

# **Regional Economic Impact of Sauk Prairie Healthcare**



# Contributors

**Co-Principal Researcher and Analyst**

Russ D. Kashian, Ph.D., Professor, University of Wisconsin-Whitewater

**Co-Principal Researcher and Analyst**

Matthew W. Winden, Ph.D., Professor, University of Wisconsin-Whitewater

**Images and Data**

Kenneth R. Carlson, Vice President Planning/Business Development,  
Sauk Prairie Healthcare

**Data Collection and Report Preparation**

Larissa Leist, FERC Assistant, University of Wisconsin-Whitewater  
Taylor McDarison, Graphic Designer, University of Wisconsin-Whitewater  
Ian Moy, FERC Assistant, University of Wisconsin-Whitewater  
Andrew Hicks, FERC Assistant, University of Wisconsin-Whitewater



# Audience



This study assesses the economic impacts generated by the hospital's ongoing operations as well as the construction of its new facility. This information will be useful to the employees, patients and shareholders of the hospital, as well as local businesses, and development groups. Additionally, it will prove useful to policy makers and residents by providing useful insight into how SPH contributes to the local economy.



# Introduction

Sauk Prairie Hospital (SPH) is a substantial contributor to its local economy, creating positive impacts both directly and indirectly through a number of different avenues. For SPH, the local economy comprises Sauk, Dane, Juneau, Vernon, Columbia, Iowa and Richland counties. The hospital system provides not only health care services to this region, but also employment opportunities and income for individuals. By utilizing services and companies from the area for its supplies, maintenance needs, and recent expansion construction, SPH's economic activities go beyond its own patients and employees to positively impact

employment and incomes at other local businesses. In addition, the employees and patients of the hospital, spend money in the local economy on goods and services at retailers and restaurants, again producing positive economic impacts at area businesses.

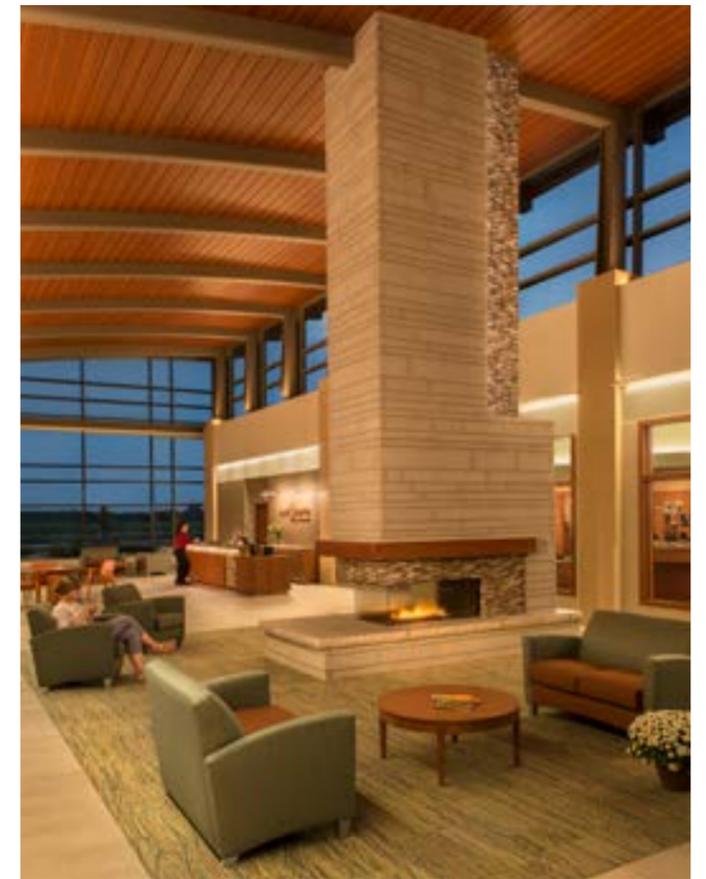
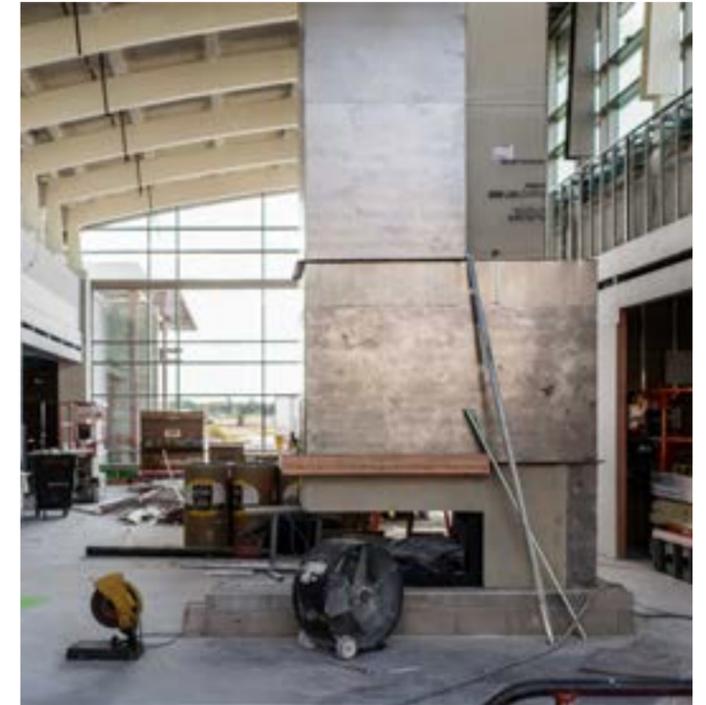
The hospital contributes positively to the local community beyond its purely economic impact, as well, by supporting many voluntary programs and services which enhance the welfare of area residents. For example in 2013, Sauk Prairie Healthcare Foundation provided \$20,000 in grants for health and wellness projects in the local community. Programs such as Mobile Meals, Medication Take



Back and Dangerous Decibels all received funding as part of the hospital's efforts. In addition, through the Sauk Prairie Healthcare Foundation, SPH makes scholarships available to SPH nurses who are in pursuit of advanced degrees. While most of this study focuses on the financial and employment aspects of SPH's impact to the local region, it is important to keep in mind the many positive benefits SPH creates which cannot be measured or monetized but enrich the lives of patients and residents.

## About Sauk Prairie Hospital

Sauk Prairie Hospital has been an integral part of the local economy and community since 1956. Over that time, its facilities and service offerings have continued to grow in both scope and quality. In April 2014, SPH relocated and reopened in a newly constructed, state-of-the-art facility. In October 2014, SPH added a 60,000 square foot medical office building featuring multispecialty clinics from SSM-Dean and UW Health, Advanced Pain Management, Associated Podiatrists, and Home Health United. Sauk Prairie Healthcare services located in this building include Orthopedics, General Surgery, Urology, Sleep Center, Audiology, Diabetes Management, and Cardiac and Pulmonary Rehabilitation. The building is also home to a Women's Health Center where patients can see Prairie Clinic



OB/Gyn physicians and visit the SPH Women's Health Nurse Navigator. Special events hosted by SPH, such as CPR training, exercise classes, childbirth instruction and support groups, offer important outreach services to the community. In addition, SPH continues to offer its wide array of healthcare services including joint replacements, surgery, childbirth,

primary care, rehabilitation, and sports medicine to name only a few. For all of this work, SPH has gained national recognition. It was named one of the Top 100 hospitals in the nation according to Truven Health Analytics and it also received a Guardian of Excellence award from Press Ganey for patient satisfaction.

## The Local Economy

The counties of Sauk, Dane, Juneau, Vernon, Columbia, Iowa and Richland in the state of Wisconsin constitute the "local economy" and are referred to as the "impact area" and "regional economy" for the purpose of this study. Relevant characteristics of the counties comprising the impact area are described in Table 1.

As noted in the table, the U.S. Census Bureau describes the local economy as having a total population of 727,096 individuals with 293,860 total households as of 2013. Between the years 2009 and 2013, the average median household income was \$51,928 for Sauk and the local surrounding counties. This is approximately \$480 less than the average median household income for Wisconsin. Those living in the impact area also tend to work outside of the counties they live in. For counties such as Juneau, Vernon, Columbia and Iowa, up to 52% of their



population commute to other counties such as Sauk and Dane County for work.

Looking at the impact area's employment distribution highlights the main sectors which drive the local economy. The main sectors that drive employment are: education and health services, manufacturing, food and drinking services, and the transportation and utilities sector. For four of the seven counties, the major sectors include education and health services and manufacturing. For Sauk County in 2012, the economy was driven by food and drink services which employed 3,793 people. Hospitals in the area ranked fifth in terms of average employment, supporting 1,314 jobs in 2012.

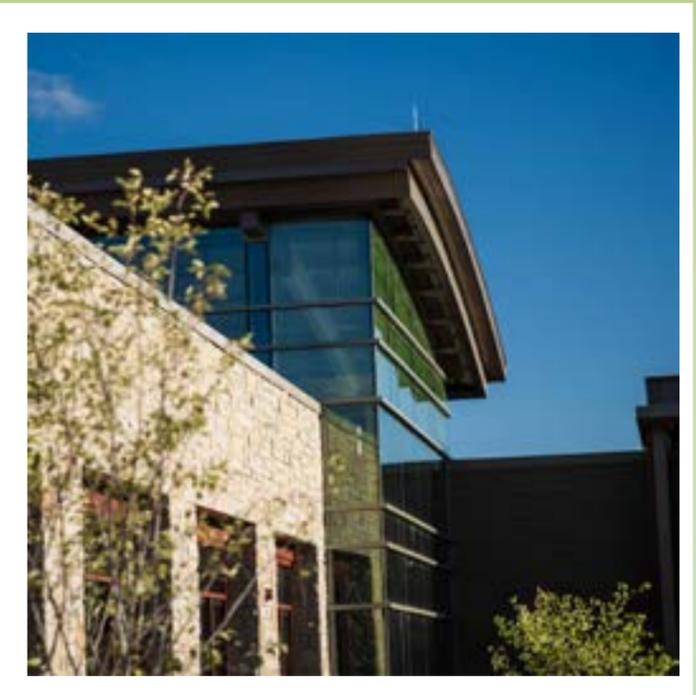


Table 1: Economic and Demographic Data

County	Area (sq. miles)	Population (2013)	Households (2009-2013)	Total Personal Income (\$)	Average Annual Wage Rate (\$)	Median Household Income (2009-2013)
Adams	645.65	20,504	8,278	22,196	30,279	44,897
Colombia	765.53	55,653	22,735	28,273	34,724	57,922
Dane	1,197.24	509,939	206,982	33,712	46,917	61,721
Iowa	762.58	23,749	9,610	26,625	35,682	55,659
Juneau	766.93	26,547	10,194	23,343	37,003	45,297
Monroe	900.78	45,249	17,543	23,456	35,496	49,774
Richland	586.15	17,717	7,343	22,778	31,187	45,271
Sauk	830.90	63,162	25,206	25,988	33,187	52,140
Vernon	791.58	30,329	11,790	22,680	29,833	45,488
WISCONSIN	54,157.80	5,742,713	2,288,332	27,523	41,985	52,413

Source: United States census bureau state, county quick facts, and [www.worknet.wisconsin.gov](http://www.worknet.wisconsin.gov)

## Methods of Measuring Impact

The primary tool used to measure the impact SPH has on the regional economy is the IMPLAN input-output model. Input-output analysis provides insight into how the regional economy responds to specific changes to economic components of the system. This tool allows researchers to see how different factors of the economy such as personal income, employment or

output are affected when there is a change in the economy. To support the analysis in IMPLAN a questionnaire was administered to SPH's management to collect data on the capital cost structure. This data is used to forecast how the regional economy is impacted by activities associated with SPH, both in terms of the new construction projects undertaken, as well as ongoing operations.

## Sauk Prairie Impact on the Local Economy

### Multiplier

It is essential to understand how money moves through the economy in order to determine how the hospital influences the region. When the hospital spends money, the direct impact ripples through the region generating economic impact, which extends beyond the initial expenditure. While some of the spending is taken in the form of taxes and redistributed by the government, there is a large amount that circulates within the impact area.

The "multiplier" describes how initial spending creates subsequent rounds of regional spending. For example, when the hospital pays an employee, this is a direct impact. The employee then makes purchases using that income within the impact area from local businesses who then in turn experience growth and can then purchase more supplies and hire more employees. The IMPLAN model determines how much spending stays local and is taken in the form of taxes, and/or leaks from the region.



### Multiplier Effects

Multipliers can be explained as quantitative measures of economic impact that are felt by the entire impact area when there is a change in one aspect of the network. These multipliers take into account the fact that the regional economy is a connected system of mutually dependent activities. Generally, effects on the whole system are larger than the initial change alone.

The multipliers are estimated from various sources of expenditure data. Information was obtained from SPH in the form of a questionnaire, which the hospital's accounting and finance employees completed. Data such as total revenues and expenditures, wages, employment, tax payments and special assessments were analyzed. The analysis focuses on quantitative inputs but the questionnaire also included the location of the

hospital's patients in a qualitative effort to describe the reach SPHS has across the country. IMPLAN employs the data to determine the extent of impact SPH has on the local economy. The details of the questionnaire are described below.

### The Questionnaire

SPH provided information in the form of a questionnaire, which is used in determining qualitative and quantitative impacts within the local region. The first questions determine employment levels and locations of employees. This information explains the importance SPH has in terms of employment for Sauk and adjacent counties. To understand the flow of money into and out of Sauk and adjacent counties, the questionnaire includes questions

pertaining to revenues, expenditures and taxes. The survey also details any special assessments that SPH may have provided. These assessments generally include activities such as, municipal services, sidewalk repair, road improvements, etc. The top six non-wage expenditures are reported to catch any spending that may not have been attributed to previous categories. The hospital also provided the expenditures associated with constructing Sauk Prairie Memorial Hospital to show the impact of construction on the local region. Lastly, SPH reported the address and zip code of each of its patients, to examine out-of-state hospital usage as well as where most SPH patients reside.

### The IMPLAN Model

To determine the extent of Sauk Prairie Healthcare's impact in Sauk County and the regional economy, IMPLAN is utilized. This model uses economic factors from the local area including: total income, personal income, output by industry, employment, as well as any added value to services and goods in the area to establish suitable multipliers to be used in measuring the impact that the hospital has on the regional economy. The measures of spending can be described as, initial, direct, indirect and induced spending, defined as follows:



- *Initial spending* refers to hospital payroll expenditures
- *Direct spending* includes the spending of employees, patients and spending by the hospital that is non-payroll
- *Indirect spending* contains the expenditures of firms and individuals who provide goods and services to the hospital
- *Induced spending* describes the multiplier effect of spending that occurs after indirect spending

Determining the dollar value attributable to the above four spending categories is critical to measuring the extent that various forms of hospital-related spending impact the local economy.

### Impact Analysis

The ultimate goal of this study is to determine SPH's economic impact on the local economy. The IMPLAN model incorporates many aspects of the area's economic activity in determining the appropriate multipliers to be used in estimating economic impact.

The expenditures used to create the multipliers were collected using the questionnaire that SPH completed. IMPLAN uses these expenditures to estimate the direct spending that stays within the local economy, the spending that

escapes outside the local economy (leakage), and the additional growth for each dollar spent from indirect and induced effects.

Analysts use the multiplier to describe and quantify the linkages between various economic entities within the local economy. Multipliers can describe these relationships using several different economic indicators such as industry output, personal income, and employment.

The three main indicators used in this study are 1) employment 2) labor income and 3) output/revenue. Examining employment provides an evaluation of the number of jobs in a sector or specified sub-sector of the economy. Understanding the distribution of jobs gives us a sense of how many persons are dependent on a particular sector. Labor income, which is defined by wages, looks at wages and profits on other types of income earned. It provides an indication of how much money employees spend on goods and services, such as housing, taxes, groceries, and health care. Finally, total revenue gives us an insight into the total economic activity that is occurring within a specific sector as well as how it relates to the total economic activity of the region.

In table 2 (page 12), the economic impact of SPH's ongoing operations is delineated. Each indicator has three effects: direct, indirect, and induced. As seen in table 2, given the direct effect that the hospital has on the local

Impact Type	Employment	Labor Income	Output/Revenue
Direct Effect	525	\$44,024,947	\$78,824,553
Indirect Effect	206	\$8,847,870	\$27,290,733
Induced Effect	336	\$13,879,493	\$43,468,453
<b>Total Effect</b>	<b>1,067</b>	<b>\$66,743,311</b>	<b>\$149,583,739</b>
<b>Multiplier</b>	<b>2.03</b>	<b>1.52</b>	<b>1.90</b>

Based on the employment multiplier, the direct employee effect is approximately 525 jobs and the indirect effect is 206 additional jobs while the induced effect is 336 jobs. The model generates a multiplier of 2.03. The multiplier refers to the fact that every additional employee hired by SPH generates an additional 1.03 jobs (full and part-time) within the local economy.

Looking at the output multiplier, the direct effect is \$78.8 million with an indirect effect of \$27.3 million and \$43.5 million in induced effects. The secondary impacts are derived from direct sales to local suppliers and the local retail and service revenue derived from SPH employee spending. The model generates a multiplier of 1.9: every \$1 of revenue for SPH generates an additional \$0.90 of economic activity.

Lastly, the labor income multiplier is 1.52. That is, every additional dollar earned by SPH employees generates an additional \$0.52 in the local economy. These results demonstrate the vital role that SPH plays in the local economy. The model shows that SPH is responsible for generating 1,067 jobs within the local economy while generating \$66.7 million in labor income and \$149.6 million in revenue.



Furthermore, there is an additional one-time impact on the local economy of from SPH's new hospital construction.

Impact Type	Employment	Labor Income	Output/Revenue
Direct Effect	459.62	\$26,102,724	\$70,205,000
Indirect Effect	186.85	\$8,412,943	\$22,147,250
Induced Effect	187.21	\$7,499,400	\$23,617,587
<b>Total Effect</b>	<b>833.68</b>	<b>\$42,015,063</b>	<b>\$115,969,833</b>

The IMPLAN results show that construction generates a total effect on surrounding counties of 834 full time equivalent jobs, with a total labor income of \$42 million. While construction is initially a one-time expense, it is not unexpected for hospitals to upgrade and renovate their facilities so there is potential for future ongoing economic impacts in this area from new projects. The required cash value of expenditures for construction results show a total value of \$116 million. It is important to note that the value of land was taken out of the IMPLAN calculation.

Property Taxes	\$2,056,196
Sales Taxes	\$1,755,372
Income Taxes	\$1,555,773
<b>Total Impact</b>	<b>\$5,364,341</b>



In addition, SPH also has the effect of generating tax revenues for governments in the region (see table 4).

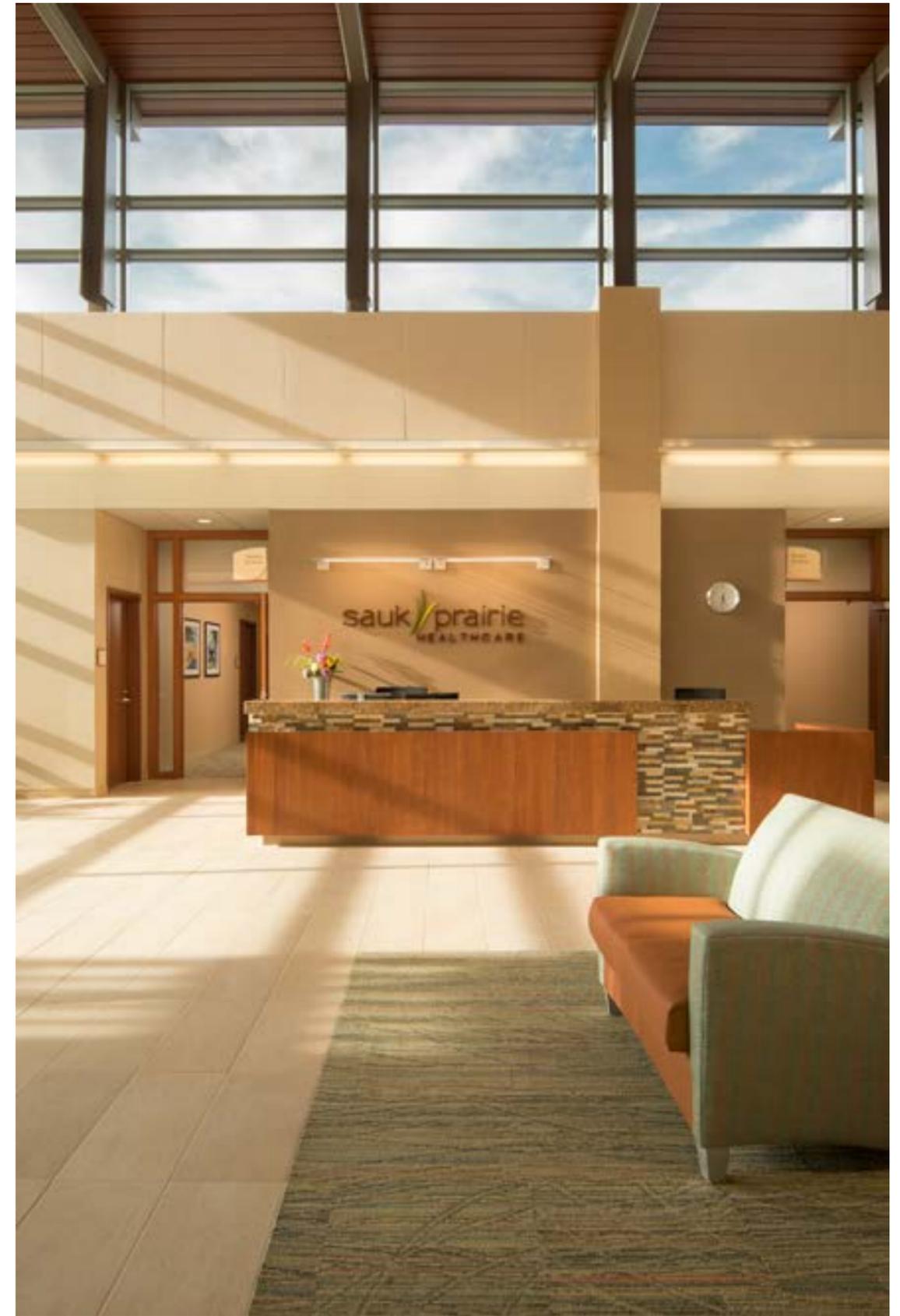
When including the direct, indirect and induced effects that SPH brings to the local economy, the total tax impact is \$5.4 million. That is an additional \$5.4 million that the government can use in taxes to local communities and support public projects.

## Summary

Sauk Prairie Hospital supported 1,067 jobs and created \$66.7 million in labor income (inside and outside of the hospital) throughout the impact area. The construction impact shows an additional 834 supported jobs with \$42 million in labor wages. Lastly, there was a substantial spending impact caused by the hospital (\$149.6 million) and this creates a positive tax impact of \$5.4 million for the surrounding region.

As this study shows, it is clear that

the economic impact of Sauk Prairie Hospital on the surrounding counties and local area is significant and multifaceted. Other impact aspects such as cultural, social, and intellectual experiences along with community service activities are not accounted for in this study. Regardless, the combined of the tangible and intangible factors which encompass the full impact of Sauk Prairie Hospital undoubtedly creates an even greater positive effect on the local economy.



The logo for the Fiscal & Economic Research Center (FERC) consists of the letters 'F', 'E', 'R', and 'C' in a bold, white, sans-serif font, each contained within a black square. Below the squares, the full name 'Fiscal & Economic Research Center' is written in a smaller, black, sans-serif font.

**F E R C**  
Fiscal & Economic Research Center

The logo for Sauk Prairie Healthcare features the word 'sauk' in a lowercase, brown, sans-serif font, followed by a stylized graphic of three vertical lines of varying heights and colors (green, yellow, and brown) that resemble a plant or grass. To the right of the graphic is the word 'prairie' in a lowercase, brown, sans-serif font. Below 'prairie' is the word 'HEALTHCARE' in a smaller, uppercase, brown, sans-serif font.

sauk  prairie  
HEALTHCARE