

New Hampshire North Country Industrial Development Simulation

Estimated impacts of
economic development in the
three northern counties of
New Hampshire

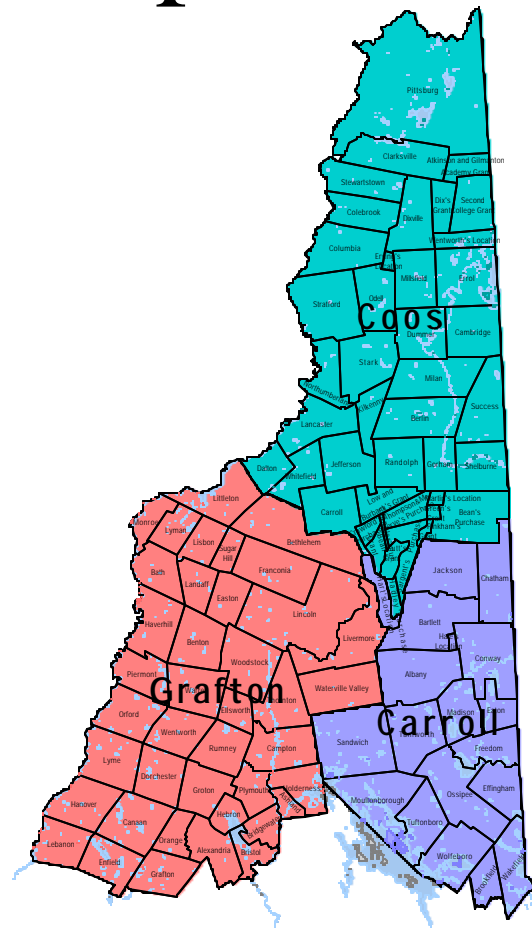
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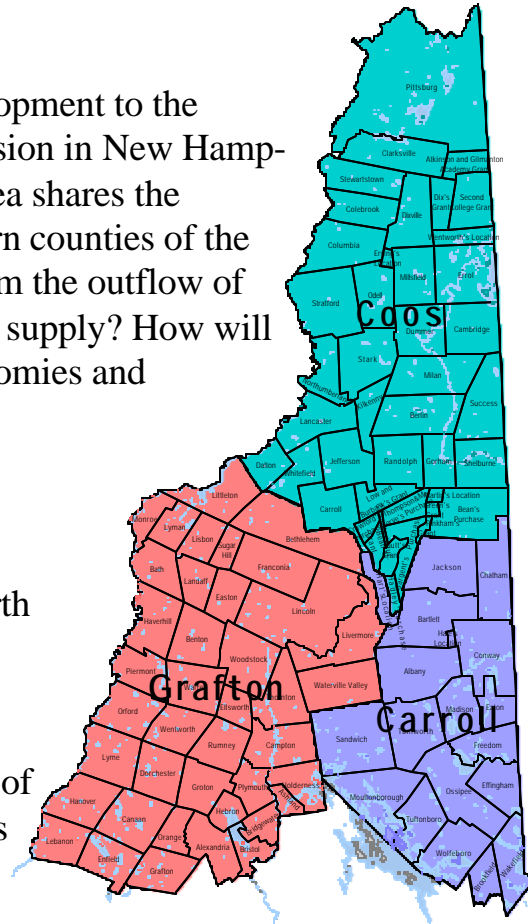


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Introduction:

How to extend the benefits of economic development to the North Country has long been a topic of discussion in New Hampshire. The public policy concern is that this area shares the wealth and prosperity that has come to southern counties of the state. Can we attract development that will stem the outflow of North Country youth and ensure a stable labor supply? How will this new businesses activity impact local economies and demographics?

To examine these questions, we constructed a simulated sequence of events, proposing that three new employers would move into the North Country. We played out the results of these economic “shocks”, short term and long term, using the New Hampshire ten-county REMI regional econometric model. For the purposes of this study, the “North Country” was defined as Grafton, Carroll, and Coos Counties.



We assumed that three manufacturers would move in to the region in 2003, one to each county. We increased each of these businesses to their optimum employment by 2008, and kept that level steady through 2035, the end of the projection period. The table below sets out these assumptions.

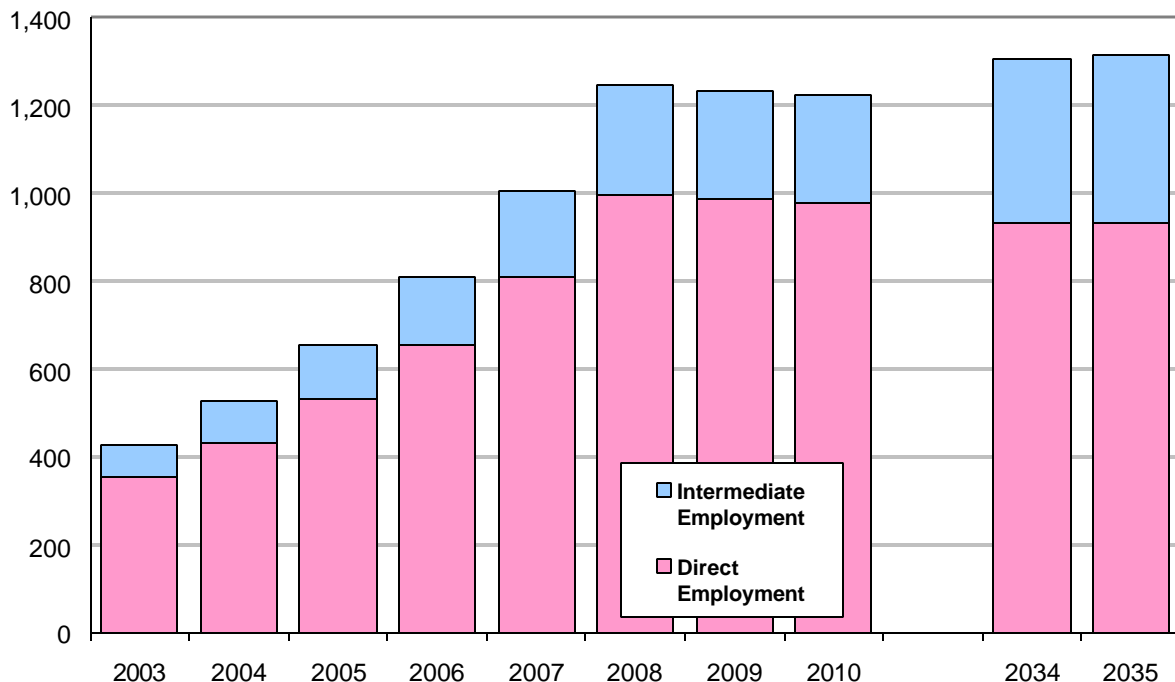
Firm – County	Industry	Year/Jobs Added to Baseline Employment									
		2003	2004	2005	2006	2007	2008	2009	...	2034	2035
Firm 1 – Grafton County	Electrical Equipment	100	132	174	230	303	400	400	...	400	400
Firm 2 – Carroll County	Machinery and Computers	100	125	155	193	241	300	300	...	300	300
Firm 3 – Coos County	Electrical Equipment	100	125	155	193	241	300	300	...	300	300
3-Firm/County Total	3-Industry Total	300	382	484	616	785	1,000	1,000	...	1,000	1,000

The following charts depict the increased economic activity that could be expected in the North Country given the county and industry distribution of the injections to employment in the simulation.

I. Direct and Intermediate Employment Effects

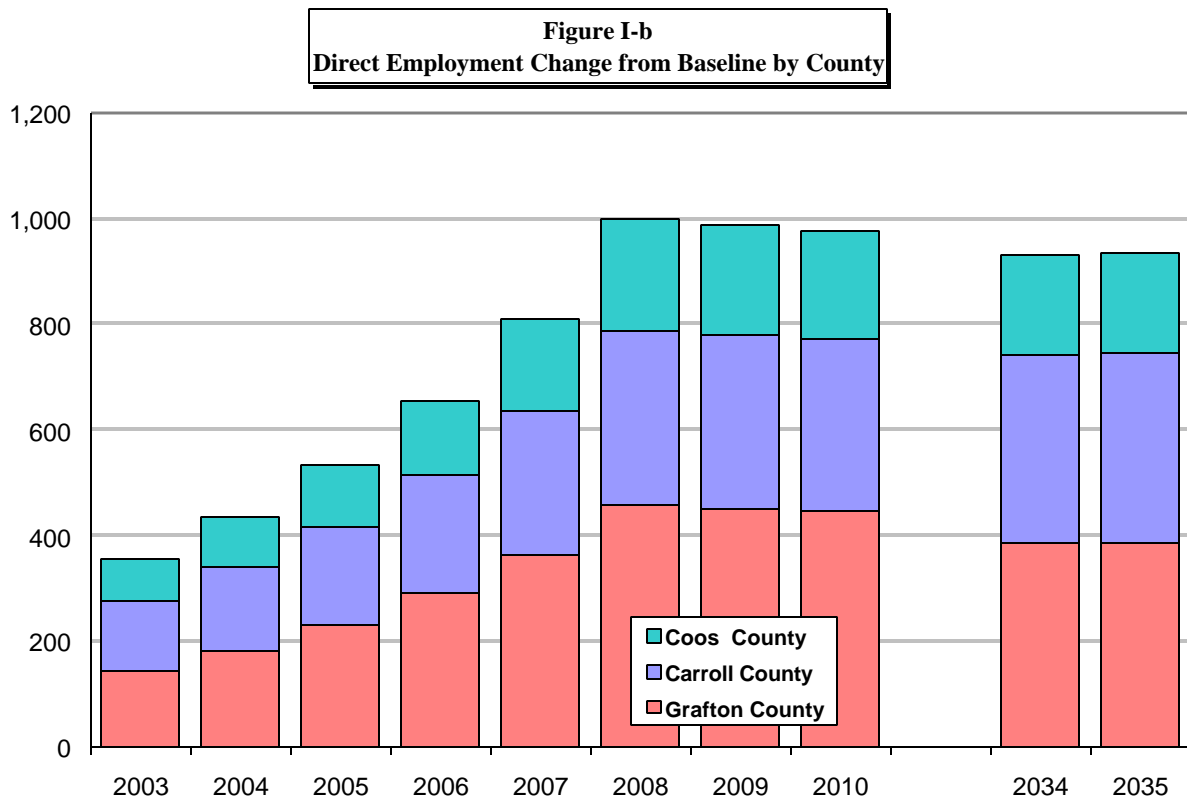
- Direct effects are those generated within the specific industries stimulated. 353 jobs are added to these industries in the first year. At its peak in 2008, direct effects add nearly 1,000 jobs.
- Intermediate effects occur in other local industries as a result of secondary effects of this stimulation. Intermediate employment grows steadily throughout the forecast period adding 76 jobs in 2003 and 383 by 2035.

Figure I-a
Total Direct and Intermediate Employment Change from Baseline
for North Country Region



Direct Employment Change by County

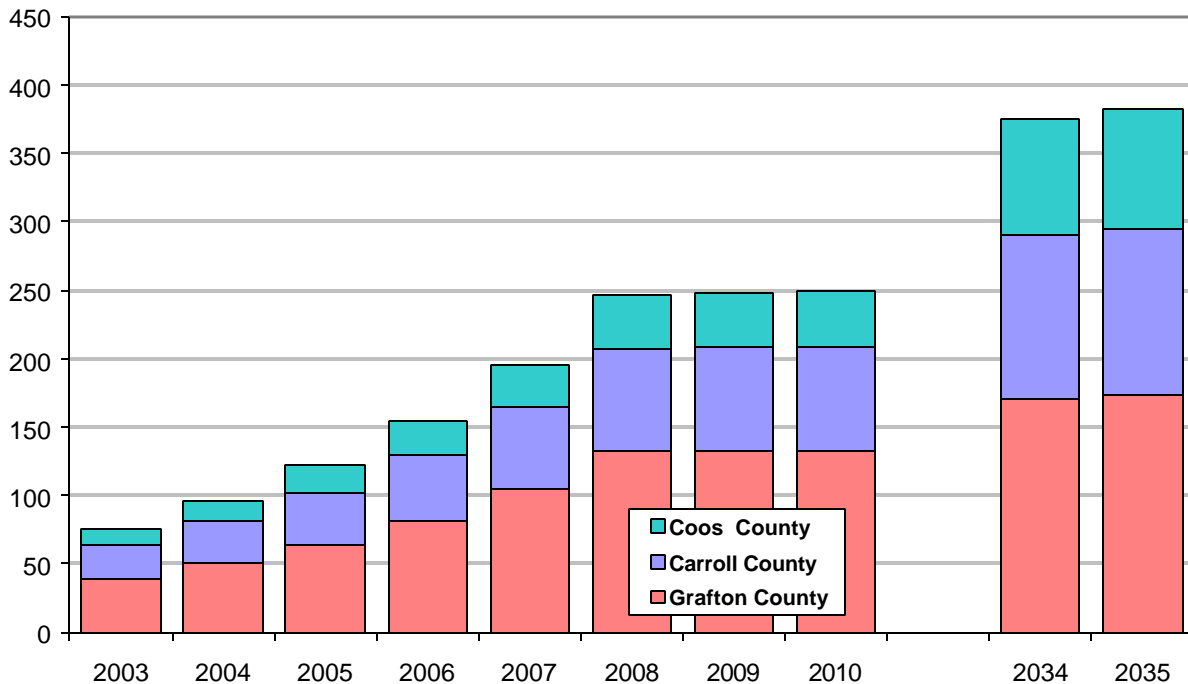
- The direct effects of the economic stimulus are felt most strongly in Grafton County.
- Coos County's direct employment change is smallest, in part because some of its workers are attracted to Grafton and Carroll Counties due to more favorable economic growth simulated there.



Intermediate Effects by County

- The intermediate effects of the stimulus in each county, though smaller, show a distribution similar to the direct effects.

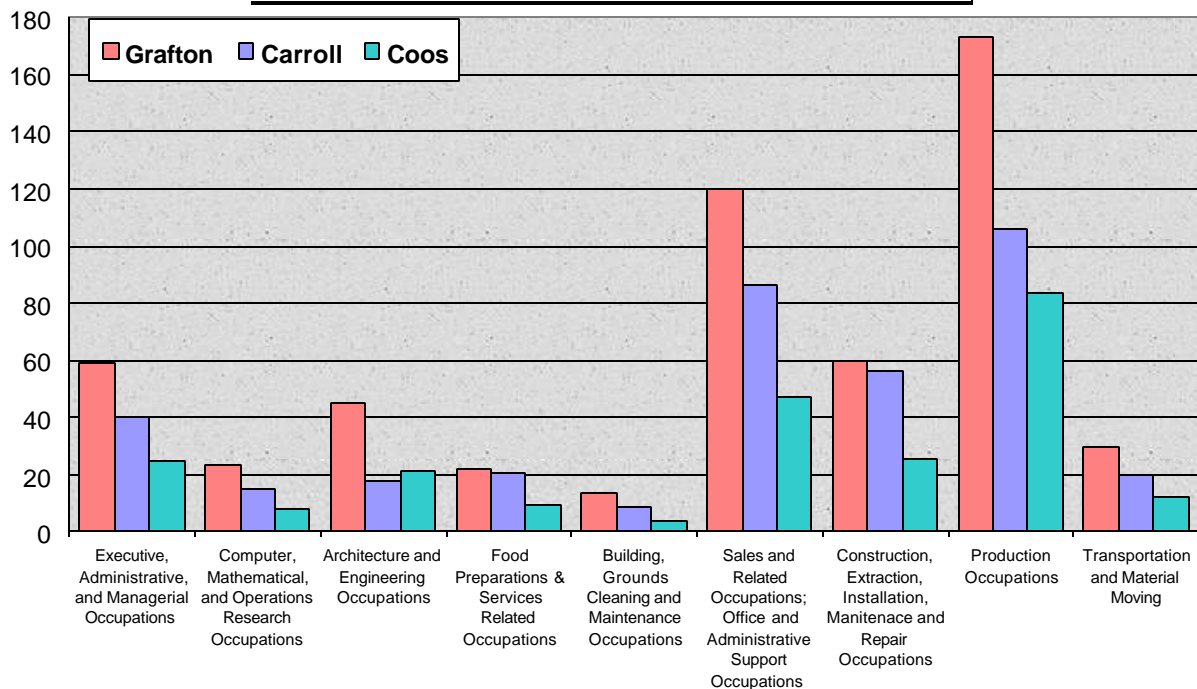
Figure I-c
Intermediate Employment Change from Baseline by County



II. Short Term Occupational Employment Change

- Because the firms chosen to locate in the North Country were manufacturing firms, the largest occupational change, reflecting the direct effects of the simulation, was to Production Occupations. If different industries had been chosen, different occupations would have been affected directly.
- The second largest change occurs in Sales and Administrative Support Services - largely an intermediate effect.

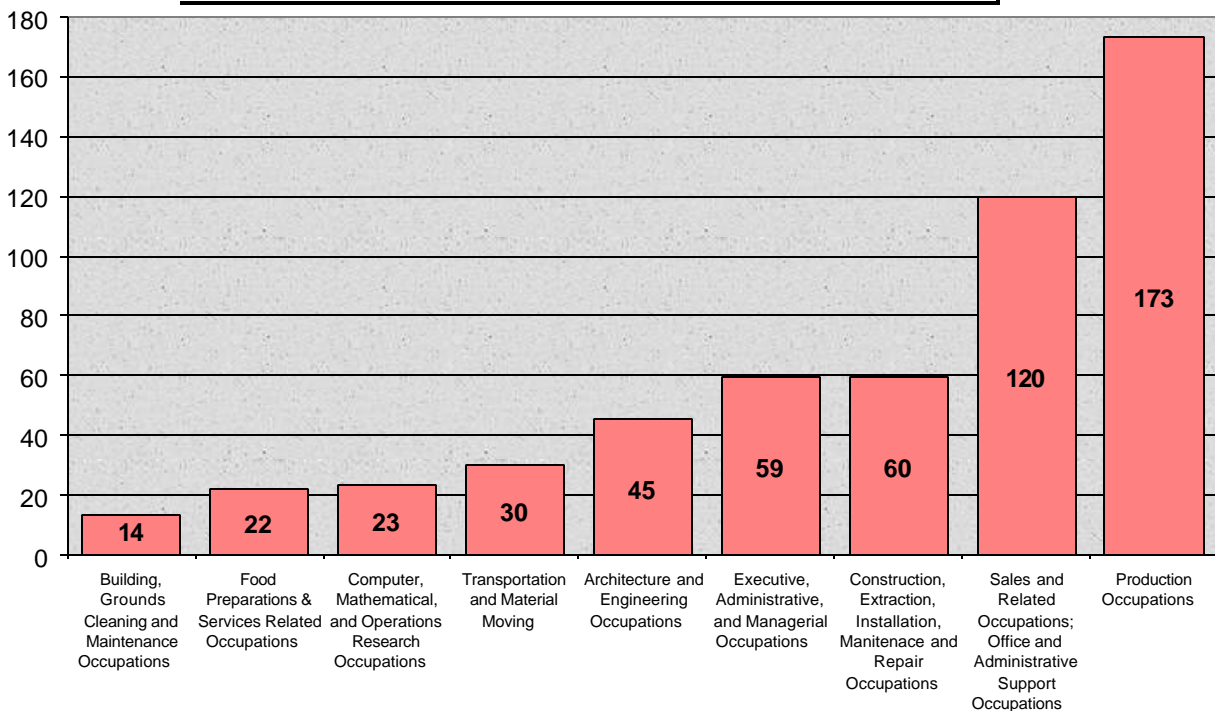
Figure II-a
Net Change in Occupational Employment from Baseline by County
for the 5th Projected Year



Grafton County Short Term Occupational Employment Change

- The occupational clusters with the 4 largest changes are common to each county.
 - Production
 - Sales and Administrative Support Services
 - Construction
 - Executive and Managerial Occupations

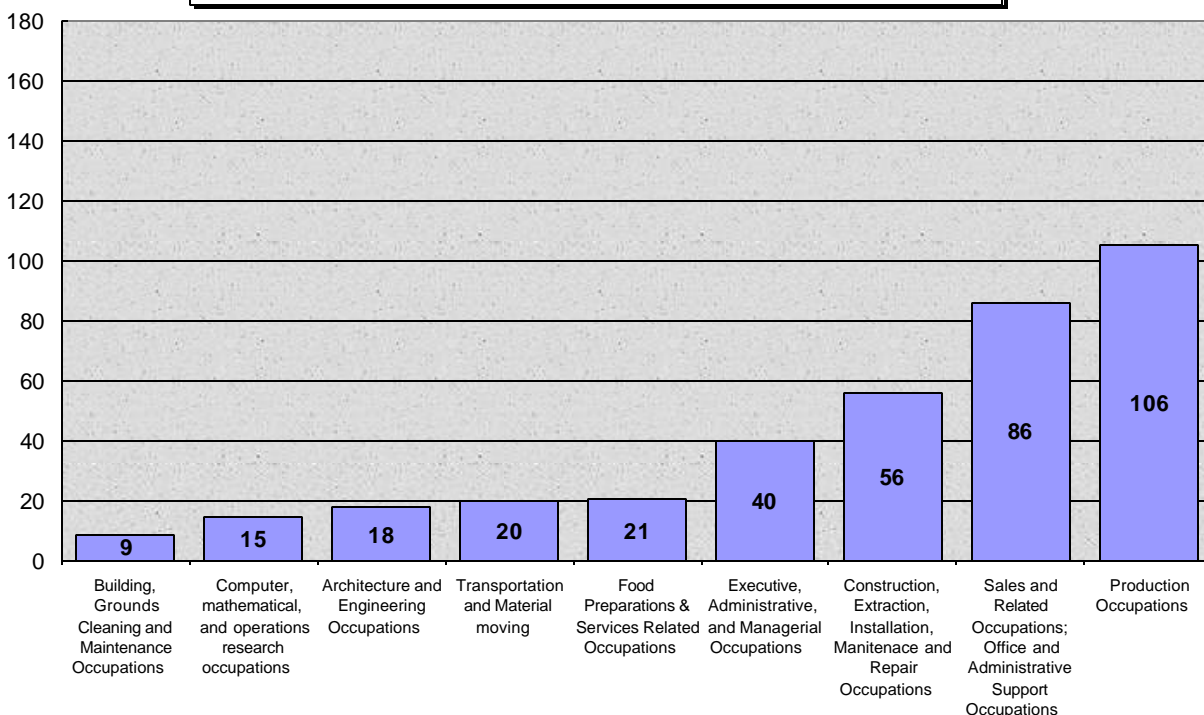
Figure II-b
Net Change in Occupational Employment from Baseline for Grafton County
for the 5th Projected Year



Carroll County Short Term Occupational Employment Change

- The occupational sectors with smaller changes differ in size and rank from county to county.

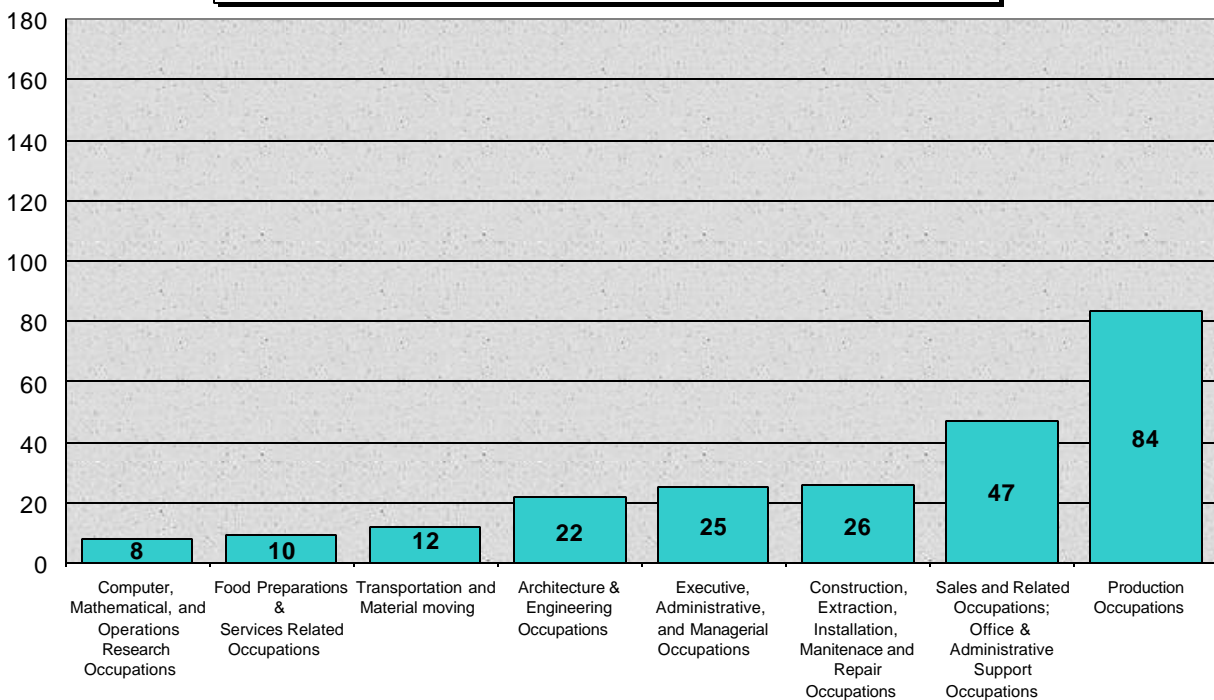
Figure II-c
Net Change in Occupational Employment from Baseline for Carroll County
for the 5th Projected Year



Coos County Short Term Occupational Employment Change

- The occupational changes in Coos County are the smallest in magnitude.

Figure II-c
Net Change in Occupational Employment from Baseline for Coos County
for the 5th Projected Year



III. Gross Product and Personal Income

- County Gross Product grows sharply in the short term and continues in a steady growth pattern.
 - Though short term GRP growth is greatest in Grafton County, eventually Carroll and Coos overtake it. This is because the short term stimulation is larger in Grafton County. In the long term, however, the stimulation to Grafton County is smaller relative to the entire county economy. Therefore the impact becomes diluted as the new businesses compete with existing businesses for market share.
- Personal income grows modestly in each county.

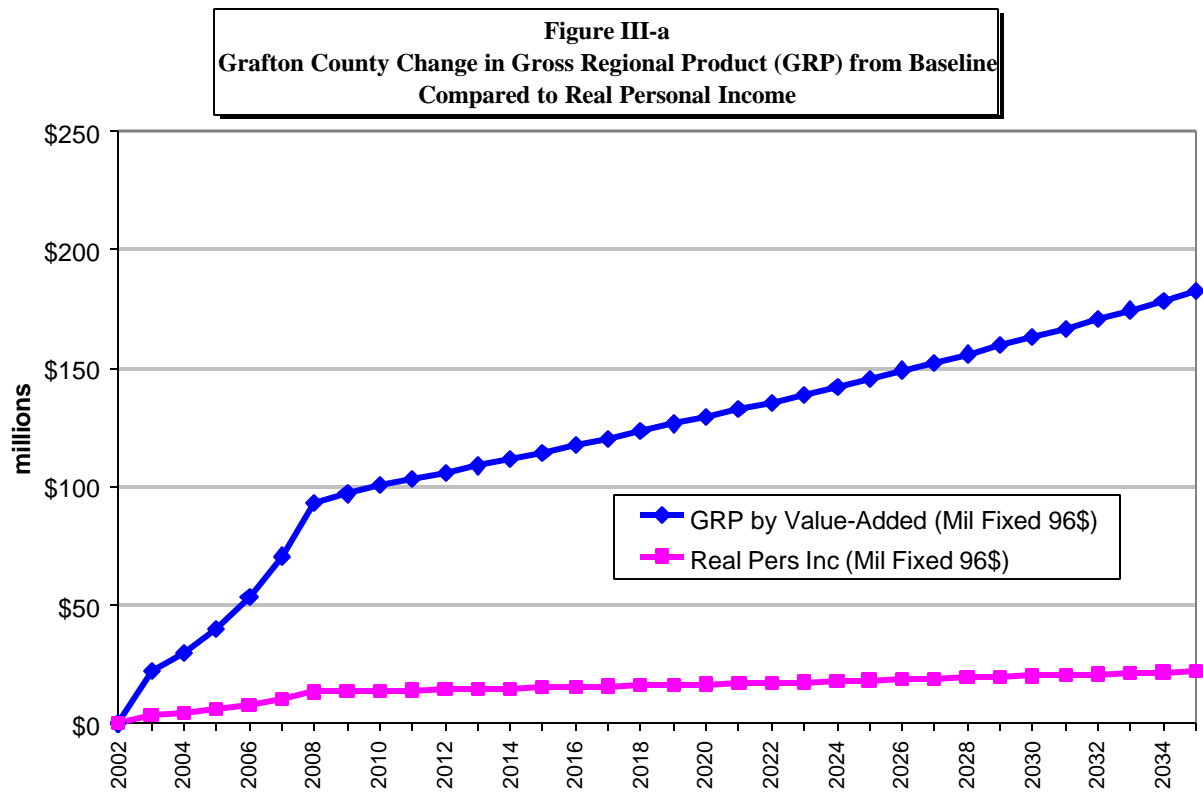


Figure III-b
Carroll County Change in Gross Regional Product (GRP) from Baseline
Compared to Real Personal Income

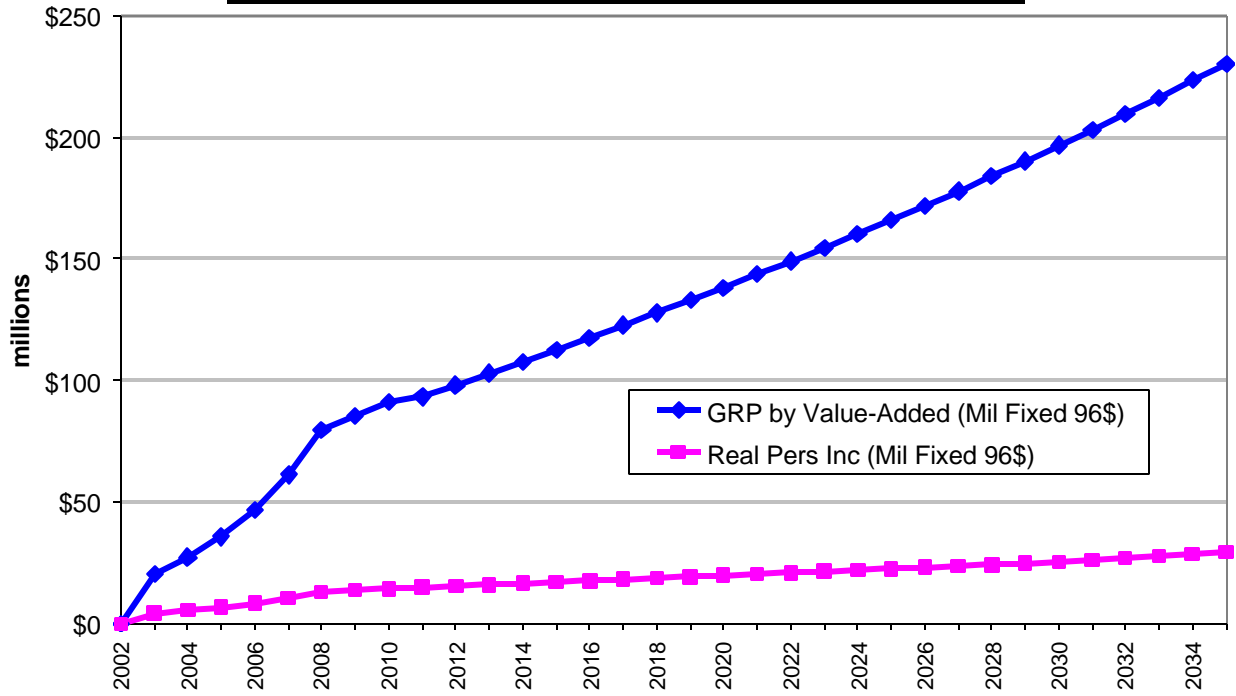
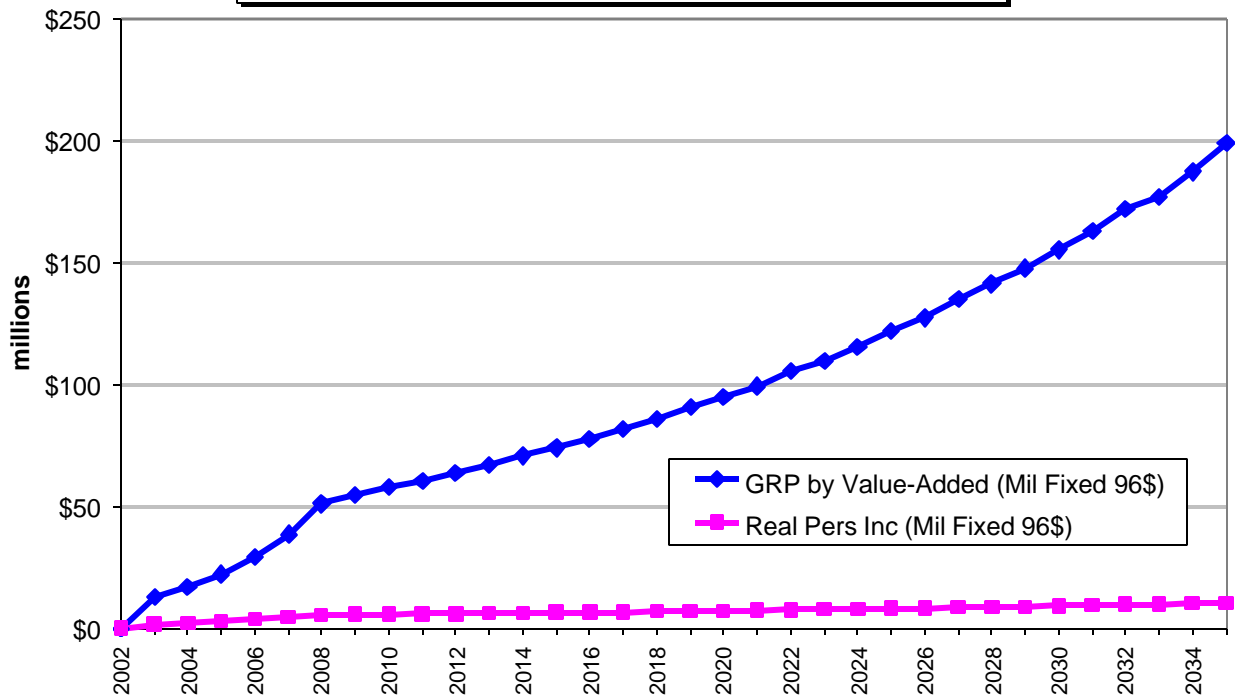
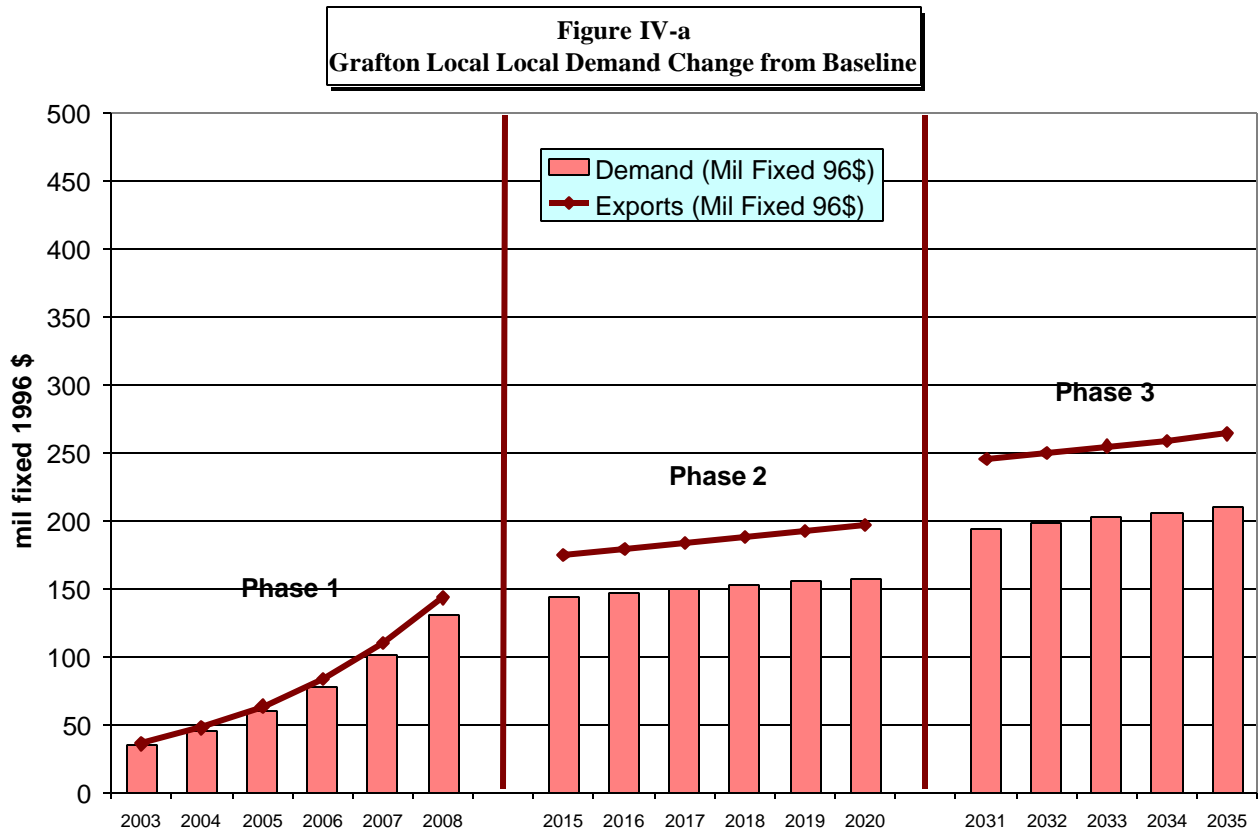


Figure III-c
Coos County Change in Gross Regional Product (GRP) from Baseline
Compared to Real Personal Income

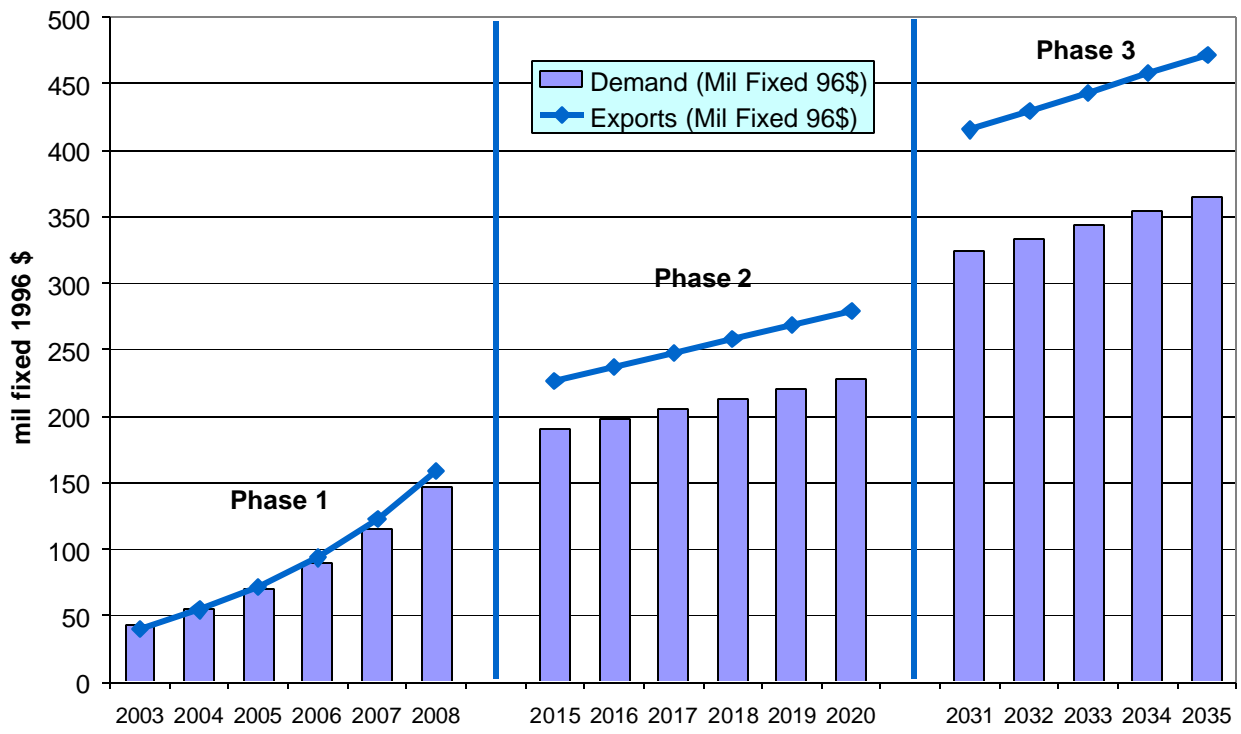


IV. Changes in Local Demand and Exports

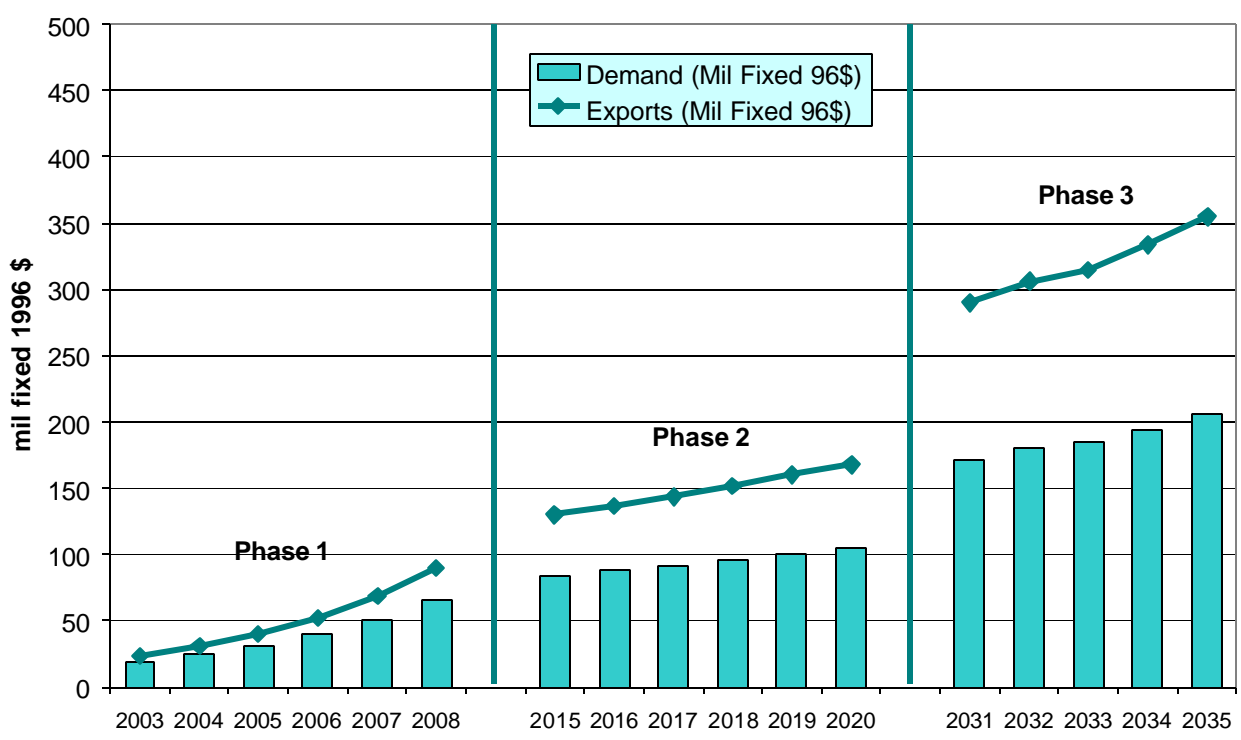
- For each county, exports outside the county (foreign and domestic) grow sharply in the short term.
- In the medium range export growth remains stable.
- Long range - growth tapers in Grafton but accelerates in Carroll and Coos.
- Changes in local demand parallel changes in exports due to income generated by the stimulus of new industry.



**Figure IV-b
Carroll County Local Demand Change from Baseline**



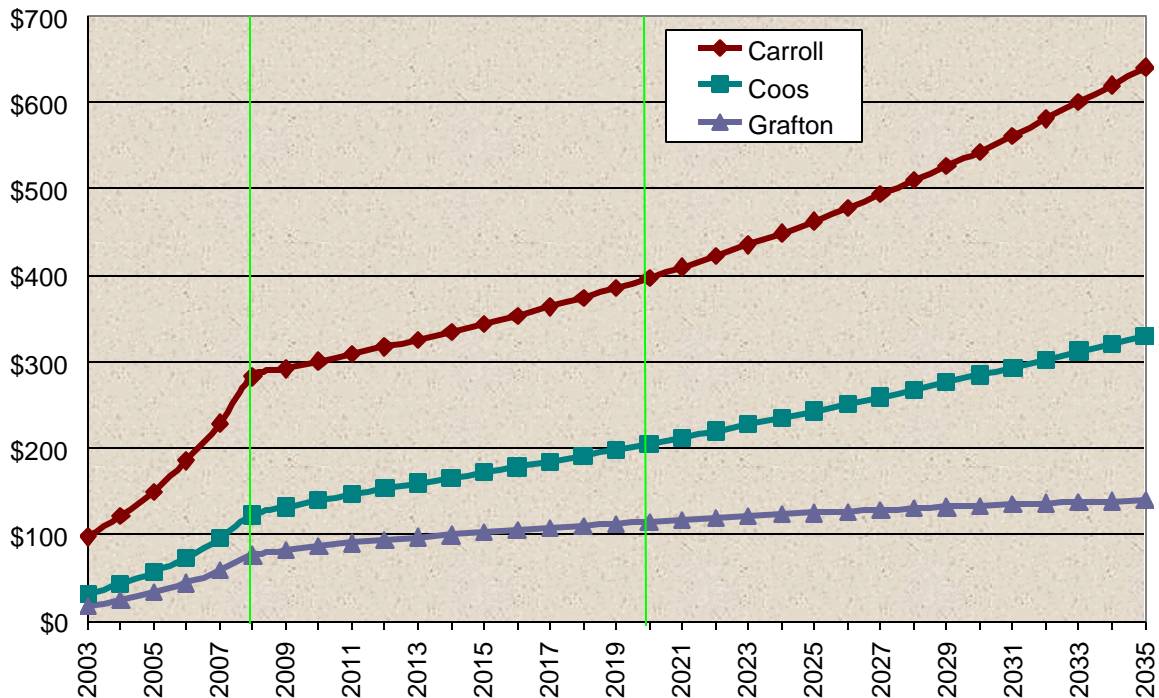
**Figure IV-c
Coos County Local Demand Change from Baseline**



V. Wage Changes

- A direct effect on wages is seen in the short term in each county.
- Average annual wage gains are sustained over the long run, showing long term benefits to the simulated employment growth.
 - Medium and long range wage growth is greater in Carroll and Coos, in part because their wages start at a lower level.
 - In Grafton, with relatively higher wages and a larger economy, the new manufacturing jobs would not exert significant upward pressure on baseline wage levels.

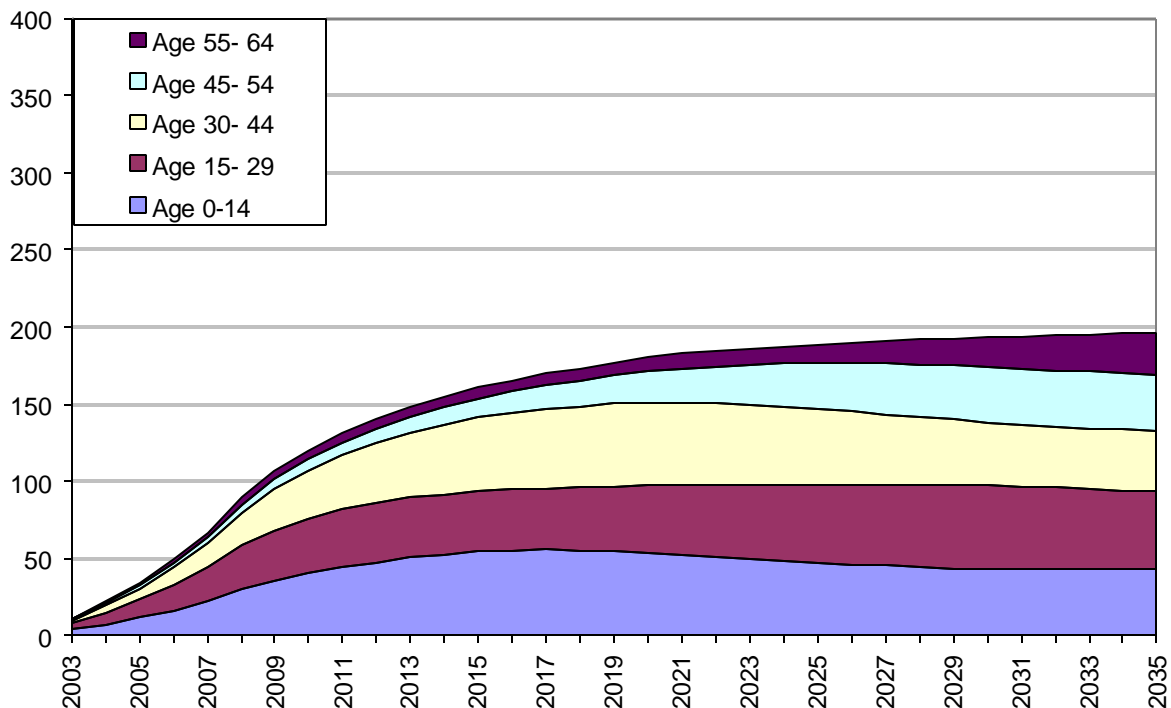
Figure V
Effect of Simulated New Employers on North Country Counties' Annual Wage Rate - Change from Baseline



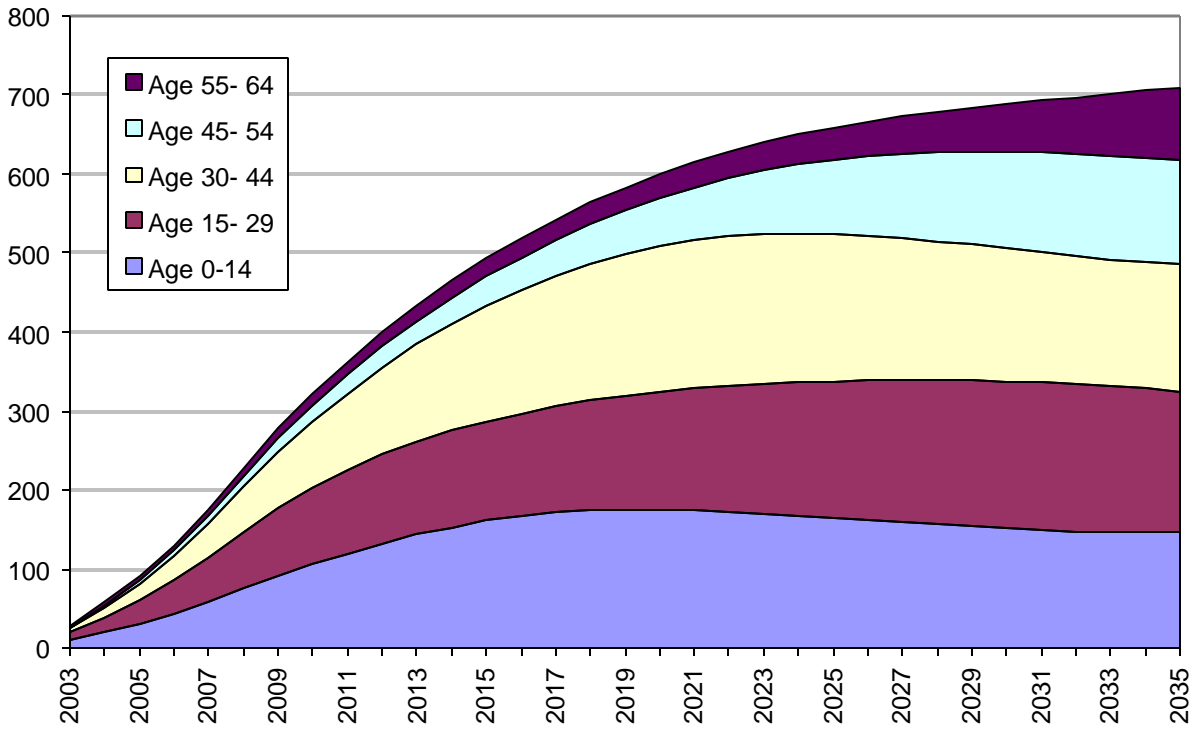
VI. Changes in Population

- Each county's population grows as a result of the economic stimulation.
 - Carroll County shows significant growth in the working age population compared to the baseline.
 - Coos County grows the least. With the lowest labor force participation rate, particularly among women, of all New Hampshire counties, it can absorb the new jobs with little population growth.

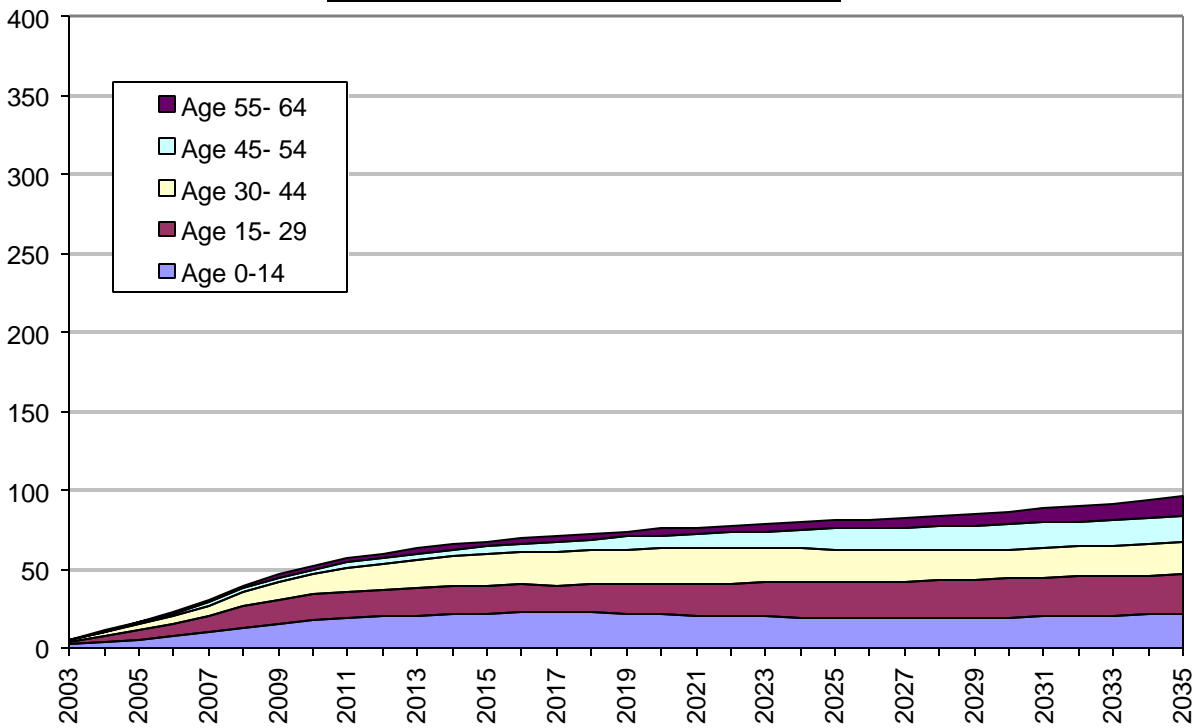
Figure VI-a
Grafton County Population Change from Baseline



**Figure VI-b
Carroll County Population Change from Baseline**



**Figure VI-c
Coos County Population Change from Baseline**



VII. Migration

- Carroll County migration shows the largest change from the baseline with migration peaking in 2008 and then tapering back toward the baseline.
- Coos, with its low baseline labor force participation may not need to import as much additional labor.
- Grafton may attract commuters from adjacent Coos and Sullivan counties.

