multipliers; and
5. Estimate the economic impact of Linton Hospital from operating activities in Emmons County.

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 (**Table 1**). A strong health care system can also create jobs in the local area.

Table 1
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., 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 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 2** 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 17.8 percent in 2015;

Table 2
United States Health Expenditures and Employment Data
1970-2015; Projected for 2016-2025

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	1,369.7	4,857	13.3%	10,858 [a]	3.2%
2010	2,596.4	8,404	17.4%	13,777 [b]	2.7%
2011	2,687.9	8,638	17.3%	14,026 [b]	1.8%
2012	2,795.4	8,915	17.3%	14,282 [b]	1.8%
2013	2,877.6	9,110	17.2%	14,492 [b]	1.5%
2014	3,029.3	9,515	17.4%	14,677 [b]	1.3%
2015	3,205.6	9,990	17.8%	15,080 [b]	2.7%
				Avg Yrly Increase 2000 to 2015	2.6%
Projections					
2020	4,198.3	12,490	18.7%		
2025	5,631.0	16,032	20.1%		

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov [January 2017]); U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 1960-2015 and National Health Expenditure Projections 2016-2025. (https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html [October 2016]).

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

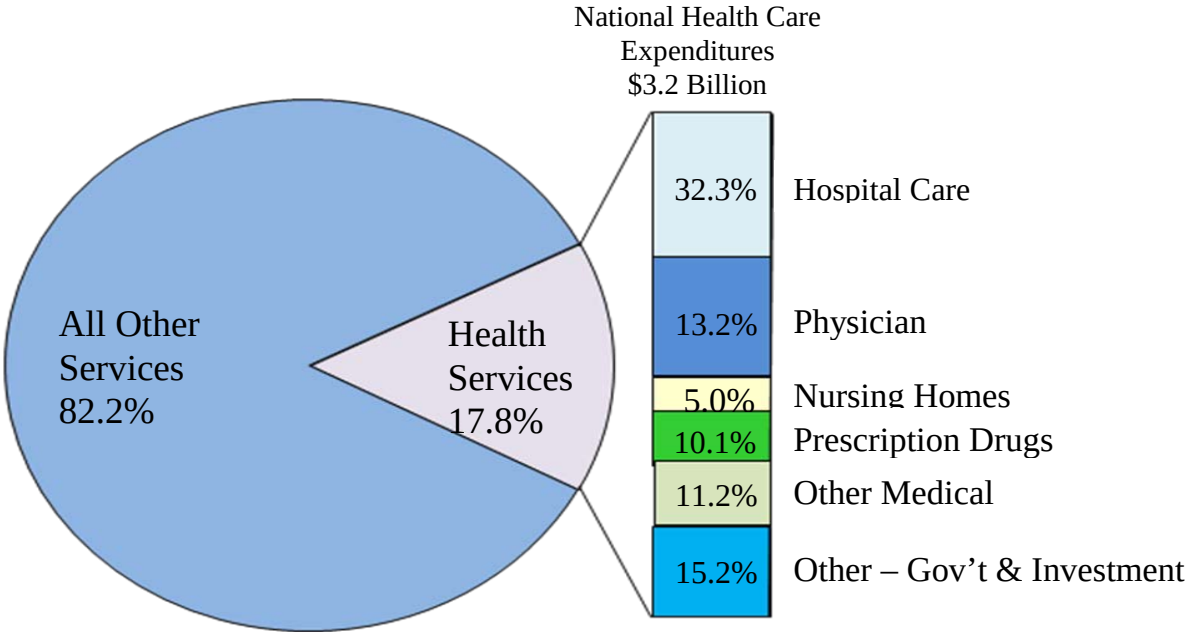
[b] Based on North American Industrial Classification System (NAICS) for health sector employment.

- Per capita health expenditures increased from $355 in 1970 to $9,990 in 2015;
- Employment in the health sector increased 394.1 percent from 1970 to 2015; and
- Annual average increase in employment from 2000 to 2015 was 2.6 percent.

The U. S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, projects that health care expenditures will account for 18.7 percent of GDP by 2020 and increase to 20.1 percent of GDP in 2025. Per capita health care expenditures are projected to increase to $12,490 in 2020 and to $16,032 in 2025. Total health expenditures are projected to increase to over $5.6 trillion in 2025.

Figure 1 illustrates 2015 health expenditures by percent of GDP and by type of health service. Health services represented 17.8 percent of national GDP in 2015. The largest category of health services was hospital care, representing 32.3 percent of the total and the second largest category was physician services with 26.2 percent of the total.

Figure 1
National Health Expenditures as a Percent of Gross Domestic Product and by Health Service Type, 2015



SOURCE: U. S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 2015 (http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html [January 2017]).

Emmons County Demographic and Economic Data

Linton Hospital is located in Linton in Emmons County, North Dakota. The medical service area is Emmons County, North Dakota. **Table 3** illustrates the last two U. S. Census Bureau populations for Emmons County cities, towns, and surrounding rural area and for Emmons County and North Dakota. The most current population estimates for 2014 and 2015 are also provided.

The data in **Table 3** show Linton, the county seat, had population of 1,321 in 2000 and 1,097 in 2010, which represents a decrease of 17.0 percent. All cities in Emmons County show decreases in population from 2000 to 2010 as well. This compares to Emmons County decreasing 18.0 percent and North Dakota increasing 4.7 percent. The 2015 estimates show decreasing population from the 2010 Census to 2015 for all cities/towns and rural area and for Emmons County. North Dakota increased in population from 2010 to 2015.

Table 3
Population and Percent Change for Linton, Emmons County Cities, Towns and Rural Area and for Emmons County and the State of North Dakota

	2000 Population	2010 Population	2014 Estimate	2015 Estimate	% Change '00 to '10	% Change '10 to '14	% Change '10 to '15
Braddock	43	21	9	8	-51.2%	-57.1%	-61.9%
Hague	91	71	64	57	-22.0%	-9.9%	-19.7%
Hazleton	237	235	253	223	-0.8%	7.7%	-5.1%
Linton*	1,321	1,097	1,114	1,042	-17.0%	1.5%	-5.0%
Strasburg	549	409	511	439	-25.5%	24.9%	7.3%
Rural Area	2,090	1,717	1,540	1,694	-17.8%	-10.3%	-1.3%
Emmons County	**4,331**	**3,550**	**3,491**	**3,463**	-18.0%	-1.7%	-2.5%
North Dakota	**642,200**	**672,591**	**704,925**	**721,640**	4.7%	4.8%	7.3%

SOURCE: U.S. Census Bureau, Census Populations and Population Estimates (www.census.gov [April 2017]).
* County Seat

The 2010 Census populations and population projections for the county and state are illustrated in **Table 4**. The 2010 populations are from the U. S. Census Bureau and the projections from the North Dakota Housing and Finance Agency, 2012 Statewide Housing Needs Assessment. The populations are projected to decrease for the county while increase for the state from 2010 through 2029.

Table 4
2010 Census Population and Population Projections
for Emmons County and the State of North Dakota

	2010 Census	2019 Projection	2024 Projection	2029 Projection	% Change '10 to '19	% Change '10 to '24	% Change '10 to '29
Emmons County	3,550	3,331	3,366	3,413	-6.2%	-5.2%	-3.9%
North Dakota	672,591	813,282	852,615	891,268	20.9%	26.8%	32.5%

SOURCE: U.S. Census Bureau (www.census.gov [April 2017]); North Dakota Housing and Finance Agency, Statewide Housing Needs Assessment, Detailed Tables (www.ndhfa.org [April 2017]).

Tables 5a and 5b show the populations for the county and state by age group and gender for the 2000 and 2010 Census years and the 2015 estimate years. From 2000 to 2010, the younger age group (0-14 year olds) in Emmons County decreased in total population 30.6 percent. From 2000 to 2010, the age group in the county with the largest increase is the 15-19 year olds with 19.1 percent. North Dakota also showed decreased population in the youngest age group and the largest increase in the 45-65 year age groups.

The male population for the county decreased 16.7 percent and the female population for the county decreased 19.4 percent. The state had male population increase of 6.0 percent and female increase of 3.4 percent. From 2010 to 2015, the county had the largest decrease in

Table 5a
U.S. Census Bureau Population by Age Groups and Gender
for Emmons County and the State of North Dakota, 2000, 2010, 2015 Estimates

	Age Groups							Gender	
	0-14	15-19	20-24	25-44	45-64	65+	Totals	Male	Female
2000 Census									
Braddock	2	4	1	3	13	20	43	21	22
Hague	13	3	0	23	13	39	91	42	49
Hazleton	42	14	6	46	58	71	237	118	119
Linton*	236	73	38	266	287	421	1,321	625	696
Strasburg	84	31	14	93	107	220	549	247	302
Rural Area	482	158	35	534	545	336	2,090	1,131	959
Emmons County	859	283	94	965	1,023	1,107	4,331	2,184	2,147
Percent of Total	19.8%	6.5%	2.2%	22.3%	23.6%	25.6%	100.0%	50.4%	49.6%
North Dakota	129,846	53,618	50,503	174,891	138,864	94,478	642,200	320,524	321,676
Percent of Total	20.2%	8.3%	7.9%	27.2%	21.6%	14.7%	100.0%	49.9%	50.1%
2010 Census									
Braddock	1	0	0	3	6	11	21	13	8
Hague	7	5	0	13	17	29	71	37	34
Hazleton	52	13	4	43	61	62	235	121	114
Linton*	156	55	25	175	327	359	1,097	521	576
Strasburg	48	17	10	40	109	185	409	189	220
Rural Area	332	139	48	282	591	325	1,717	939	778
Emmons County	596	229	87	556	1,111	971	3,550	1,820	1,730
Percent of Total	16.8%	6.5%	2.5%	15.7%	31.3%	27.4%	100.0%	51.3%	48.7%
North Dakota	124,461	47,474	58,956	165,747	178,476	97,477	672,591	339,864	332,727
Percent of Total	18.5%	7.1%	8.8%	24.6%	26.5%	14.5%	100.0%	50.5%	49.5%

Table 5b
U.S. Census Bureau Population by Age Groups and Gender
for Emmons County and the State of North Dakota, 2000, 2010, 2015 Estimates

	Age Groups							Gender	
	0-14	15-19	20-24	25-44	45-64	65+	Totals	Male	Female
2015 Estimates									
Braddock	0	0	0	0	0	8	8	5	3
Hague	6	3	0	7	18	23	57	39	18
Hazleton	54	17	0	46	45	61	223	122	101
Linton*	131	73	54	175	269	340	1,042	458	584
Strasburg	50	22	49	55	94	169	439	221	218
Rural Area	298	164	39	218	646	329	1,694	893	801
Emmons County	539	279	142	501	1,072	930	3,463	1,738	1,725
Percent of Total	15.6%	8.1%	4.1%	14.5%	31.0%	26.9%	100.0%	50.2%	49.8%
North Dakota	147,666	49,444	72,293	197,791	182,452	107,281	756,927	388,853	368,074
Percent of Total	19.5%	6.5%	9.6%	26.1%	24.1%	14.2%	100.0%	51.4%	48.6%
% Change '00 to '10									
Emmons County	-30.6%	19.1%	-7.4%	-42.4%	8.6%	-12.3%	-18.0%	-16.7%	-19.4%
North Dakota	-4.1%	11.5%	16.7%	-5.2%	28.5%	3.2%	4.7%	6.0%	3.4%
% Change '10 to '15									
Emmons County	-9.6%	21.8%	63.2%	-9.9%	-3.5%	-4.2%	-2.5%	-4.5%	-0.3%
North Dakota	18.6%	4.1%	22.6%	19.3%	2.2%	10.1%	12.5%	14.4%	10.6%

SOURCE: 2000 and 2010 Census Population and 2015 population estimates by age groups, ACS Demographic and Housing Estimates, U.S. Census Bureau (www.census.gov [April 2017]).
* County Seat

population for the 25-44 age group and the largest increase in the 20-24 age group; the state increased in all categories with the largest increase in the age 20-24 age group.

Tables 6a and 6b provide the populations of Emmons County and North Dakota by race groups and Hispanic origin. From 2000 to 2010, Emmons County showed a decrease in the White race. North Dakota showed an increase in all race groups from 2000 to 2010. From 2000 to 2010, Hispanic origin population decreased in the county (17.1 percent) and increased in the state (56.7 percent). Hispanic origin continued to decrease in the county and increased in the state from 2010 to 2015. From 2010 to 2015, Emmons County decreased further in White populations, while the state continued to increase in all race groups.

Data from County Business Patterns and Bureau of Economic Analysis show trends in the health services employment and payroll (labor income) over time; the two data sources have different definitions but the trends show how health services and industries, in general, change over time.

Data from U.S. Census Bureau, County Business Patterns, are illustrated in **Table 7**, showing employment and payroll for health services compared to the total employment and payroll for the county and the state. The data show that the county health services employment decreased 5.2 percent from 2004 to 2014 while the total county employment decreased 17.9 percent. County health services employment as a percent of total county employment was 22.3 percent in 2004 and increased to 24.8 percent in 2014; the state health services employment was 19.4 percent of total state employment in 2004 and decreased to 16.5 percent in 2014.

County health services payroll increased from 2004 to 2014 by 45.1 percent, while total county payroll increased 15.9 percent. County health services payroll as a percent of total county payroll was 20.0 percent in 2004 and decreased to 23.6 percent in 2014. This compares to the

Table 6a

U.S. Census Bureau Population by Race and Hispanic Origin

for Emmons County and the State of North Dakota, 2000, 2010 and 2015 Estimates

	White	Black	Native American	Other	Two or More Races	Totals	Hispanic Origin
2000 Census							
Braddock	49	0	0	0	0	49	0
Hague	97	0	0	0	0	97	2
Hazleton	230	0	0	0	0	230	2
Linton*	1,309	0	2	0	0	1,311	10
Strasburg	508	0	2	0	0	510	8
Rural Area	2,123	2	0	5	4	2,134	19
Emmons County	4,316	2	4	5	4	4,331	41
Percent of Total	99.7%	0.0%	0.1%	0.1%	0.1%	100.0%	0.9%
North Dakota	593,181	3,916	31,329	6,376	7,398	642,200	8,595
Percent of Total	92.4%	0.6%	4.9%	1.0%	1.2%	100.0%	1.3%
2010 Census							
Braddock	20	0	0	0	1	21	0
Hague	71	0	0	0	0	71	1
Hazleton	229	0	5	0	1	235	4
Linton*	1,077	1	2	3	14	1,097	6
Strasburg	408	0	0	0	1	409	1
Rural Area	1,690	1	7	9	10	1,717	22
Emmons County	3,495	2	14	12	27	3,550	34
Percent of Total	98.5%	0.1%	0.4%	0.3%	0.8%	100.0%	1.0%
North Dakota	605,449	7,960	36,591	10,738	11,853	672,591	13,467
Percent of Total	90.0%	1.2%	5.4%	1.6%	1.8%	100.0%	2.0%

Table 6b
U.S. Census Bureau Population by Race and Hispanic Origin
for Emmons County and the State of North Dakota, 2000, 2010 and 2015 Estimates

	White	Black	Native American	Other	Two or More Races	Totals	Hispanic Origin
2015 Estimates							
Braddock	8	0	0	0	0	8	0
Hague	57	0	0	0	0	57	0
Hazleton	223	0	0	0	0	223	0
Linton*	1,025	0	0	12	5	1,042	0
Strasburg	428	0	11	0	0	439	0
Rural Area	1,615	0	0	4	75	1,694	4
Emmons County	3,356	0	11	16	80	3,463	4
Percent of Total	96.9%	0.0%	0.3%	0.5%	2.3%	100.0%	0.1%
North Dakota	640,208	11,872	38,286	15,142	16,132	721,640	20,569
Percent of Total	88.7%	1.6%	5.3%	2.1%	2.2%	100.0%	2.9%
% Change '00 to '10							
Emmons County	-19.0%	0.0%	250.0%	140.0%	575.0%	-18.0%	-17.1%
North Dakota	2.1%	103.3%	16.8%	68.4%	60.2%	4.7%	56.7%
% Change '10 to '15							
Emmons County	-4.0%	100.0%	-21.4%	33.3%	196.3%	-2.5%	-88.2%
North Dakota	5.7%	49.1%	4.6%	41.0%	36.1%	7.3%	52.7%

SOURCE: 2000 and 2010 Census population, 2015 Population Estimates by race and ethnic origin, U.S. Census Bureau (www.census.gov [April 2017]).

* County Seat

Table 7
Employment and Payroll for Health Services
in Emmons County and North Dakota

	Employment			
	Health Services	Total County	Health Services as a % of Total County Employment	Health Services as a % of Total State Employment
2004	193	866	22.3%	19.4%
2005	194	869	22.3%	18.6%
2006	195	872	22.4%	18.4%
2007	203	899	22.6%	17.5%
2008	162	855	18.9%	17.0%
2009	189	465	40.6%	18.0%
2010	195	758	25.7%	18.6%
2011	193	762	25.3%	18.4%
2012	211	807	26.1%	17.4%
2013	225	784	28.7%	17.3%
2014	183	738	24.8%	16.5%
% Chg '04 to '14	-5.2%	-17.9%		
	Payroll ($1,000s)			
	Health Services	Total County	Health Services as a % of Total County Payroll	Health Services as a % of Total State Payroll
2004	3,589	17,956	20.0%	20.9%
2005	3,640	18,163	20.0%	20.7%
2006	3,750	18,697	20.1%	19.9%
2007	3,809	19,032	20.0%	18.6%
2008	4,801	20,961	22.9%	18.4%
2009	4,908	19,683	24.9%	19.5%
2010	4,987	20,040	24.9%	19.5%
2011	5,076	20,442	24.8%	18.7%
2012	5,787	25,035	23.1%	17.0%
2013	5,453	22,197	24.6%	16.6%
2014	5,208	22,060	23.6%	15.7%
% Chg '04 to '14	45.1%	15.9%		

SOURCE: U.S. Census Bureau, County Business Patterns; 2004-2014 based on NAICS (www.census.gov [April 2017]).

Shaded Cells indicate data were withheld to avoid disclosure of confidential information, estimates are provided.

state health services payroll as a percent of total state payroll of 20.9 percent in 2004 and decreasing to 15.7 percent in 2014

Data from U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (BEA) are illustrated in **Tables 8** and **9**. **Table 8** shows employment by type and by industry. Total county employment for health care and social assistance remained constant from 2014 to 2015 at 206. The state health care and social assistance sector showed a 1.9 percent increase during the same time. The largest industry was health care for the county and the state for both years. The industry with the largest percent change from 2014 to 2015 was construction for the county (15.7 percent decrease), compared to the state with the largest percent change in the mining industry (17.8 percent decrease).

Table 9 shows personal income by major component and by industry. Total county personal income increased by 6.5 percent from 2014 to 2015, while the state's total personal income decreased by 1.2 percent. Total county income in the health care and social assistance industry was $7.4 million in 2014 and $7.5 million in 2015, an increase of 2.1 percent while the state increased 7.7 percent. The largest industry was construction for the county in 2014 and wholesale trade in 2015. The industry with the largest percent change from 2014 to 2015 was mining for both the county and state.

Basic economic indicators for Emmons County, North Dakota, and the United States are illustrated in **Table 10**. BEA data for 2015 show per capita income in Emmons County at $45,828 with the state at $55,950 and the nation $48,112. The employment and labor force data are from the U.S. Department of Labor, Bureau of Labor Statistics. For 2016, the annual unemployment rate was 4.8 percent for Emmons County, compared to 3.3 percent for the state

Table 8

Full- and Part-Time Employment by NAICS[1] Industry
for Emmons County and North Dakota 2014 and 2015

	2014			2015			'14-'15	'14-'15
	Emmons County		State	Emmons County		State	% Chg	% Chg
	No. of Jobs	% of Total	% of Total	No. of Jobs	% of Total	% of Total	Emmons County	North Dakota
Total Employment	2,237	100.0%	100.0%	2,212	100.0%	100.0%	-1.1%	-1.3%
Wage & Salary	1,094	48.9%	79.1%	1,057	47.8%	78.4%	-3.4%	-2.1%
Proprietors'	1,143	51.1%	20.9%	1,155	52.2%	21.6%	1.0%	1.8%
Farm proprietors'	533	46.6%	20.9%	527	45.6%	20.3%	-1.1%	-1.1%
Nonfarm proprietors'[2]	610	53.4%	79.1%	628	54.4%	79.7%	3.0%	2.5%
By Industry:								
Farm employment	619	27.7%	5.6%	588	26.6%	5.2%	-5.0%	-7.1%
Nonfarm employment	1,618	72.3%	94.4%	1,624	73.4%	94.8%	0.4%	-0.9%
Private employment	1,348	83.3%	85.0%	1,351	83.2%	84.7%	0.2%	-1.3%
For, fshng, & related	(D)	N/A	1.0%	(D)	N/A	1.0%	N/A	0.7%
Mining	28	2.1%	7.5%	28	2.1%	6.2%	0.0%	-17.8%
Utilities	(D)	N/A	0.8%	(D)	N/A	0.8%	N/A	3.6%
Construction	153	11.4%	9.3%	129	9.5%	9.3%	-15.7%	-1.4%
Manufacturing	21	1.6%	5.6%	(D)	N/A	5.6%	N/A	-1.6%
Wholesale trade	102	7.6%	5.9%	108	8.0%	5.9%	5.9%	-1.2%
Retail trade	197	14.6%	12.7%	199	14.7%	12.9%	1.0%	0.7%
Transp & wrhsng	(D)	N/A	6.0%	(D)	N/A	5.7%	N/A	-6.0%
Information	(D)	N/A	1.6%	(D)	N/A	1.6%	N/A	-2.4%
Finance & Ins	(D)	N/A	5.4%	(D)	N/A	5.6%	N/A	0.7%
RE/rental/leasing	(D)	N/A	4.8%	(D)	N/A	5.0%	N/A	2.5%
Prof/sci/techn svcs	48	3.6%	4.8%	45	3.3%	5.0%	-6.3%	2.1%
Mgmt of cos/enterpr	0	0.0%	1.2%	0	0.0%	1.2%	0.0%	1.5%
Admin/waste svcs	26	1.9%	4.0%	28	2.1%	4.0%	7.7%	-2.0%
Educ services	38	2.8%	1.3%	39	2.9%	1.3%	2.6%	5.1%
Hlth care/soc assist	206	15.3%	13.0%	206	15.2%	13.4%	0.0%	1.9%
Arts/entrtnmnt/rec	27	2.0%	1.6%	25	1.9%	1.6%	-7.4%	1.5%
Accomm/food svcs	90	6.7%	8.0%	92	6.8%	8.1%	2.2%	0.2%
Other not pub adm	(D)	N/A	5.6%	(D)	N/A	5.7%	N/A	0.5%
Sum of (D)s	412	30.6%		452	33.5%		9.7%	
Gov't/Gov't entrprses	270	16.7%	15.0%	273	16.8%	15.3%	1.1%	1.4%

SOURCE: U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [April 2017]).

[1] The estimates of employment for 2011 forward are based on the 2012 North American Industry Classification System

[2] Excludes Limited Partners

(D) Not shown to avoid disclosure of confidential information, totals are shown.

Table 9
Personal Income by Major Component and Earnings by
Industry based on NAICS1 for Emmons County and North Dakota, 2014 and 2015

	2014			2015			'14-'15	'14-'15
	Emmons County		State	Emmons County		State	% Chg	% Chg
	Income ($1,000s)	% of Total	% of Total	Income ($1,000s)	% of Total	% of Total	Emmons County	North Dakota
Total Personal Income	146,370			155,908			6.5%	-1.2%
Earnings by Place of Work	76,975	100.0%	100.0%	84,457	100.0%	100.0%	9.7%	-3.3%
Wage/Salary/Dsbrsmnts	35,027	45.5%	70.6%	34,441	40.8%	71.3%	-1.7%	-2.3%
Proprietors' income[2]	32,254	41.9%	14.5%	40,597	48.1%	13.3%	25.9%	-11.2%
All other earnings	9,694	12.6%	14.9%	9,419	11.2%	15.4%	-2.8%	-0.2%
Total by Industry:								
Farm employment	16,709	21.7%	3.5%	20,403	24.2%	1.2%	22.1%	-67.4%
Nonfarm employment	60,266	78.3%	96.5%	64,054	75.8%	98.8%	6.3%	-1.0%
Private employment	48,164	79.9%	84.8%	51,567	80.5%	83.9%	7.1%	-2.0%
For/fshng/related	(D)	N/A	0.6%	(D)	N/A	0.6%	N/A	6.0%
Mining	580	1.2%	14.3%	344	0.7%	11.3%	-40.7%	-22.4%
Utilities	(D)	N/A	1.7%	(D)	N/A	1.9%	N/A	8.4%
Construction	8,751	18.2%	12.6%	7,330	14.2%	12.7%	-16.2%	-0.7%
Manufacturing	1,578	3.3%	6.3%	(D)	N/A	6.8%	N/A	7.1%
Wholesale trade	7,203	15.0%	8.5%	8,462	16.4%	8.5%	17.5%	-2.6%
Retail trade	5,219	10.8%	7.7%	5,484	10.6%	8.0%	5.1%	2.0%
Transp & wrhsng	(D)	N/A	8.8%	(D)	N/A	8.4%	N/A	-5.7%
Information	(D)	N/A	1.8%	(D)	N/A	1.8%	N/A	-2.4%
Finance & Ins	(D)	N/A	4.7%	(D)	N/A	5.2%	N/A	7.4%
RE/rental/leasing	(D)	N/A	3.6%	(D)	N/A	3.5%	N/A	-5.2%
Prof/sci/techn svcs	1,110	2.3%	5.7%	1,075	2.1%	5.9%	-3.2%	0.9%
Mgmt cos/enterpr	0	N/A	1.7%	0	N/A	1.9%	N/A	5.0%
Admin/waste svcs	424	0.9%	2.6%	560	1.1%	2.6%	32.1%	-1.5%
Educ services	852	1.8%	0.5%	843	1.6%	0.5%	-1.1%	1.8%
Hlth care/soc assist	7,367	15.3%	11.8%	7,519	14.6%	13.0%	2.1%	7.7%
Arts/entrtnmnt/rec	163	0.3%	0.4%	194	0.4%	0.4%	19.0%	8.0%
Accomm/food svcs	872	1.8%	3.2%	869	1.7%	3.2%	-0.3%	-2.5%
Other not pub adm	(D)	N/A	3.7%	(D)	N/A	3.9%	N/A	3.7%
Sum (D)s[3]	14,045	29.2%		18,887	36.6%		34.5%	
Govt/govt enterpr	12,102	20.1%	15.2%	12,487	19.5%	16.1%	3.2%	4.9%

SOURCE: U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [April 2017]).

[1] The estimates of employment for 2011 forward are based on the 2012 North American Industry Classification System

[2] Excludes Limited Partners

Table 10
Economic Indicators for Emmons County,
North Dakota and the United States

Indicator	Emmons County	North Dakota	United States
Total Personal Income (2015)	155,908,000	42,349,688,000	15,463,981,000,000
Per Capita Income (2015)	45,828	55,950	48,112
Employment (2016)	1,459	414,000	151,436,000
Unemployment (2016)	73	14,000	7,751,000
Unemployment Rate (2016)	4.8%	3.3%	4.9%
Employment (January 2017)	1,377	148,476	152,081,000
Unemployment (January 2017)	106	12,594	7,635,000
Unemployment Rate (January 2017)	7.1%	3.0%	4.8%
% of People in Poverty (2015)	11.30%	11.50%	15.50%
% Under 18 in Poverty (2015)	6.3%	13.6%	21.7%
Transfer Receipts (2015)	34,548,000	5,326,398,000	2,678,606,000,000
Transfer Receipts as a % of Total Personal Income	22.2%	12.6%	17.3%
Transfer Receipts -- Subcategories			
Medicare (2015)	9,952,000	1,099,469,000	628,220,000,000
% of Total	28.8%	20.6%	23.5%
Medicaid (2015)	6,139,000	965,701,000	551,843,000,000
% of Total	17.8%	18.1%	20.6%

SOURCE: Employment and unemployment data, U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov [April 2017]); Personal income, per capita income, and transfer receipts, U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [April 2017]); Poverty data, U.S. Census Bureau (www.census.gov [April 2017]).

and 4.9 percent for the U.S. For the preliminary year-to-date January 2017 employment and labor force data, the unemployment rate for Emmons County was 7.1 percent; this compared to 3.0 percent for the state and 4.8 percent for the U.S.

Based on 2015 U. S. Census poverty data, Emmons County had 6.3 percent of the population under age 18 below poverty level; this compared to 13.6 percent for the state and 21.7 percent for the U.S. From BEA 2015 data, transfer receipts as a percentage of total personal income for Emmons County (22.2 percent) were much higher than the state (12.6 percent) and the nation (17.3 percent). This indicator shows the entity's percent of total personal income that comes from federal and state funds.

Direct Economic Activities of Linton Hospital

The direct economic activities of Linton Hospital include the hospital and a physician clinic. Linton Hospital provides many services, in addition to the physician services, including the following:

General and Acute Services

- Acne treatment
- Allergy, flu & pneumonia shots
- Ambulance-24/7 ALS ambulance service
- Cardiology (visiting provider)
- Clinic
- Diabetic Education
- 24/7 Trauma level 5 Emergency room services-including eEmergency
- Hospital (acute care) In-patient and Out-patient
- Mole/wart/skin lesion removal
- Nephrology (visiting provider)
- Nutrition counseling
- OB/GYN (visiting provider)
- Orthopedics (visiting provider)
- Pharmacy
- Podiatry – evaluation and surgery
- Prenatal care
- Physicals: annuals, D.O.T., sports & insurance
- Pulmonology (visiting provider)
- Stress Testing
- Surgical services—biopsies
- Surgical services—outpatient
- Swing bed services
- Urology (visiting provider)

Screening/Therapy Services

- Chronic disease management
- Holter monitoring
- Laboratory services
- Lower extremity circulatory assessment
- Occupational physicals
- Occupational therapy
- Pediatric services
- Physical therapy-including sports preventative and post-injury
- Respiratory care
- Sleep studies
- Social services

Radiology Services

- CT scan
- Digital mammography
- Echocardiograms
- EKG
- General x-ray
- Mammograms
- MRI
- Ultrasound

Laboratory Services

- Blood types
- Clot times
- Chemistry
- Hematology
- Microbiology
- Urine testing

The direct economic activities of Linton Hospital include the employees and their wages, salaries, and benefits (labor income) to provide the hospital services and physician services. From **Table 11**, the total direct employment of Linton Hospital from hospital operations includes 92 full- and part-time employees with direct labor income of nearly $3.0 million. The direct employment from the physician services includes 13 full- and part-time employees, with labor income of $1.0 million.

Table 11
Direct Economic Activities of Linton Hospital
in Emmons County, North Dakota, 2017

DIRECT ACTIVITIES FROM OPERATIONS		
Categories	Number of Employees	Labor Income (Wages, Salaries, and Benefits)
Hospital	92	$2,993,407
Physician Clinic	13	$1,048,530
TOTALS	**105**	**$4,041,937**

SOURCE: Local data from Linton Hospital, 2016; Construction ratios and average construction compensation from IMPLAN Group, LLC.

The economic impact of construction activities can also be measured for employment and labor income. Linton Hospital had a minimal amount of construction in 2016 of $240,691 and in 2017 of $17,042. This level of construction generated less than two employees with labor income of $82,195. These activities only occur during the year of construction, while operations occur each and every year that Linton Hospital continues to operate.

The Impact of Linton Hospital

The direct impacts of Linton Hospital, measured by employment and labor income, are only a portion of the total impact. There are additional economic impacts created as Linton Hospital and its employees 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 goods from other businesses, and the dollar flow to other businesses will stop. This decreases

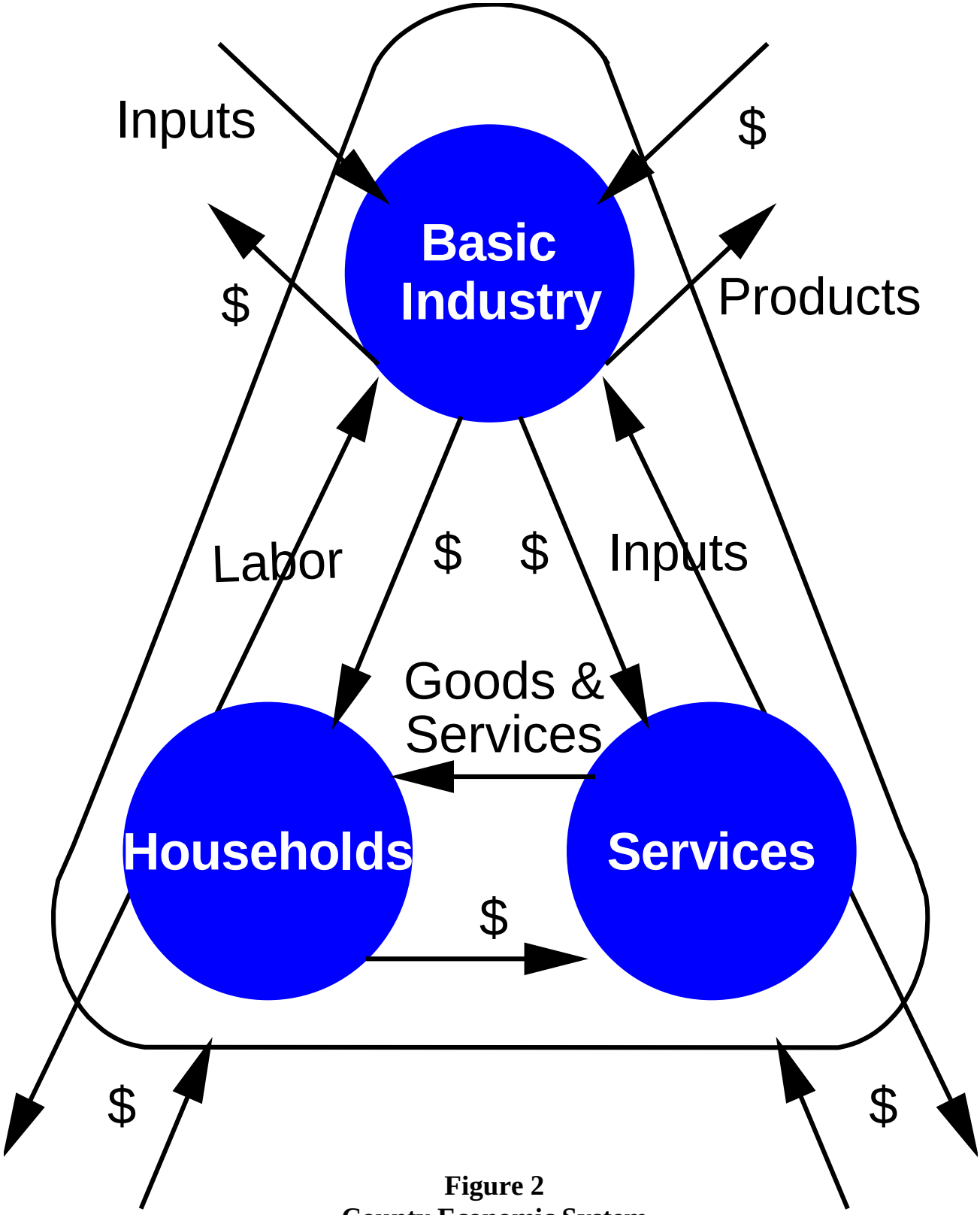


Figure 2
County Economic System

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 Impact from Operating Activities

The employment and labor income impacts of Linton Hospital from operating activities in the hospital and physician clinic are presented in **Table 12**. Direct employment and labor

Table 12

Economic Impacts of Operations

of Linton Hospital on Emmons County, 2017

EMPLOYMENT IMPACT FROM OPERATIONS

Categories	Direct Employment	Employment Multiplier	Secondary Employment Impact	Total Employment Impact
Hospital	92	1.36	33	125
Physician Clinic	13	1.32	4	17
TOTALS	**105**		**37**	**142**

LABOR INCOME IMPACT FROM OPERATIONS

Categories	Direct Labor Income	Labor Income Multiplier	Secondary Labor Income Impact	Total Labor Income Impact
Hospital	2,993,407	1.18	538,814	3,532,221
Physician Clinic	1,048,530	1.14	146,794	1,195,324
TOTALS	**4,041,937**		**685,608**	**4,727,545**

IMPACT FROM STATE AND LOCAL AND FEDERAL TAXES

State and Local Taxes*	**332,171**
Federal Taxes*	**1,245,449**

SOURCE: Direct employment and labor income data provided by Linton Hospital, 2016; multipliers from IMPLAN Group, LLC.

* More detailed information on state and local taxes and federal taxes are included in **Table 9**. Definitions for each tax category are provided in **Appendix B**.

income from operating activities were obtained from Linton Hospital. The multipliers specific to Emmons County, ND, are derived from IMPLAN data.

The hospital employs 92 employees (**Table 12**). The hospital employment multiplier is 1.36. This means for every job in the hospital sector, another 0.36 job is created in other sectors (businesses) in Emmons County. The secondary employment generated in Emmons County from the hospital sector is estimated to be 33 jobs. The hospital has a total impact of 125 jobs on the local economy of Emmons County. The physician clinic employs 13 employees. With a physician employment multiplier of 1.32, the secondary employment impact is four and the total employment impact is 17. The total employment impact of Linton Hospital includes direct employment impact of 105 employees, secondary employment impact of 37 and total employment impact of 142.

Direct labor income for the hospital is $3.0 million (**Table 12**). Using the hospital labor income multiplier of 1.18 derived from IMPLAN, Linton Hospital generates secondary labor income impact of $0.5 million and total labor income impact of $3.5 million. The physician clinic has direct labor income of $1.0 million. With a 1.14 physician labor income multiplier, secondary labor income impact is $146,794 and the total labor income impact is $1.2 million. The hospital and clinic combined results in total direct labor income impact of $4.0 million, total secondary labor income impact of $0.7 million, and total labor income impact of $4.7 million.

IMPLAN also provides the impact from state and local taxes and federal taxes for Linton Hospital in Emmons County (**Table 12**). The impact from state and local taxes total $332,171 and the impact from federal taxes total $1.2 million. Detailed information on the components of the taxes are included in **Tables 13a** (state and local) and **13b** (federal). Definitions of each tax component are included in **Appendix B**.

Table 13a
Detailed State and Local Tax Impacts from Linton Hospital on Emmons County

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations	TOTALS
Dividends					$1,979	$1,979
Social Insurance Tax:						
Employee Contribution	$4,261					$4,261
Employer Contribution	$8,610					$8,610
Tax on Production & Imports:						
Sales Tax			$54,703			$54,703
Property Tax			$66,028			$66,028
Motor Vehicle License			$1,694			$1,694
Severance Tax			$109,281			$109,281
Other Taxes			$3,571			$3,571
State/Local Non Taxes			$1,263			$1,263
Corporate Profits Tax					$10,222	$10,222
Personal Tax:						
Income Tax				$48,349		$48,349
NonTaxes (Fines/Fees)				$7,544		$7,544
Motor Vehicle License				$7,566		$7,566
Property Taxes				$2,874		$2,874
Other Tax (Fish/Hunt)				$4,226		$4,226
Total State & Local Tax Impacts	$12,871	$0	$236,540	$70,559	$12,201	$332,171

Table 13b
Detailed Federal Tax Impacts from Linton Hospital on Emmons County

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations	TOTALS
Social Insurance Tax:						
Employee Contribution	$380,648	$19,251				$399,899
Employer Contribution	$371,578					$371,578
Tax on Production & Imports:						
Excise Tax			$8,118			$8,118
Custom Duty Tax			$3,056			$3,056
Federal Non Taxes			$496			$496
Corporate Profits Tax					$76,985	$76,985
Personal Tax: Income Tax				$385,317		$385,317
Total Federal Tax Impacts	$752,226	$19,251	$11,670	$385,317	$76,985	$1,245,449

The Impact from Construction Activities

No construction impacts are shown due to minimal amounts of construction in 2016 and 2017. However, to illustrate the impact of a large amount of construction, **Appendix C** illustrates the impact from an example of a two-year construction period with $7.5 million in construction each year. **Appendix C** is provided as informational only and is not indicative of any actual known construction activities of Linton Hospital.

Summary

Both the operating activities and construction activities of a hospital impact the economy of Emmons County. Often overlooked can be the economic impact created from construction activities. This report measures the impact that Linton Hospital and its physician clinic have on the economy due to its normal operating activities; Linton Hospital had minimal construction activities to report during 2016 and 2017 so no construction impacts were provided. The operating impact occurs every year; whereas, the construction impact will only occur during the construction year.

In 2017, Linton Hospital employs 92 full- and part-time employees and generates almost $3.0 million in labor income (wages, salaries, and benefits); the physician clinic employs 13 with labor income of $1.0 million. When the secondary impacts are included, the hospital has total employment impact of 125 jobs and total labor income impact of $3.5 million and the physician clinic has total employment impact of 17 jobs and total labor income impact of $1.2 million. When combined, Linton Hospital has total employment impact of 142 jobs and total labor income impact of $4.7 million. The employment and labor income impacts from operating activities are annual and will continue each and every year that Linton Hospital and its physician clinic operate in the future; these are long term economic benefits of Linton Hospital.

The impacts generated by Linton Hospital contribute to the local economy of Emmons County, North Dakota. The hospital employs local residents. The hospital and its employees spend money in Emmons County and generate a secondary impact. If the hospital increases or decreases in size, the medical health of Emmons County as well as the economic health of Emmons County can be affected.

For the attraction of industrial firms, businesses, and retirees, the local area should have quality hospital and health services. A quality hospital and health sector can contribute to the overall economic health of Emmons County, as well as the overall medical health of the Emmons County residents. Given this, not only does Linton Hospital contribute to the health and wellness of the local residents but Linton Hospital also contributes to the overall economic strength of Emmons County.

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Appendix A

IMPLAN Software and Data from IMPLAN Group, LLC:

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 and relocated to:

IMPLAN Group, LLC
16740 Birkdale Commons Parkway Suite 206
Huntersville, NC 28078

Support hours are 8 am – 7 pm Eastern time and can be reached by email at info@implan.com or by phone at 651-439-4421 or 704-727-4141

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 2007 or later data. When data are ordered, the data cost plus shipping are the 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 continue 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.

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).

IMPLAN References

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Appendix B

Definitions of State and Local Tax Impacts and Federal Tax Impacts

Appendix B – Definitions of State and Local Tax Impacts and Federal Tax Impacts

The following definitions and sources provide a key to the tax impact report, with letters corresponding to the positions in the Tables below.

State and Local Tax Impacts

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Dividends					**O**
Social Ins Tax - Employee Contribution	**A**	**C**			
Social Ins Tax - Employer Contribution	**B**				
Tax on Production & Imports: Sales Tax			**D**		
Tax on Production & Imports: Property Tax			**E**		
Tax on Production & Imports: Motor Vehicle License			**F**		
Tax on Production & Imports: Severance Tax			**G**		
Tax on Production & Imports: Other Taxes			**H**		
Tax on Production & Imports: State/Local Non Taxes			**I**		
Corporate Profits Tax					**P**
Personal Tax: Income Tax				**J**	
Personal Tax: NonTaxes (Fines/Fees)				**K**	
Personal Tax: Motor Vehicle License				**L**	
Personal Tax: Property Taxes				**M**	
Personal Tax: Other Tax (Fish/Hunt)				**N**	
Total State & Local Tax Impacts					

Federal Tax Impacts

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Social Ins Tax - Employee Contribution	**Q**	**S**			
Social Ins Tax - Employer Contribution	**R**				
Tax on Production & Imports: Excise Tax			**T**		
Tax on Production & Imports: Custom Duty Tax			**U**		
Tax on Production & Imports: Federal Non Taxes			**V**		
Corporate Profits Tax					**X**
Personal Tax: Income Tax				**W**	
Total State & Local Tax Impacts					

A. **Employee-paid portion for State/Local social insurance.** This represents retirement plans and temporary disability insurance. The U.S. value comes from the Bureau of Economic Analysis (BEA), National Income and Produce Accounts (NIPA) Table 3.6. This value is distributed to states based on each state's share of the following items from the Annual Survey of State and Local Government Finances (SLGF): Employee Retirement – Local Employee Contribution; Employee Retirement – State Employee Contribution; Workers Compensation – Other Contributions. This state value is then distributed to the counties based on each county's proportion of the state's State/Local Government Non-Education Employee Compensation. The county-level State/Local Employee Compensation figures come from BEA. These are then split into Education vs. Non-Education using various data from the U.S. Census Bureau and the U.S. Department of Education.

B. **Employer-paid portion for State/Local social insurance funds.** This represents workers' compensation and temporary disability insurance. The U.S. value comes from NIPA Table 3.6. This value is distributed to states and based on each state's share of the following items from the SLGF: Employee Retirement – From Local Government; Employee Retirement – From State Government; Unemployment Compensation – Contribution; Workers Compensation – Own Contributions. County distribution is based on county portion of state and local government noneducation employee compensation from IMPLAN.

C. **State/Local social insurance paid by self-employed.** Self-employed individuals do not make payments to State/Local government, so this entry will always have a value of $0.

D. **Taxes on Production and Imports net of subsidies (TOPI) sales taxes paid to State and Local Governments.** The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of Total General Sales Tax from the Annual Survey of State and Local Government Finances (SLGF). State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

E. **TOPI property taxes paid to State and Local Governments.** The U.S. value comes from the BEA's NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of Total Property Tax from the (SLGF). State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

F. **TOPI motor vehicle license taxes paid to State and Local Governments.** The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of Motor Vehicle Operator's License Tax and Motor Vehicle License Tax from the SLGF. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

G. **TOPI severance taxes paid to State and Local Governments.** The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of Severance Tax from the SLGF. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

H. **TOPI other taxes paid to State and Local Governments.** This item consists largely of business licenses and documentary and stamp taxes. The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of the following tax items from the SLGF: Corporation License; Amusement License; Other License; Documentary & Stock Transfer; Public Utility License; Alcoholic Beverage License; Occupation & Business License, NEC; and NEC. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

I. **TOPI non-taxes paid to State and Local Governments.** This item includes rents and royalties, special assessments, fines, settlements, and donations. The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of the following tax items from the SLGF: Miscellaneous – Rents; Miscellaneous – Special Assessments; Miscellaneous – Royalties; and Miscellaneous – Donations from Private Sources. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

J. **Personal income tax payments to State and Local Governments.** The U.S. value comes from NIPA Table 3.3. The U.S. value is distributed to states based on Individual Income Tax from the SLGF. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

K. **Personal non-tax payments to State and Local Governments.** This item includes payments for fines and donations. The U.S. value comes from NIPA Table 3.3. The U.S. value is distributed to states based on Motor Vehicle License Tax from the SLGF. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

L. **Personal motor vehicle fee payments to State and Local Governments.** The U.S. value comes from NIPA Table 3.4. The U.S. value is distributed to states based on Miscellaneous – Fines & Forfeits from the SLGF. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

M. **Personal property tax payments to State and Local Governments.** The U.S. value comes from NIPA Table 3.4. The U.S. value is distributed to states based on Property Tax from the SLGF. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

N. **Personal other tax payments to State and Local Governments.** This item consists largely of hunting, fishing, and other personal licenses. The U.S. value comes from NIPA Table 3.4. The U.S. value is distributed to states based on Hunting and Fishing License Tax from the SLGF. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

O. **State/Local Government Dividends.** This item represents net dividend payments to government by corporations from investments. The U.S. value comes from NIPA Table 3.3. The U.S. value is distributed to states based on the following items from the SLGF: Employee Retirement – Securities – Mortgages; Employee Retirement – Securities – Corporate Stocks; Employee Retirement – Securities – Corporate Bonds; and Employee Retirement – Total Other Securities. State values are distributed to counties is based on their proportion of state Other Property Income (from IMPLAN database).

P. **State/Local Government corporate profits tax.** The U.S. value comes from NIPA Table 3.3. The U.S. value is distributed to states based on Corporate Net Income Tax from the SLGF. State values are then distributed to counties is based on counties based on their proportion of the state's Other Property Income (from IMPLAN database).

Q. **Employee-paid portion for Federal social insurance.** This item includes social security, survivors insurance, disability insurance, hospital insurance, supplemental

medical insurance, unemployment insurance, veterans' life insurance, and railroad retirement plans. The U.S. value comes from NIPA Table 3.6. The U.S. value is distributed to states and counties based on Personal Contribution for Social Insurance from the BEA's CA05 table.

R. **Employer-paid portion for Federal social insurance.** This item includes social security, survivors insurance, disability insurance, hospital insurance, military medical insurance, unemployment insurance, pension benefit guaranty, veterans' life insurance, and railroad retirement plans. The U.S. value comes from NIPA Table 3.6. The U.S. value is distributed to states and counties based on Personal Contribution for Social Insurance from the BEA's CA05 table.

S. **Self-Employed contribution to Federal social insurance.** This item includes social security, survivors insurance, disability insurance, and hospital insurance. The U.S. value comes from NIPA Table 3.6. The U.S. value is distributed to states and counties based on Personal Contribution for Social Insurance from the BEA's CA05 table.

T. **TOPI Federal Excise Taxes.** This item includes federally levied excise taxes on alcohol, tobacco, telephones, coal, fuels, air transportation, vehicles, etc. The U.S. value comes from NIPA Table 3.2. The U.S. value is distributed to states and counties based on IMPLAN estimates of total TOPI for all industries in relationship to U.S. total TOPI.

U. **TOPI Federal Custom Duties.** These are gross collections less refunds. The U.S. value comes from NIPA Table 3.2. The U.S. value is distributed to states and counties based on IMPLAN estimates of total TOPI for all industries in relationship to US total TOPI.

V. **TOPI Federal Non-taxes.** This item includes rents and royalties[4]. The U.S. value comes from NIPA Table 3.2. The U.S. value is distributed to states and counties based on IMPLAN estimates of total TOPI for all industries in relationship to U.S. total TOPI.

W. **Personal Income taxes paid to the Federal Government.** These are taxes paid through withholding, declarations and final settlement less refunds. The U.S. value comes from NIPA Table 3.2. The same value can also be found in NIPA Table 3.4. The U.S. value is distributed to states based on each state's value of "Federal government: Individual Income taxes (net of refunds)" from the BEA's SA50 table. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

X. **Federal Corporate profits tax.** The U.S. value comes from NIPA Table 3.2. The U.S. value is distributed to states and counties based on their proportion of U.S. Other Property Income (from IMPLAN database).

Appendix C

Illustration of Hospital Construction Impacts

Appendix C Table

EXAMPLE of Economic Impact of a Large Linton Hospital Construction Project over a Two-Year Construction Period on Emmons County, 2017

CONSTRUCTION COSTS

Year 1	$7,500,000
Year 2	$7,500,000
Total Construction Costs	**$15,000,000**

EMPLOYMENT IMPACT FROM CONSTRUCTION

Categories	Direct Employment	Employment Multiplier	Secondary Employment Impact	Total Employment Impact
Year 1	48	1.33	16	64
Year 2	48	1.33	16	64
TOTALS	**96**		**32**	**128**

LABOR INCOME IMPACT FROM CONSTRUCTION

Categories	Direct Labor Income	Labor Income Multiplier	Secondary Labor Income Impact	Total Labor Income Impact
Year 1	$2,391,120	1.22	$526,046	$2,917,166
Year 2	$2,391,120	1.22	$526,046	$2,917,166
TOTALS	**$4,782,240**		**$1,052,092**	**$5,834,332**

SOURCE: Example only; multipliers from IMPLAN Group, LLC.