

Varshney & Associates

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THE IMPACT OF CALIFORNIA NORTHSTATE UNIVERSITY MEDICAL CENTER



Sanjay B. Varshney, Ph.D.
sanjay@sbvarshney.com

Andrey Mikhailitchenko, D.B.A.
an.mikhaili@gmail.com

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Executive Summary

The primary purpose of this report is to document the economic impact of California Northstate University (CNU) Medical Center on the local economy of Elk Grove, California as well as the economy of the whole Greater Sacramento Area.

The primary tool used for this analysis was IMPLAN - an economic impact assessment software system. It combines a set of extensive databases concerning economic factors, multipliers and demographic statistics with a highly refined and detailed system of modeling software.

Multipliers are the basis of how an input- output analysis such as IMPLAN used for this study makes estimations of the potential impacts of economic changes caused by certain economic activities (in this case Medical Center construction and operations). The multiplier is defined as the impact of a one-unit change in indicators such as income, sales, employment, that causes the respective effect in income, sales, employment in the economy of the area.

Four types of multiplier effect are usually analyzed in the output-input models like IMPLAN: direct, indirect, induced, and total.

- The *direct* effect characterizes an initial impact of an economic activity on the region's economy.
- The *indirect* effect defines the creation of additional economic activity that results from linked businesses, suppliers of goods and services, and provision of operating inputs.
- The *induced* effect measures the consumption expenditures of direct and indirect sector employees.
- The *total* effect is the sum of the direct, indirect, and induced effects.

The direct, indirect, and induced benefits arising due to the multiplier effects can be presented in five ways: output, employment, labor income, value added, and indirect business taxes.

- **Output** accounts for total revenues including all sources of income for a given time period for an industry in dollars.
- **Employment** demonstrates the number of jobs generated and is calculated as a full-time/part-time annual average.
- **Labor Income** includes all forms of employee compensation paid by employers and proprietary income.

- **Value Added** is the difference between an industry's total output and the cost of its intermediate inputs.
- **Indirect Business Taxes** consist of property taxes, excise taxes, fees, licenses, and sales taxes paid by businesses.

The economic impact analysis was performed for two geographic areas: Greater Sacramento and City of Elk Grove. The Greater Sacramento area for the purposes of this study was defined to be including Sacramento, Placer, Yolo, El Dorado, and San Joaquin counties. Elk Grove area for the purposes of this study was defined to include three zip code areas: 95757, 95758, and 95624.

The analysis was limited by the foreseeable period of the next 10 years (till 2028) and operated with NPV 2018 US dollars. The study revealed that during this period Medical Center construction and operations will add to the economic output of the Greater Sacramento and Elk Grove areas, act as a catalyst for new economic activity, create new jobs, add to the labor income, produce net new indirect business taxes, and in general add to the gross state product of the region.

Specifically, the total economic impact to the Greater Sacramento region (to include direct, indirect, and induced effects) will:

- Produce \$4.04 billion of economic Output.
- Create 24,129 new jobs.
- Result in more than \$1.74 billion of new Labor Income.
- Yield more than \$2.45 billion of new Value Added.
- Generate nearly \$113 million in new Indirect Business Taxes.

This study finds that the CNU Medical Center acting as a catalyst for faster growth and accelerated economic activity between 2019 and 2028 will create a substantial incremental economic impact in the local Elk Grove area. The total incremental economic impact to Elk Grove area (to include direct, indirect, and induced effects) will:

- Produce \$3.12 billion of economic Output.
- Create 18,216 new jobs.
- Result in \$1.45 billion of new Labor Income.
- Yield \$1.96 billion of new Value Added.
- Generate \$62.7 million in new Indirect Business Taxes.

The study estimated per capita benefits of CNU Medical Center construction and operations specifically in Elk Grove area. If the increased activity were to be divided equally, each household in Elk Grove would benefit from the additional labor income in the amount of \$2,630.14 on average each year. Similarly, every resident of Elk Grove would benefit from the additional labor income in the amount of \$829.70 on average each year due to the Medical Center construction and operations.

The increased indirect business tax dollars (on average \$6.3 million per year) would be a substantial addition to \$147 million budget of Elk Grove. It would be enough, for instance to cover 15.3% of budget for police or 69.3% for public transit department.

In addition to the directly quantifiable economic impact resulting from the construction and operations of the CNU Medical Center, additional impacts will result due to improving healthcare infrastructure of the

area. The Medical Center will increase the attractiveness of life in Elk Grove and thus support new housing and employment activity. Finally, to fully understand the total economic impact of the CNU Medical Center once completed, one must also consider the benefits that would accrue to all from the value of lives saved due to improved availability of emergency care in the area.

In recent years, Greater Sacramento area have struggled to attract new industries and jobs. Within this area, there appears competition between the communities for attracting new population and employment centers. Given the zero sum game nature of these efforts and results, the construction of the CNU Medical Center could have a significant impact on the success of the Elk Grove area community in the future in being a vibrant economic center. The investment in Medical Center construction will potentially have a tremendous payoff worth billions of dollars in the long run.

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Introduction

The primary purpose of this report is to document the economic impact of California Northstate University (CNU) Medical Center on the local economy of Elk Grove, California as well as the economy of the whole Greater Sacramento Area. The performed analysis reveals that the Medical Center will substantially change income, employment, and sales tax revenue in its service area that goes beyond the traditionally considered contributions such as improved access to care, more affordable health care costs, and community benefits. Except these evident benefits, the Medical Center also will become one of the major generators of local economic growth by creating jobs and income through the construction and then Medical Center operations. Except this direct impact, the Medical Center will also become a trigger for emerging new sources of employment and income in other connected businesses in the Elk Grove and Greater Sacramento area.

The analysis reveals that CNU Medical Center will provide to the local community much more than better access to healthcare. The generation of new income, creation of jobs, increase of tax revenues, and new opportunities for development of other businesses will become an extra contribution to economic and social environment of Elk Grove and the whole Greater Sacramento area. Finally, the investments in technological innovation, state of the art facilities, infrastructure improvements, and demand for new skilled labor will add socio-economic vibrancy to the whole area.

This report – *The Impact of California Northstate University Medical Center on the Local Economy* – was prepared for the citizens, community leaders, and health care providers of the City of Elk Grove. The report is the brief condensed version of the more comprehensive study covering all aspects of the Medical Center impact on the City of Elk Grove and Greater Sacramento area. Here the most critical, essential and quantitatively measured components of the Medical Center’s role in local economy are outlined.

This condensed version of the report is divided into four sections. The first section contains the brief overview of the financial and non-financial mechanisms of the healthcare sector connection with the local economy. In the second section the socio-economic context of the City of Elk Grove is being discussed and regional demographic characteristics that make the Medical Center especially valuable asset for the local society are highlighted. The third section contains quantitative analysis of the various aspects of the direct, indirect, and induced economic impact of CNU Medical Center on economic growth, jobs, payroll, and taxes in the local economy. The fourth section is the summary of the performed research and its results.

Utilization of the longitudinal economic impact analysis model specifically customized for the Medical Center construction and operations allows to evaluate in this report different aspects of Medical Center contribution to the local economy. It includes the estimates of the direct contribution of Medical Center construction as well as indirect and induced income caused by the construction and related activities. Then for the period after the planned completion of the construction in 2022 the

model evaluates direct, indirect, and induced impact of the Medical Center operations and related economic activities. The respective multipliers are used for assessing the employment, taxes, and generated income.

The Link between Local Economic Development and Health Care

Over the past several decades, the healthcare sector became one of the most essential economic engines of the Greater Sacramento. This sector consists not only of Medical Centers, but also outpatient facilities, nursing homes, pharmacies, physician practices, and providers of other medical services and products. The importance of the healthcare sector as one of the socio-economic drivers of a regional economy is often overlooked while the focus is made only on the direct healthcare functions and benefits. Given that the whole population of a city (in our case Elk Grove) is in this or that degree a consumer of healthcare services, the “healthcare dollars” are going elsewhere without having the Medical Center in the area. In contrast, if the Medical Center is built, it will attract these “healthcare dollars” not only locally, but from other areas as well. In addition to it, presence of a technologically advanced Medical Center providing high quality healthcare increases attractiveness of the area as place of life, work, and retirement.

Healthcare and Workforce

Quality of life factors play an essential role in macroeconomic management, first of all business allocation decisions. Areas attractive for life create a competitive advantage by providing businesses with the relatively inexpensive and productive human resources. A key factor conditioning quality of life in an area is the availability of healthcare services. Thus, the increasing proximity, affordability, and quality of healthcare in an area creates additional incentives for investors aimed at establishing and developing businesses that will operate using the local workforce. Human capital as the most essential resource becomes the factor attracting potential employers, first of all in knowledge- and technology-intensive sectors.

Healthcare and Retirees

Retirees is a social group of residents important for the local economy due to their lifestyle and consumer spending potential, including purchasing power associated with Medicare, Social Security and other programs. Attracting more middle- and upper- income retirees can be one of the major factors contributing to the area economic wealth. This group is especially sensitive to the quality of the healthcare, especially such components as proximity of healthcare facilities and ability to get timely and professional help in case of emergency. For instance, Elk Grove as the territory attractive for retirees in all other aspects (safety, housing, clean environment, convenient infrastructure, recreation opportunities etc.) due to absence of the Medical Center located in close proximity loses its competency as the retiree destination. Being one of the key antecedents of the residential location considerations for this group of people, easy and fast access to the quality healthcare can be significantly improved with the construction of the CSNU Medical Center.

“Healthcare Dollars” Destination

Sources of “healthcare dollars” are plentiful and include different types of insurance, Medicare, Medicaid, patient’s out-of-pocket payments etc. With the closest Medical Center facilities located out of the City of Elk Grove (South Sacramento etc.) these expenditures go out of the community. This leakage of “healthcare dollars” constitutes a significant loss of taxes, jobs, and income that otherwise would be generated locally. Except that, healthcare sector being a source of higher than average wages due to the purchasing power of its employees generates a demand on goods and services that plays an important role in a community economy. Medical Centers and healthcare facilities themselves are also the business-to-business customer of various kinds of goods and services, including supplies, laundry, waste management and other components needed for supporting their operations. The Medical Center on the territory of the area after the construction and start of operations will perform a role of absorbent of the “healthcare dollars” from other areas of Greater Sacramento. Thus the current losses will be turned to profits.

The remainder of this report presents the analysis of the magnitude of the impact of CNU Medical Center on other local businesses and its potential role as an economic engine of the area.

Demographic and Economic Context of the City of Elk Grove

Tables 1 and 2 provide selected demographic and economic data for City of Elk Grove. Table 1 highlights the demographic trends in the City of Elk Grove over the last decade. Population growth both in the periods 2000-10 and 2010-17 was substantially more dynamic than in Sacramento County, California, and the nation.

Table 1. Selected Demographic Data for City of Elk Grove, Sacramento County, California, and the United States

Demographic Indicator	Elk Grove	Sacramento County	California	United States
Population (2000)	81,043	1,223,499	33,871,648	281,421,906
Population (2010)	153,015	1,418,788	37,253,956	303,965,272
Total % Growth (2000-10)	88.8%	16.0%	10.0%	8.0%
Average Annual % Growth (2000-10)	8.9%	1.6%	1.0%	0.8%
Population (2017)	171,844	1,530,615	39,536,653	325,719,178
Total % Growth (2010-17)	12.3%	7.9%	6.1%	7.2%
Average Annual % Growth (2010-17)	1.8%	1.1%	0.9%	1.0%
Population by Age, % (2017)				
0-19	27.3%	26.0%	25.5%	25.4%
20-44	31.7%	35.2%	35.4%	33.2%
45-64	27.3%	24.9%	25.1%	25.9%
65 and over	13.7%	13.7%	13.8%	15.5%

Source: U.S. Census Bureau, 2017 American Community Survey

Table 2 provides an economic snapshot of Elk Grove and comparative data for Sacramento County,

California, and the United States. In general, Elk Grove possessed a substantially higher mean household income as compared to Sacramento County, California, or the nation. Table 2 also provides information on unemployment rates. In 2017, Elk Grove had a lower unemployment rate than Sacramento County or California. In addition to that, its population has on average substantially higher educational level than Sacramento County, California, and the nation.

Table 2. Economic Indicators for City of Elk Grove, Sacramento County, California, and the United States

Indicator	Elk Grove	Sacramento County	California	United States
Per Capita Income	\$33,876	\$31,449	\$35,046	\$32,397
Mean Household Income	\$105,294	\$85,305	\$101,761	\$84,525
Unemployment Rate	5.5%	6.6%	5.9%	5.3%
Bachelor's Degree or Higher (Age 20+)	28.8%	21.7%	24.6%	23.3%

Source: U.S. Census Bureau, 2017 American Community Survey

Impact of California Northstate University Medical Center on the Local Economy

Methodology

Model

The primary tool used for this analysis was IMPLAN - an economic impact assessment software system. It combines a set of extensive databases concerning economic factors, multipliers and demographic statistics with a highly refined and detailed system of modeling software. IMPLAN provides modeling to assess economic impacts at the state, multi-county, county, and zip code levels. Widely recognized and used nationally and regionally, IMPLAN has more than 1,500 active users in the United States and internationally. These include clients in federal and state government, universities, and private sector consultants.

Multiplier Effect

Multipliers are the basis of how an input-output analysis such as IMPLAN used for this study makes estimations of the potential impacts of economic changes caused by certain economic activities (in this case Medical Center construction and then Medical Center operations). The multiplier is defined as the impact of a one-unit change in indicators such as income, sales, employment, that causes the respective effect in income, sales, employment in the economy of the area. A multiplier is expressed as a rate of change, e.g. if for one dollar spent an additional \$0.25 of economic activity is generated in the local area it means a multiplier of 1.25. The concept of the multiplier effect is based on understanding of the financial funds turnover in the economy as a recycling process. The recycling of dollars is analyzed within the certain territorial borders defined by the zip codes that represent the service area of the CNU Medical Center.

Four types of multiplier effect are usually analyzed in the output-input models like IMPLAN: direct, indirect, induced, and total (see table 3 below).

- The *direct* effect characterizes an initial impact of an economic activity on the region's economy. For every dollar spent in an industry, if the industry exists in the region, there is one-dollar worth of direct impact in the local economy.
- The *indirect* effect defines the creation of additional economic activity that results from linked businesses, suppliers of goods and services, and provision of operating inputs. For example, the Medical Center purchases food, detergents, blankets and other products as well as contracted services.
- The *induced* effect measures the consumption expenditures of direct and indirect sector employees. While indirect effect considers business-to-business transactions only, the induced effect includes the sum of household purchases per dollar spent, based on the respective labor income payments. Examples of induced benefits include employees' expenditures on items such as retail purchases, housing, banking, medical services, and insurance.
- The *total* effect is the sum of the direct, indirect, and induced effects.

The direct, indirect, and induced benefits arising due to the multiplier effects can be presented in five ways: output, employment, labor income, value added, and indirect business taxes.

- ***Output*** accounts for total revenues including all sources of income for a given time period for an industry in dollars. It is the total production value and includes all components of production such as employee compensation, proprietor income, intermediate expenditures, indirect business taxes, and other property type income. This is the best overall measure of business and economic activity because it is the measure most firms use to determine current activity levels. For example, an output multiplier of 1.5 means that for each dollar of Medical Center spendings, additional 50 cents are spent in other sectors because of related business-to-business and consumer spendings.
- ***Employment*** demonstrates the number of jobs generated and is calculated as a full-time/part-time annual average. IMPLAN is an annual model, therefore Employment estimates provided by IMPLAN represent annualized Employment values (i.e. if a worker works 6 months, IMPLAN counts that as 0.5 jobs, and one job sustained over 5 years counts as 5 jobs). A person can hold more than one job, so the job count is not necessarily the same as the count of employed persons. An employment multiplier of 1.5 means that for each two jobs created by the Medical Center, an additional one job is created because of related business-to-business and consumer spendings.
- ***Labor Income*** represents the total value of all forms of employment income paid throughout an industry for a given time period. It includes all forms of employee compensation paid by employers (e.g., total payroll costs including benefits, wages and salaries of workers, health and life insurance, retirement payments, non-cash compensation), and proprietary income (payments received by self-employed individuals and/or unincorporated business owners, e.g., self employment income, income received by private business owners including doctors, lawyers). A labor income multiplier of 1.5 means that for each dollar of labor income created by

the Medical Center, an additional 50 cents of labor income are created in other sectors because of related business-to-business and consumer spendings.

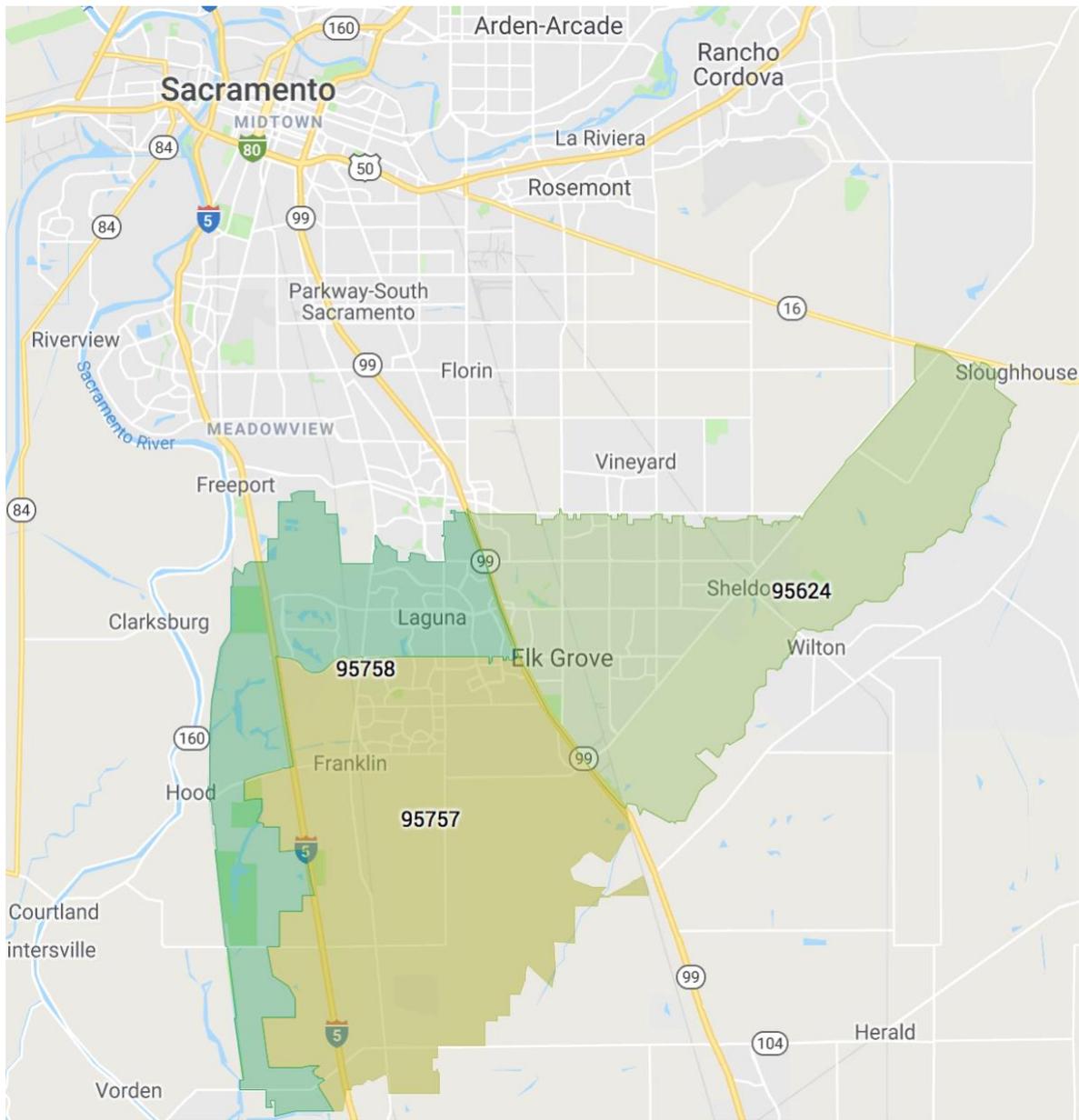
- **Value Added** is the difference between an industry's total output and the cost of its intermediate inputs for a given time period. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Value Added is a measure of the contribution to GDP made by an individual producer, industry, or sector. Value added multiplier of 1.5 means that for each dollar of value added by the Medical Center there will be an additional value added in the amount of 50 cents in other sectors because of related business-to-business and consumer spendings.
- **Indirect Business Taxes** consist of property taxes, excise taxes, fees, licenses, and sales taxes paid by businesses plus other non-tax charges such as fees, fines, licenses and permits. While all taxes during the normal operation of businesses are included, taxes on profits or income are not included. Indirect business taxes multiplier of 1.5 means that for each dollar of taxes generated by Medical Center additional 50 cents are paid as taxes by taxpayers in other sectors because of related business-to-business and consumer spendings.

Table 3. Medical Center Related Economic Impact Multipliers

Type of Multiplier	Direct	Indirect	Induced
Output Multiplier	Medical Center spendings	Local business to business purchases due to Medical Center	Local household purchases due to Medical Center spendings
Employment Multiplier	Number of jobs in the Medical Center	Number of jobs due to all resultant rounds of local industry purchases caused by Medical Center spendings	Number of jobs as a result of household purchases caused by Medical Center spendings
Labor Income Multiplier	Labor income of Medical Center employees and proprietors	Labor income due to all resultant rounds of local industry purchases caused by Medical Center spendings	Labor income as a result of household purchases caused by Medical Center spendings
Value Added	Total value added dollars created by Medical Center operations	Value added dollars due to all resultant rounds of local industry purchases caused by Medical Center spendings	Value added dollars as a result of household purchases caused by Medical Center spendings

Elk Grove area for the purposes of this study was defined to include three zip code areas: 95757, 95758, and 95624. Although the actual physical boundaries of the City of Elk Grove are not formally defined on the basis of zip codes, this approach allowed for a closer measurement of economic impact. The economic impact measuring mechanism (IMPLAN) only computes economic impact on zip code, county, state, and national bases. Therefore, rather than adjusting the impact results to try to reflect the administrative borders of the City of Elk Grove, it was deemed more appropriate to define the areas in a way that could be more accurately measured. For graphic representation of Elk Grove area definition for the purposes of this study see Figure 2.

Figure 2. Elk Grove area definition for the purposes of the study



Other Assumptions of the Study

To measure the economic impact of the CNU Medical Center, the study makes the following assumptions:

- The CNU Medical Center will operate as the for-profit hospital without tax exemptions;
- The CNU Medical Center construction will start in 2019 and be completed in 2022;
- No price changes after 2018 are built in the model, all impacts are estimated in 2018 NPV dollars, and for updating the analysis base IMPLAN dataset(s) for subsequent years should be used;
- This is the benefit-only study which scope does not include possible offsets (e.g., adverse impacts from rental or housing price increases, land acquisition, crowding out effects, traffic and environmental issues etc.) that should be the subject of separate studies;
- The in-depth analysis of positive social and socio-political benefits for the community (saved lives, improved physical, emotional, mental and spiritual well-being of people and communities, civic pride, community self-esteem etc.) is also out of scope of this report and a subject of a separate study;
- The presented analysis is only related to the health care aspect and is not modeling educational activity related impact of the Medical Center as the Teaching Hospital that will provide additional benefits for the City of Elk Grove and Greater Sacramento and is a subject of a separate study;
- All benefits are computed for a 10 year period and while in any individual year the numbers could vary, the totals represent aggregate impact over 10 years.

Model Input

The economic impact of the CNU Medical Center will be the result of two kinds of activities: Medical Center construction and Medical Center operations. Medical Center construction is planned to be complete by the end of 2022, therefore the first of these activities (construction) will take place during the period between 2019 and 2022 and the second one (operations) in 2023 and after. In order to make the economic impact quantifiable some realistic time period should be considered, therefore 10 years time horizon (till 2028) has been chosen for estimating Medical Center operations impact.

The numerical input in the model is based on the data provided by CNU. Given the longitudinal nature of the study the assumption of inflation is made, and deflator coefficients are used by IMPLAN for calculating real rather than nominal values. All estimates, both input and output, are made based on the net present value in 2018 dollars.

Model Output

The IMPLAN model quantifies the multiplier effect that occurs when new output or employment is added in the geographical area via the designated economic activities. The economic impact is measured for 536 industries identified by IMPLAN. For purposes of this study, the analysts then aggregated the results for the individual industries into 15 industry categories which were created in a manner that takes into account key sectors in the regional economy and are based generally on the North American Industrial Classification System (NAICS):

- Retailing
- Arts, entertainment, recreation
- Accommodations, food services

- Real estate, rental and leasing
- Construction
- Professional services/Administrative
- Health
- Education
- Manufacturing/Mining/Milling
- Wholesaling
- Farming & Forestry
- Local government
- State government
- Federal government
- Miscellaneous

Results

As described in the Methodology section, the IMPLAN analysis consists of five measures: Output, Employment, Labor Income, Value Added, and Indirect Business Taxes. Summary data from those tables are presented within the report narrative as exhibits.

The results are first presented for the total of Medical Center construction and Medical Center operations for both geographic areas. Then, the economic impact is presented for each of the two geographic areas. It is important to note that the economic impact on the Greater Sacramento includes the economic impact on the Elk Grove area.

Total Economic Impact

The combined economic impact of the Medical Center construction (2019-2022) and Medical Center operations (2023-2028) is described below for both geographic areas.

Impact on the Greater Sacramento area

The summary of the total economic impact on the Greater Sacramento area is presented in Exhibit A.

“Output” is estimated to be totally more than \$4.0 billion.

“Employment” is estimated to be equivalent to 24,129 jobs. .

“Labor Income” is projected to be more than \$1.7 billion.

“Value Added” is estimated to be more than \$2.4 billion.

“Indirect Business Taxes” generated is projected to be close to \$113 million.

Shown below are the total impacts for each of these five effects in the Greater Sacramento.

Exhibit A. Total impacts of Medical Center construction and Medical Center operations on Greater Sacramento economy

	Greater Sacramento Direct	Greater Sacramento Indirect	Greater Sacramento Induced	Greater Sacramento Total
Output	\$2,326,365,014	\$664,704,139	\$1,047,301,325	\$4,038,370,478
Employment	12,442	4,363	7,323	24,129
Labor Income	\$1,160,915,441	\$236,695,578	\$345,220,260	\$1,742,831,279
Value Added	\$1,436,709,705	\$376,793,522	\$637,890,898	\$2,451,394,126
Indirect Business Taxes	\$12,205,300	\$33,538,699	\$66,983,762	\$112,727,761

In summary, within the Greater Sacramento, the Output direct and indirect benefits will be nearly \$3.0 billion, and the induced benefits (i.e., consumption expenditures of direct and indirect sector employees) add another \$1.0 billion. Direct and indirect Employment benefits amount to 16,806 jobs, and the induced benefits add another 7,323 jobs. The direct and indirect benefits of Labor Income are projected to total nearly \$1.4 billion, and induced benefits add more than \$345 million. Direct and indirect Value Added will amount to more than \$1.8 billion, and the induced benefits add nearly \$638 million. Direct and indirect benefits for Indirect Business Taxes are projected to be close to \$46 million, and the induced benefits add nearly \$67 million.

Impact on the Elk Grove area

The summary of the total economic impact on the Elk Grove area is presented in Exhibit B.

“Output” is estimated to be totally more than \$3.1 billion.

“Employment” is estimated to be equivalent to 18,216 jobs.

“Labor Income” is projected to be more than \$1.4 billion.

“Value Added” is estimated to be more than \$1.9 billion.

“Indirect Business Taxes” generated is projected to be close to \$63 million.

Shown below are the total impacts for each of these five effects in Elk Grove area.

Exhibit B. Total impacts of Medical Center construction and Medical Center operations on Elk Grove area economy

	Elk Grove Direct	Elk Grove Indirect	Elk Grove Induced	Elk Grove Total
Output	\$2,326,365,014	\$290,286,045	\$508,266,597	\$3,124,917,655
Employment	12,122	2,258	3,836	18,216
Labor Income	\$1,176,897,715	\$116,609,366	\$157,727,472	\$1,451,234,553
Value Added	\$1,458,914,027	\$178,372,372	\$322,593,886	\$1,959,880,285
Indirect Business Taxes	\$11,893,786	\$12,624,041	\$38,246,830	\$62,764,657

In summary, within the Elk Grove area, the Output direct and indirect benefits will be more than \$2.6 billion, and the induced benefits (i.e., consumption expenditures of direct and indirect sector employees) add another \$0.5 billion. Direct and indirect Employment benefits amount to 14,380 jobs, and the induced benefits add another 3,836 jobs. The direct and indirect benefits of Labor Income are projected to total nearly \$1.3 billion, and induced benefits add more than \$150 million. Direct and indirect Value Added will amount to more than \$1.6 billion, and the induced benefits add more than \$322 million. Direct and indirect benefits for Indirect Business Taxes are projected to be more than \$24.5 million, and the induced benefits add nearly \$63 million.

Conclusion: The Contribution of CNU Medical Center to the Local Economy

Overall Economic Impact on Greater Sacramento and Elk Grove Areas

This study describes the economic impact of constructing the California Northstate University Medical Center. The output, employment, income, value added, and indirect business taxes data presented in this report document the tremendous upcoming contribution of CNU Medical Center both to the economies of the Greater Sacramento and Elk Grove areas. This impact will be made due to Medical Center construction (in 2019-2022) and operations (2023 and further).

The analysis was limited by the foreseeable period of the next 10 years (till 2028) and it operated with NPV 2018 US dollars. The study revealed that during this period Medical Center construction and operations will add to the economic output of the Greater Sacramento and Elk Grove areas, act as a catalyst for new economic activity, create new jobs, add to the labor income, produce net new indirect business taxes, and in general add to the gross state product of the region.

Specifically, the total economic impact to the Greater Sacramento region (to include direct, indirect, and induced effects) will:

- Produce \$4.04 billion of economic Output.
- Create 24,129 new jobs.
- Result in more than \$1.74 billion of new Labor Income.
- Yield more than \$2.45 billion of new Value Added.
- Generate nearly \$113 million in new Indirect Business Taxes.

This study finds that the CNU Medical Center acting as a catalyst for faster growth and accelerated economic activity between 2019 and 2028 will create a substantial incremental economic impact in the local Elk Grove area. The total incremental economic impact to Elk Grove area (to include direct, indirect, and induced effects) will:

- Produce \$3.12 billion of economic Output.
- Create 18,216 new jobs.
- Result in \$1.45 billion of new Labor Income.
- Yield \$1.96 billion of new Value Added.
- Generate \$62.7 million in new Indirect Business Taxes.

Economic Impact on Elk Grove on Per Capita Basis

The economic impact can benefit the residents of Elk Grove directly as a result of the incremental economic activity, with additional labor income and as a result of the increased business tax dollars that benefit the area. The details are presented in Exhibits C, D, and E.

Presented below in Exhibit C is an illustration of the scale of the total incremental economic activity relatively to the population size of Elk Grove. As shown, if the increased activity were to be divided equally, each household would benefit from the economic output in the amount of \$5,663.44 on average *each year*. Similarly, every resident of Elk Grove would benefit from economic output in the amount of \$1,786.59 on average *each year* due to the Medical Center construction and operations.

Exhibit C. Impact of Total Output on Residents of Elk Grove Area

Total Net Incremental Output within 10 years period	\$3,124,917,665
Number of Housing Units in Elk Grove*	55,177
Benefit per Household per year	\$5,663.44
Population of Elk Grove [†]	174,910
Benefit per Resident of Elk Grove per year	\$1,786.59

Presented in Exhibit D is the illustration of how the incremental labor income relates to the size of the Elk Grove area population. If the increased activity were to be divided equally, each household would benefit from the additional labor income in the amount of \$2,630.14 on average each year. Similarly, every resident of Elk Grove would benefit from the additional labor income in the amount of \$829.70 on average each year due to the Medical Center construction and operations.

Exhibit D. Impact of Total Labor Income on Residents of Elk Grove Area

Total Net Incremental Labor Income within 10 years period	\$1,451,234,553
Number of Housing Units in Elk Grove [‡]	55,177
Benefit per Household per year	\$2,630.14
Population of Elk Grove [§]	174,910
Benefit per Resident of Elk Grove per year	\$829.70

* Housing units in 95624, 95757, and 95758 zip code areas. Source: 2012-2016 American Community Survey 5-Year Estimates

† Population of 95624, 95757, and 95758 zip code areas. Source: 2012-2016 American Community Survey 5-Year Estimates

‡ Housing units in 95624, 95757, and 95758 zip code areas. Source: 2012-2016 American Community Survey 5-Year Estimates

§ Population of 95624, 95757, and 95758 zip code areas. Source: 2012-2016 American Community Survey 5-Year Estimates

Indirect Business Taxes Relatively to the Budget of the City of Elk Grove

Finally, while it is unknown how the incremental business tax dollars would be spent, shown below in Exhibit E (only a sample) are the percentages of each City agency/department “General Fund” portion of its budget that could be paid for by the incremental indirect business taxes due to CNU Medical Center construction and operations. It is important to note that the increased business tax dollars (on average \$6,276,466 per year) were applied to each budget and this does not mean it would cover all of the General Fund portions of the budgets shown below.

Exhibit E. “General Fund” portion of the budget relatively to the new indirect business taxes

Department	Budget 2018**	Proportion that could be covered by additional taxes††
Police	\$40,932,756	15.3%
Finance Department	\$24,992,990	25.1%
Development Services	\$21,032,944	29.8%
Public Works	\$18,419,918	34.1%
Non-Departmental	\$12,019,352	52.2%
Transit	\$9,053,731	69.3%
City Manager	\$4,212,426	149.0%
Solid Waste	\$3,610,667	173.8%
Administrative Services	\$3,426,373	183.2%
Risk Management	\$3,365,998	186.5%
Facilities	\$2,255,082	278.3%
City Attorney	\$1,235,873	507.9%
Neighborhood Services	\$920,761	681.7%
City Clerk	\$507,088	1237.7%
City Council	\$497,816	1260.8%
Civic Center	\$299,868	2093.1%
Drainage	\$205,839	3049.2%
Planning Commission	\$9,882	63514.1%

Non-quantifiable Impact

In addition to the directly quantifiable economic impact resulting from the construction and operations of the CNU Medical Center, additional impacts will result due to improving healthcare infrastructure of the area. The Medical Center will increase the attractiveness of life in Elk Grove and thus support new housing and employment activity. It is conceivable that once the news of the Medical Center being built becomes certain, developers will accelerate the construction of housing units (both planned and unplanned at this time), leading to faster population growth in the project area, and thereby resulting in accelerated economic

** Source: Open Budget Elk Grove <http://budget.elkgrovecity.org/#!/year/2018/operating/0/department>

†† If percent exceeds 100.0%, it indicates the taxes could pay more than the General Revenue budget request.

activity. Finally, to fully understand the total economic impact of the CNU Medical Center once completed, one must also consider the benefits that would accrue to all from the value of lives saved due to improved availability of emergency care in the area.

In recent years, Greater Sacramento area have struggled to attract new industries and jobs. Within this area, there appears competition between the communities for attracting new population and employment centers. Given the zero sum game nature of these efforts and results, the construction of the CNU Medical Center could have a significant impact on the success of the Elk Grove area community in the future in being a vibrant economic center. The investment in Medical Center construction will potentially have a tremendous payoff worth billions of dollars in the long run.