

# Scenario Planning Economic Impact of Expansion of Granite State Business Park

## Local Solutions for the Strafford Region

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# **Economic Impact of the Expansion of Granite State Business Park (Rochester, NH)**

prepared by

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for

Strafford Regional Planning Commission

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For more information about Granite State Future, go to [www.granitestatefuture.org](http://www.granitestatefuture.org).

## **The economic impact of the expansion of Granite State Business Park (Rochester, NH)**

A scenario was developed to measure the economic impact of the expansion of Granite State Business Park in Rochester, New Hampshire. The inputs used were provided by Karen Pollard, Deputy City Manager/Director of Community Development for the City of Rochester. Karen Pollard provided estimates of the number of jobs that are being added to the Granite State Business Park between 2013 and 2020. The estimated job counts were provided by business name, year of expansion, and a brief explanation of the type of business activity related to the expansion. According to these inputs, there were 595 jobs created in the Granite State Business Park in 2013. Each year between 2013 and 2020, additional jobs are added and according to Karen Pollard's estimates, by 2020 approximately 2,820 jobs will have been created in relation to the expansion of the Granite State Business Park.

This impact analysis of the expansion of Granite State Business Park on Strafford County's economy was conducted using the Economic and Labor Market Information Bureau's New Hampshire Econometric Model – a REMI Policy Insight + ® model.<sup>1</sup>

By using this econometric model, we are able to estimate both the number of direct jobs added in Strafford County as well as the indirect and induced jobs gained in the region.

### **Inputs and assumptions**

The direct jobs created in Strafford County due to the expansion of the Granite State Business Park were phased in from 2013 to 2020. It was assumed that 595 direct jobs were created in Strafford County in 2013, and by 2020, there will be 2,820 direct jobs created. The industry data provided was translated into the REMI model's NAICS-based industries.<sup>2</sup>

A small portion of the jobs created in the Granite State Business Park were in businesses that relocated from other parts of Rochester. These jobs were therefore not new jobs to the region. The result of this scenario should therefore be interpreted as the impact of the expansion of the Granite State Business Park, which included retention of existing businesses in the region.

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1. Product of Regional Economic Models, Inc. of Amherst, MA.

2. NAICS is the North American Industry Classification System, used to classify business establishments according to type of economic activity (process of production) in Canada, Mexico and the United States.  
An establishment is typically a single physical location, though administratively distinct operations at a single location may be treated as distinct establishments. Each establishment is classified to an industry according to the primary business activity taking place there.

The direct jobs created were added to the following industries in Strafford County between 2013 and 2020:

<b>REMI Industry</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Accommodation	0	0	0	0	0	100	100	100
Aerospace product and parts manufacturing	375	600	775	1,000	1,125	1,245	1,420	1,695
Computer and peripheral equipment manufacturing	50	50	50	50	60	60	60	60
Engine, turbine, power transmission equipment manufacturing	0	0	15	115	215	215	215	215
Food services and drinking places	0	0	0	10	150	150	150	150
Management of companies and enterprises	0	0	0	0	55	70	70	80
Medical equipment and supplies manufacturing	130	180	230	280	330	330	330	330
Plastics product manufacturing	0	0	40	40	40	55	55	55
Textile mills and textile product mills	30	60	60	60	60	75	75	75
Warehousing and storage	10	50	50	50	50	60	60	60
<b>Total Business Park Expansion</b>	<b>595</b>	<b>940</b>	<b>1,220</b>	<b>1,605</b>	<b>2,085</b>	<b>2,360</b>	<b>2,535</b>	<b>2,820</b>

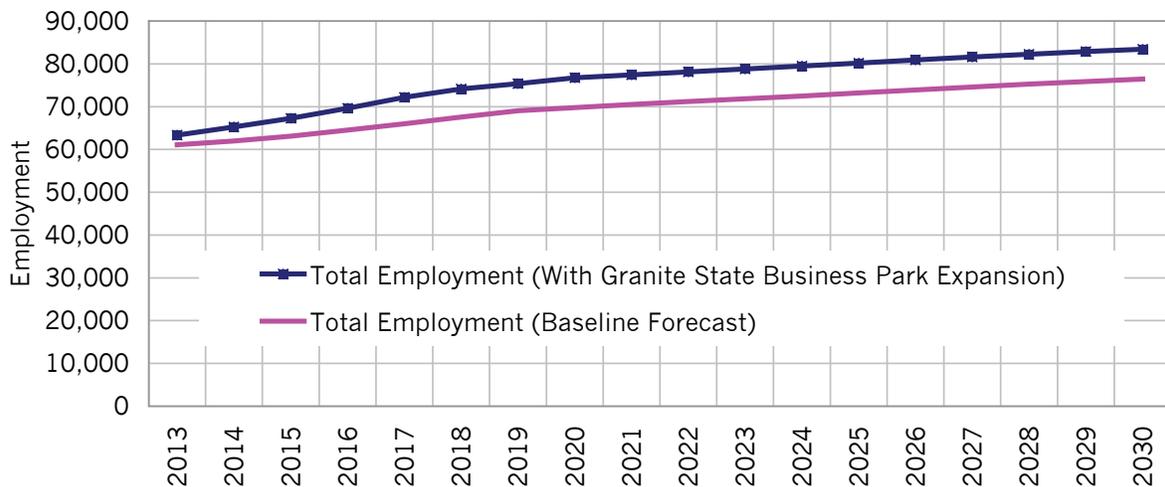
It is assumed that the anticipated increase in output due to the additional business activity at Granite State Business Park is driven by an increase in demand from outside the region. In other words, the output produced by businesses in the Granite State Business Park is mainly exported to markets outside of Strafford County as well as outside of the United States (international exports).

The following is the anticipated implications of the expansion of the Granite State Business Park on Strafford County. The results include the direct jobs generated at the Granite State Business Park, as well as the secondary (in-direct and induced) jobs added in Strafford County. The results also include the impacts that this expansion will have on the region in terms of added gross domestic product, personal income and population.

**Results: Impact on Strafford County**

- In 2013, a total of 1,376 direct, indirect and induced jobs<sup>3</sup> would be created in Strafford County.
- By 2020, at full implementation of the expansion at Granite State Business Park, total impact on jobs will have increased to 6,232 direct, indirect and induced jobs. By 2030, ten years after the full expansion has been implemented, total job creation will reach 6,478 jobs above the employment baseline in the region.

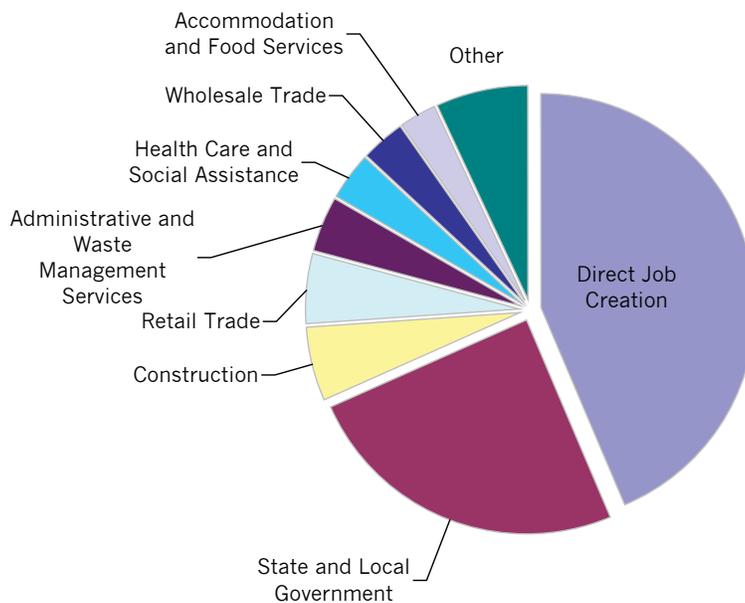
**Comparison of the baseline employment outlook for Strafford County with the employment outlook for the county with the expansion of Granite State Business Park**



<sup>3</sup> Employment in the REMI model is based on Bureau of Economic Analysis (BEA) definition of employment. The BEA estimates of employment and wages differ from covered employment data because BEA makes adjustments to account for self-employment. So the employment count in the REMI model is larger than what is reported by the Economic and Labor Market Information Bureau (ELMIB), New Hampshire Employment Security. The REMI model does not distinguish between full-time and part-time jobs.

- In addition to the 595 direct jobs created in 2013, secondary jobs are created in a variety of industries. *Construction* (+74), *Retail trade* (+74), and *Administrative and waste management services* (+54) are contributing the most jobs to private industries. Jobs will also be generated in *State and local government* (+341).<sup>4</sup>

**In 2013, secondary jobs created due to the expansion of the Granite State Business Park outnumber the direct jobs created.**



<sup>4</sup>. The impact on local and state government jobs would best be interpreted as employment (above the baseline projected government employment) that would be required in order to provide for the overall increase in the demand for shared government services. Shared services could include education, public safety, water and sewage treatment, road construction and maintenance, and other services related to an increase in business activity and resident population.

- By 2020, the distribution of the secondary jobs created would be as follows: *Construction* would create 506 jobs; *Retail trade* would create 357 jobs; and *Accommodation and food services* would create 276 jobs. *State and local government* would create 1,358 jobs (See footnote 4 on page 4).

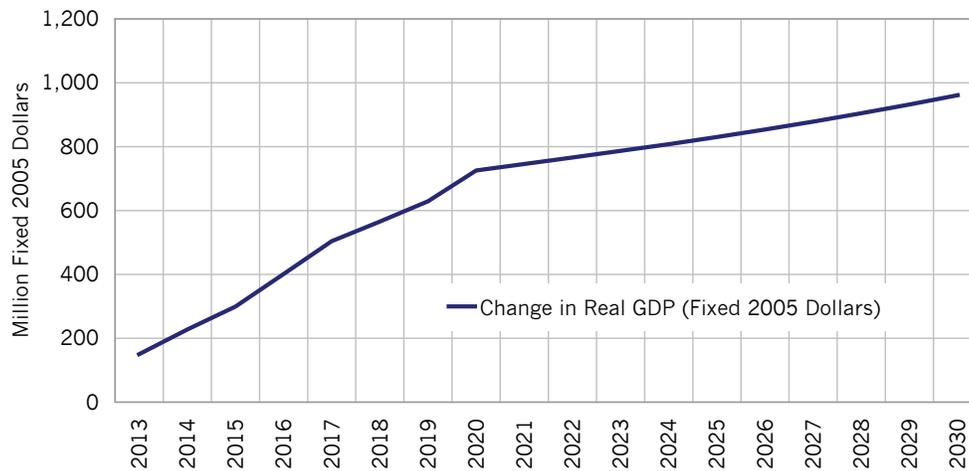
Industry	2020	
	Direct Jobs	Total jobs created
Manufacturing	2,430	2,447
Construction		506
Accommodation and Food Services	250	452
Retail Trade		357
Administrative and Waste Management Services		241
Health Care and Social Assistance		232
Wholesale Trade		168
Other Services, except Public Administration		122
Professional, Scientific, and Technical Services		81
Management of Companies and Enterprises	80	80
Real Estate and Rental and Leasing		72
Transportation and Warehousing	60	59
Arts, Entertainment, and Recreation		41
State and Local Government*		1,358
<b>Total Jobs</b>	<b>2,820</b>	<b>6,216</b>

\* To reiterate the statement made in the footnote 4, the increase in jobs created assigned to *State and Local government* is associated with an increased demand for shared government services, as more business activities are occurring in the area and as the area will attract additional population. Shared services include a possible built out of local infrastructure project such as roads, power lines and water and sewage system. But if the local infrastructure is already built and if the local capacity for residential services (e.g. schools) is not used to its potential, some of these additional jobs will not occur. In this scenario, additional jobs in *state and local government* should rather be expressed as an increase in local government revenue and expenditure. But as local government revenue and expenditure are not built into the REMI model, jobs in *state and local government* should be viewed as a proxy for additional public revenue and spending.

**Gross Domestic Product**

- In 2013, the first year of the expansion, Strafford County Gross Domestic Product (GDP) will have increased above the baseline by \$150.3 million in fixed 2005 dollars. By 2020, the GDP in the region will have grown to \$725.6 million in fixed 2005 dollars above the baseline and it will continue to grow throughout the forecast period.
- The economic activity at the Granite State Business Park in 2013 will account for 3.6 percent of total GDP in Strafford County. By 2020, total economic activity due to the expansion of Granite State Business Park will account for 13.7 percent of the county’s GDP.

**The impact on GDP in Strafford County due to the expansion of Granite State Business Park**



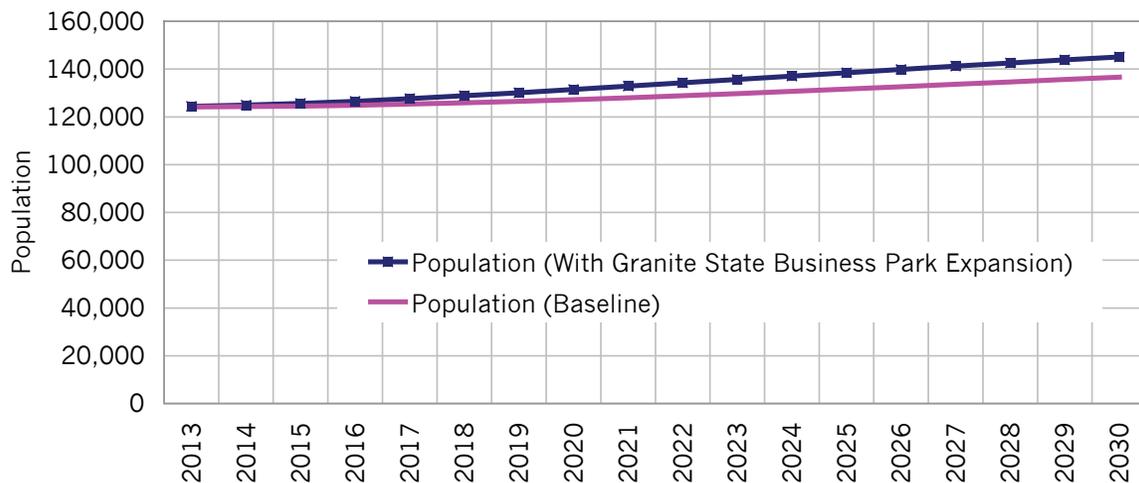
**Personal Income**

- Total Real personal income will have increased by \$55.8 million in fixed 2005 dollars in 2013. By 2020, the increase in real personal income will have grown by \$348.1 million in fixed 2005 dollars.
- Real personal income per capita in Strafford County will gain \$375 in fixed 2005 dollars in 2013. By 2020, real personal income per capita will be \$1,129 in fixed 2005 dollars above the original baseline for the county.

**Population**

- Strafford County’s population would gain 279 persons above baseline in 2013. By 2020, the county would gain 4,265 residents above the forecast baseline and in response (over time) in-migration will continue to increase. By 2030, the population of Strafford County would gain close to 8,500 persons above the projected population baseline (a 6.2 percent increase above the forecasted baseline).

**The anticipated population growth in Strafford County in response to the expansion of Granite State Business Park**



**Impact of job creation on Strafford County’s unemployment rate**

- Despite the fact that 1,376 jobs were added to Strafford’s County economy in 2013, only 318 more Strafford County residents are going to be employed. The expansion of the Granite State Business Park will therefore have little impact on the unemployment rate (0.1 percentage point). By 2020, when a total of 6,232 direct, indirect and induced jobs have been created in the county, about half of the additional jobs are going to be held by Strafford County residents (+3,134 Residence Adjusted Employed Population). As more of county’s residents are employed, the unemployment rate would be 0.3 percentage point lower than the estimated unemployment rate would be in 2020 with no expansion. The reason why the unemployment rate is lowered only slightly is that the increase in employment is absorbed by additional workers commuting into the county and over time, the additional employment is absorbed by population migrating into the county.
- The 2012 annual average unemployment rate in Strafford County was 5.5 percent.

**Jobs created in Granite State Business Park in comparison to employed residents in Strafford County**



**Job Multiplier**

- The multiplier effect on Strafford County of each job created in the Granite State Business Park is, on average, between 2.2 and 2.3 jobs<sup>5</sup> — including the direct job created — annually over the entire simulation period.

<sup>5</sup>. A job multiplier of more than one indicates that the new job created in the local economy have a ripple effect that generates more employment in the region. A multiplier of less than one indicates that some of the current employment in the region would be eliminated due to the competition from the expanding businesses.

The explanation below is the economic theory and empirical data behind the REMI model.

### **The REMI Model**

REMI Policy Insight® is a structural model, meaning that it clearly includes cause-and-effect relationships.

The model is based on two key underlying assumptions from mainstream economic theory: households maximize utility and producers maximize profits. Since these assumptions make sense to most people, lay people as well as trained economists can understand the model. The tool is often used by economic developers and planners to gauge the potential impact on a regional economy of proposed projects such as transportation infrastructure, office and retail development, relocation or expansion of businesses, etc.

In the model, businesses produce goods and services to sell locally to other firms, investors, governments, and individuals, and to sell as exports to purchasers outside the region. The output is produced using labor, capital, fuel, and intermediate inputs. The demand, per unit of output, for labor, capital, and fuel depends on their relative costs, since an increase in the price of any one of these inputs leads to substitution away from that input to other inputs. The supply of labor in the model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects the population size. People will move into an area if the real after-tax wage rates or the likelihood of being employed increases in a region.

Supply and demand for labor determine the wage rates in the model. These wage rates, along with other prices and productivity, determine the cost of doing business for each industry in the model. An increase in the cost of doing business causes either an increase in prices or a cut in profits, depending on the market for the product. In either case, an increase in costs would decrease the share of the local and U.S. market supplied by local firms. This market share, combined with the demand described above, determines the amount of local output. Many other feedbacks are incorporated in the model. For example, changes in wages and employment impact income and consumption, while economic expansion changes investment, and population growth impacts government spending.

The effects of a change scenario to the model are determined by comparing the baseline REMI forecast with an alternative forecast that incorporates the assumptions for the change scenario.

