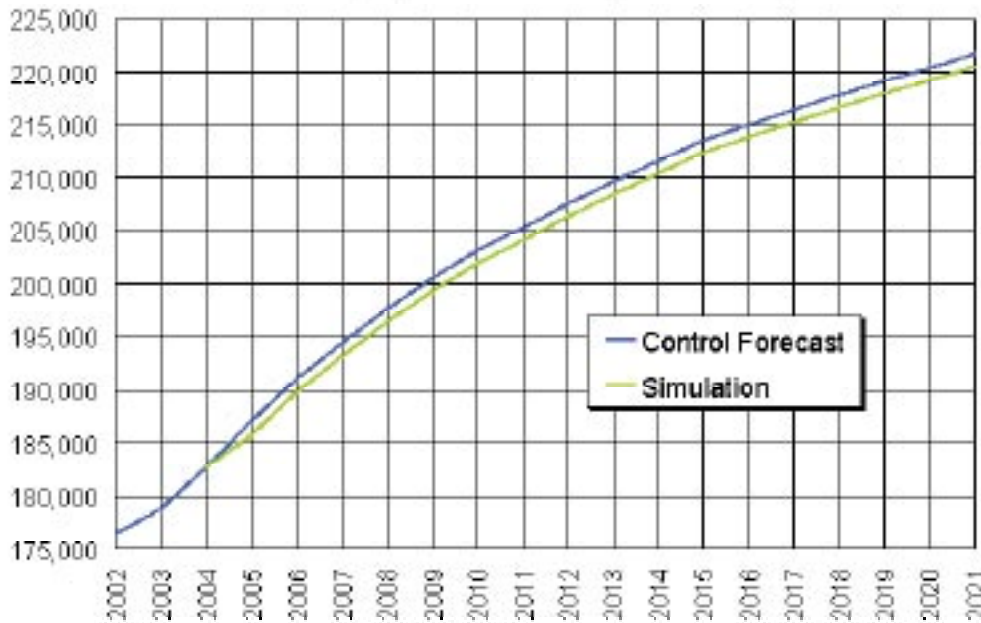


Simulation Results

Difference Between the Simulation and the Baseline Forecast

To gauge the impact of the economic shock created by our simulation of the Portsmouth Naval Shipyard closing, we compare the results of our REMI model simulation to the previously established “control” forecasts of the economies of New Hampshire’s ten counties. Comparisons show

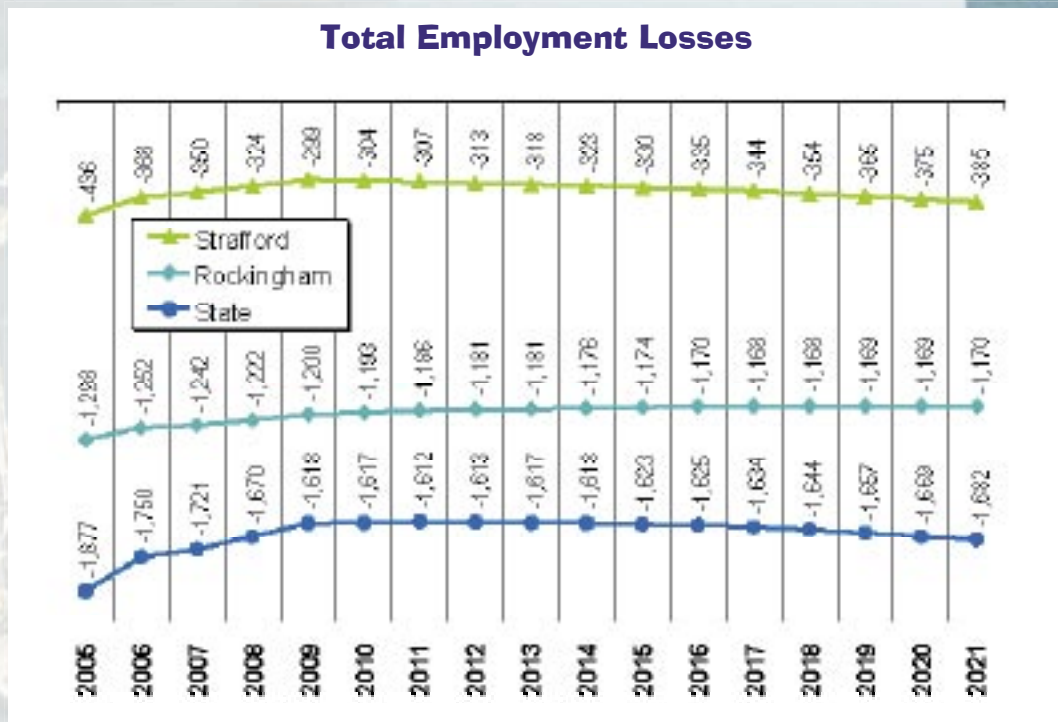
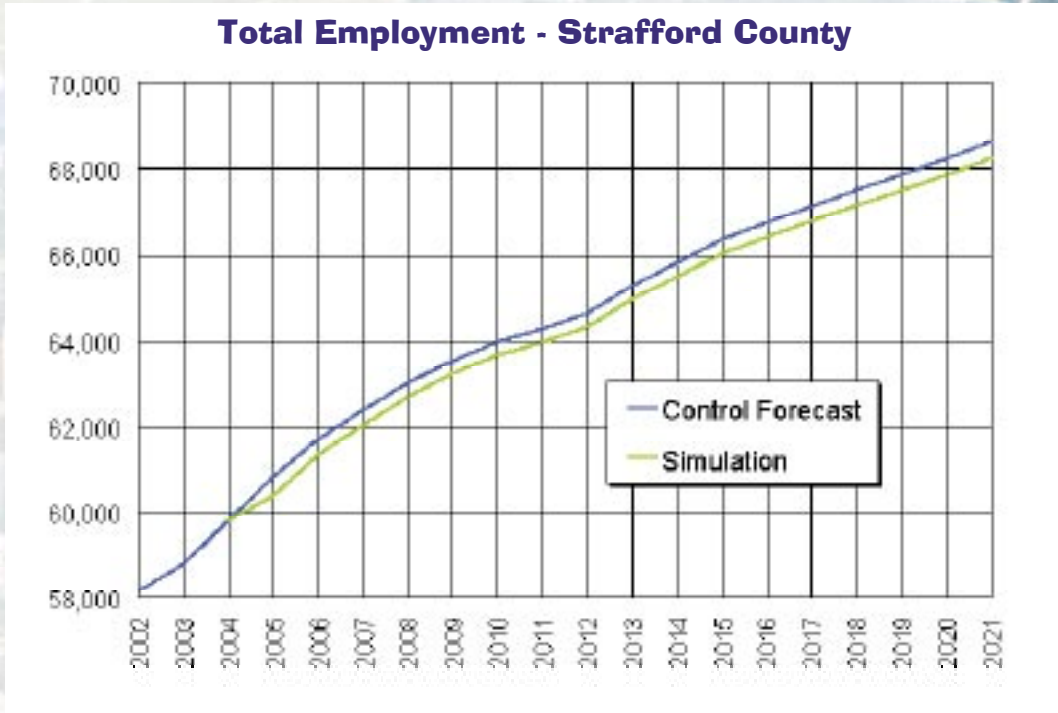
Total Employment - Rockingham County



that the closure of the Yard generally produces negative results in almost every economic measure. It is important to remember that these losses do not mean that the economy will show negative growth. Rather the losses that we will discuss are relative to the control forecast. The economy will continue to grow, but by a reduced amount represented by the differences between the control forecast and the Shipyard closure simulation.

Total Job Losses

The closure simulation, which was run as if the Portsmouth Naval Shipyard had ceased to exist on December 31, 2004, had its largest impact on employment in 2005. Statewide, compared to the forecast,

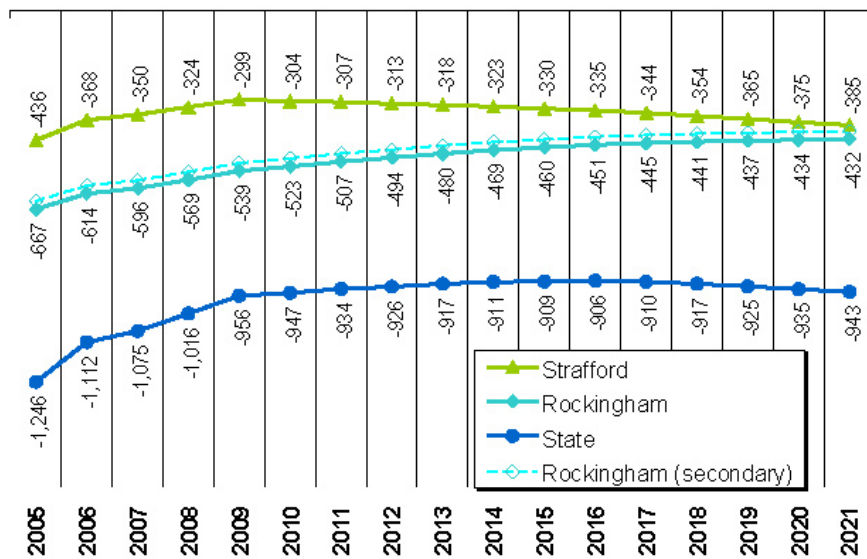


2005 shows a deficit of nearly 1,900 jobs. Rockingham County suffers the largest number of job losses. This results from the direct effects of the loss of the New Hampshire share of the Yard's military employees (all apportioned to Rockingham County) and the loss of 27 civilian jobs in the Naval Sea Systems Command Detachment. These direct effects are compounded by secondary effects resulting from the disappearance of the purchasing power of their wages and wages of the Yard's civilian employees who commute from homes in the county.

Total Civilian Job Losses - Secondary Effect

All of the New Hampshire civilian jobs lost, except for the 27 at the Naval Systems Command in downtown Portsmouth, result from the secondary effects of the loss of the purchasing power of the lost wages. In simulating the closing, we were not able to directly

Civilian Employment Losses



remove the Yard's civilian employment since this employment is not counted in New Hampshire. Instead, we removed wages received by New Hampshire residents, who worked at the Yard in 2004, apportioned by the counties in which they lived. When wages are removed from the economy, purchases of goods and services are curtailed, leading to layoffs in the industries that provide those goods and services. Businesses that rely heavily on the Yard's employees as customers may have to close or scale back their operations. A share of the laid-off workers may move away with their dependents, to seek employment, reducing the population. The departure of migrants that are of childbearing age reduces the area's potential for natural increase (births minus deaths). The population losses lead to further slackening of demand for goods and services.

The direct loss of the Yard's civilian wages weighed more heavily on Strafford County since 60 percent of the Yard's New Hampshire civilian wages went to workers commuting from there. In Rockingham County, the loss of the wages of military families and its proportionately larger share of the PNS's purchases of goods and services due to close proximity to the Yard, made the total loss of jobs larger than in Strafford. Civilian employment in both counties starts to recover slowly. In Rockingham, the gains flatten out. Stafford County's small gains in the first five years turn to losses by 2010. Since the Yard's civilian wages were removed for the duration of the simulation, employment cannot recover to the levels forecasted in the control. Eventually the losses will flatten and civilian job growth will occur at the same rate as projected. Civilian job counts will remain more than 900 below the baseline, statewide, for the duration of the simulation. The level will not return to equilibrium. This is because the simulation does not assume that another large employer would step in to replace those wages. Though state and local development officials will strive to replace these wages, the possibility of this happening was not modeled since the outcome of their efforts is unknowable.

The Effect on Unemployment in New Hampshire

The New Hampshire Econometric Model does not estimate changes in unemployment levels. However, based on the changes in employment at the PNS and the secondary job losses predicted for New Hampshire, we can deduce a change in unemployment.

Unemployment is based on *place of residence*. It is important to note that even though the elimination of jobs at PNS is not a direct job loss to New Hampshire, it would have a direct effect on the 1,878 New Hampshire residents working at the Shipyard as civilian employees. About 240 of them are eligible for full federal retirement, and they may leave the labor force

and not seek further employment. This would leave about 1,600 of the Shipyard employees from New Hampshire unemployed, in the short run, because of the direct job loss at PNS. In addition; 1,246 jobs in New Hampshire would be lost due to secondary effects in the first year after the PNS closure. According to Census 2000 commuting patterns, six percent of workers in Rockingham County commute from Maine, close to ten percent of workers in Strafford County commute from Maine, and less than one percent of the workers in the rest of New Hampshire commute to work from Maine. Therefore, we assume



that about 1,100 of these jobs lost in New Hampshire would be held by New Hampshire residents.

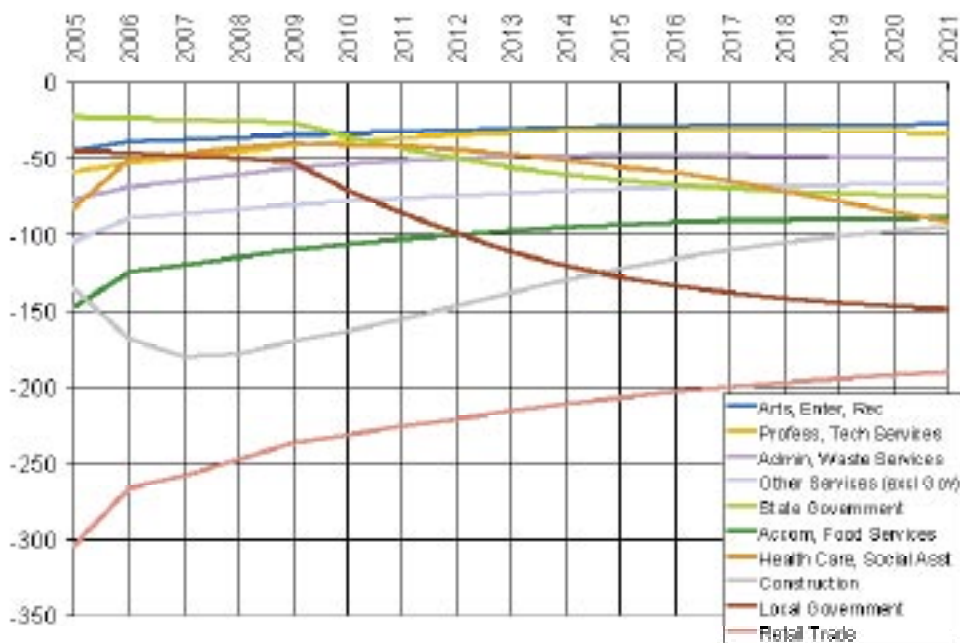
In total, then, the number of unemployed in New Hampshire would increase by 2,700 in the year after closure. [This is the sum of the 1,600 New Hampshire residents who would lose jobs at the Yard (and be unable to retire) and 1,100 New Hampshire residents losing jobs in New Hampshire as secondary effects take hold.] This would, in the short term, increase the unemployment rate in New Hampshire by 0.5 percent, using the 2004 annual average labor force as the base.

The Yard closure would also cause secondary job losses in Maine. These losses would be larger than the declines in New Hampshire because of the greater share of Shipyard civilian wages paid to Maine residents. As secondary job losses occur in Maine, additional New Hampshire workers would become unemployed because they commuted to those jobs. The New Hampshire Econometric Model is not designed to capture the effects of jobs lost in Maine and how they impact New Hampshire residents. What we can conclude, however, is that the unemployment rate, especially in the Portsmouth-Rochester area, would be driven yet higher.

Industry Employment

At the outset, the industries most susceptible to the secondary effects of the disappearance of the purchasing power of the Yard's wages are those where people are most likely to spend their disposable income. Retail trade initially has the greatest losses, dropping more than 300 jobs statewide in 2005. Next, Accommodation and food service loses almost 150 jobs. Construction follows a somewhat different pattern

Statewide Employment Change by Selected Industries



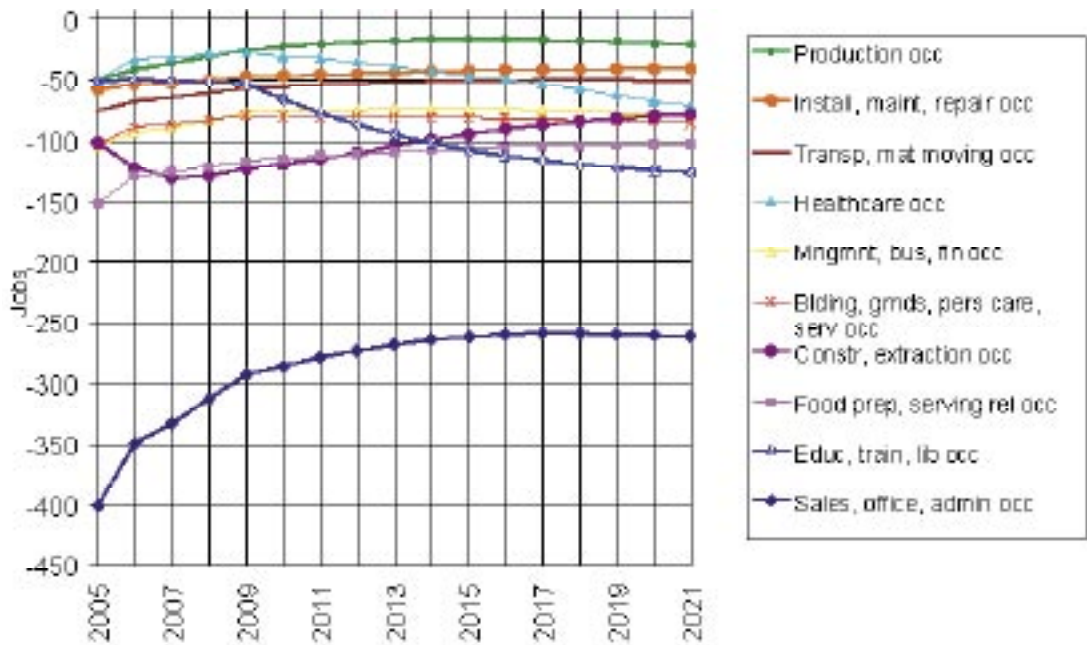
from other industries. This pattern likely reflects the loss of purchases/contracts by the Yard itself in the first year. In the second year the loss of residents' ability to purchase new homes or repairs drives construction employment still lower. Then it begins a slow climb back toward equilibrium for the remainder of the forecast period.

Projected negative population differences have long term implications for several industries. Employment in local and state government continues to fall, relative to the control forecast, throughout the period of the simulation. By 2009 local and state government employment losses increase at a faster rate as the population starts migrating away. Healthcare and social assistance, Administrative and waste services, and Professional and technical services turn upward toward the control forecast after the initial shock, but by the end of the period are trending downward.

Occupational Employment

Though the initial reduction in jobs occurs in Maine where the Shipyard is officially located, this direct loss of jobs was modeled by removing the wages received by New Hampshire residents working at the PNS.

New Hampshire job losses by occupational groups as a result of the Shipyard Closure

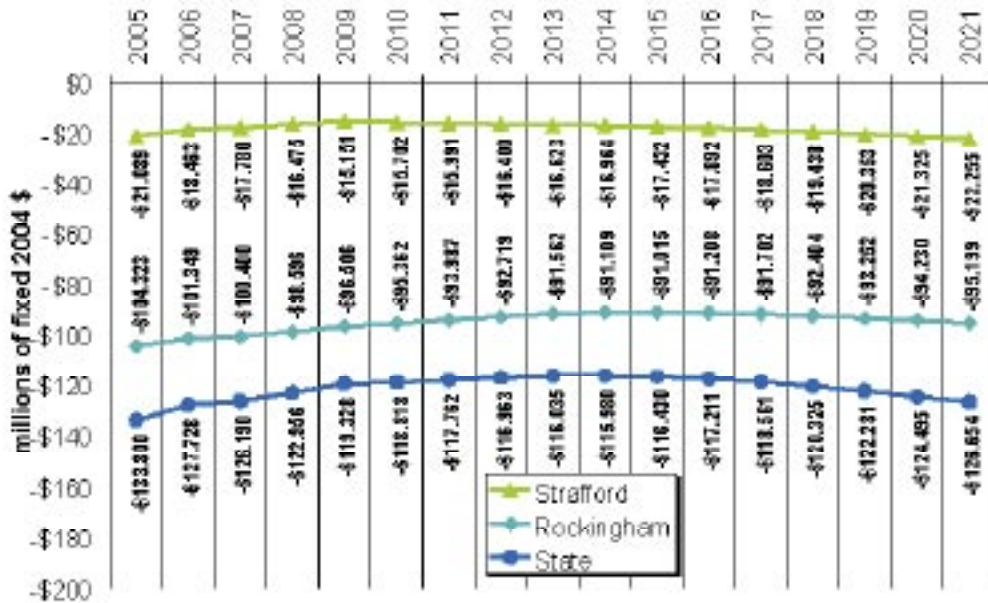


Because the New Hampshire Econometric Model is not a multi-state model, events occurring outside the state cannot be modeled directly. Most of the New Hampshire job losses resulting from simulating the closure of the Shipyard are from the secondary effects of the closure. These job losses are due to a decrease in consumer spending and a reduced need for health and educational services as the population diminishes. In order to get a full picture of what kind of excess skilled

workforce will be available in the area as a consequence of the closure of the Shipyard, the occupational detail of the jobs currently occupied at PNS is described under the section Occupational specialties above.

Statewide, the model's occupational group most affected by the closure of the Shipyard would be Sales, office and administrative occupations. Sales, office and administrative occupations are hit hard from the starting point with a job loss of 401 in 2005. The drop is due to a decline in consumer spending (because of the drop in income), and a decline in the immediate demand by the Shipyard (goods and services purchased by PNS). In general, it is also a very large occupational group with a large presence among many industries. By 2021 less than half of the lost jobs would be recouped. As the long term effects are driven by population growth, and jobs in these occupations will not recover. Food

Change in Gross Regional Product



preparation and serving related occupations are also hit hard with a loss of 150 jobs statewide in 2005. These losses are due to a decline in consumer spending reflecting a decrease in per capita personal income.

Job losses in Construction and extraction occupations are 101 in 2005, and worsen to 130 in 2007 before the group starts to recover. By 2021 job losses have diminished to 78. These job losses respond both to a decrease in personal income as well as a decrease in population. A decline in population lessens the need for housing, and the demand for new construction would be down. Remodeling of existing homes would respond to a decline in disposable personal income.

Both Healthcare occupations and Education, training and library occupations are driven by the size of the population. When the population contracts, demand for occupations related to primary education and primary health care diminishes. In stage (three) of the simulation process, some of the lost wages were migrated back into the regional economy to represent retirees who remain in the area. This is the reason why the healthcare occupations are recovering from a loss in 2005 of 50 jobs to a loss of 27 jobs in 2009 and then starts increasing the job losses more permanently. By 2021 the healthcare occupations are 71 fewer than if the PNS had not closed. As the population declines faster by 2009, jobs in Education, training, and library occupations decline at a faster rate as well.

Demand for Goods and Services and Gross Regional Product

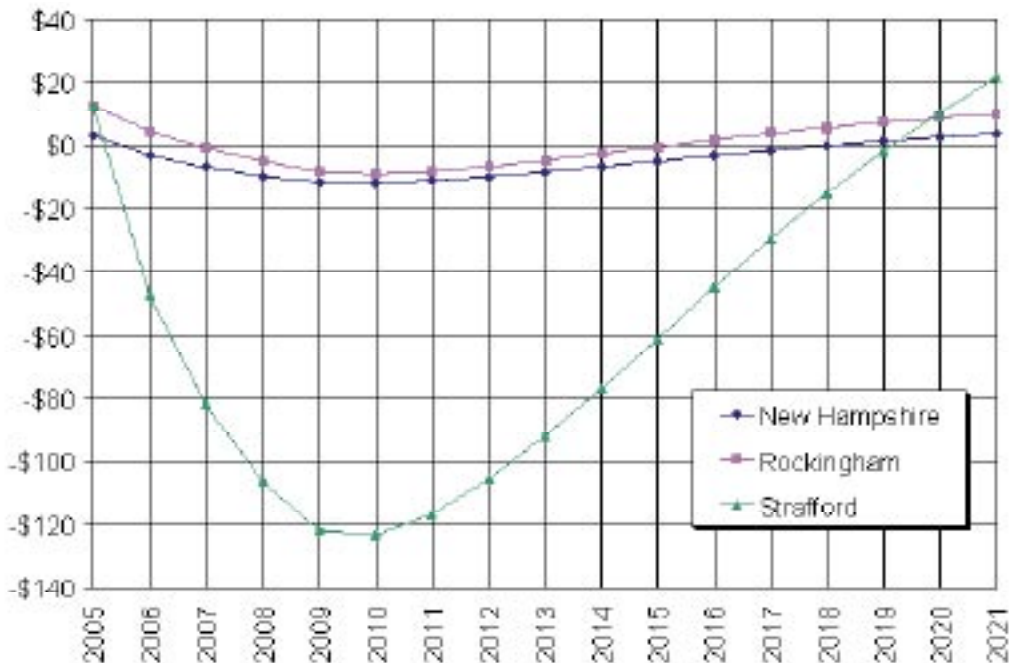
The Portsmouth Naval Shipyard closure simulation reduces the final demand for goods and services in New Hampshire in 2005 by \$197.3 million. Some of these losses are exported to other economies as imports from the rest of the U.S. fall by \$95.4 million and imports from foreign countries fall by \$0.3 million.

New Hampshire’s Gross Regional (or State) Product (GRP) falls \$133.8 million below the baseline in the first year. It does not recover to the baseline forecast levels through the simulation period.

Wages

In the event of the closure of the Portsmouth Naval Shipyard, losses in total wage and salary disbursements for New Hampshire would

Annual Average wage rate for New Hampshire and Rockingham and Strafford Counties (Nominal Dollars)



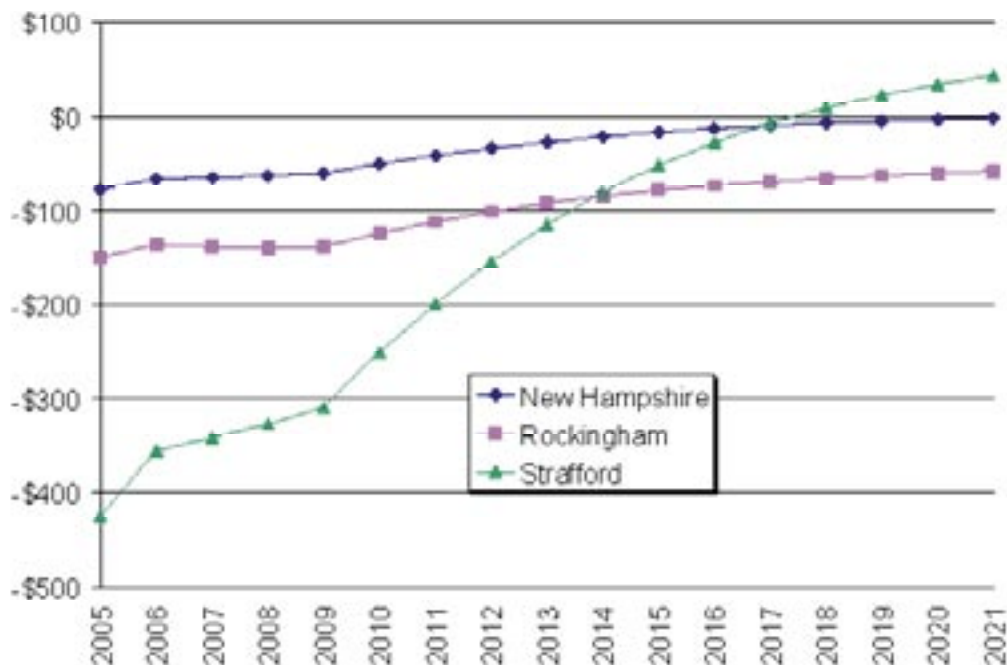
initially be \$71.5 million. This loss would expand to \$106.3 million by 2021. This amount is in nominal dollars, and the increasing loss over time is partly due to inflation. The Retail trade industry suffers the biggest losses in wage and salary disbursement, followed by losses in Construction. A fifth of the losses in private nonfarm wage and salary disbursement is in Retail trade and another ten percent of the losses are in Construction.

Employees in Strafford County would be hardest hit. Their average annual wage rate would be lowered by \$123.51 in nominal dollars by 2010, the bottom of the trough. The closing's effect on the average annual wage rate is smaller at the statewide level, but it is interesting to note, it would still take the state until 2019 to get back to the pre-closing wage level. In the short-term, the average annual wage rate is actually higher in 2005 for both Rockingham and Strafford counties, and for New Hampshire as a whole, and would remain higher for Rockingham County in 2006. The reason is that, when Military employment was taken out, most of the jobs lost were in retail. Both are segments of the economy with a lower than the average wage rate, and by eliminating these jobs the average of the remaining jobs will see an increase.

Income

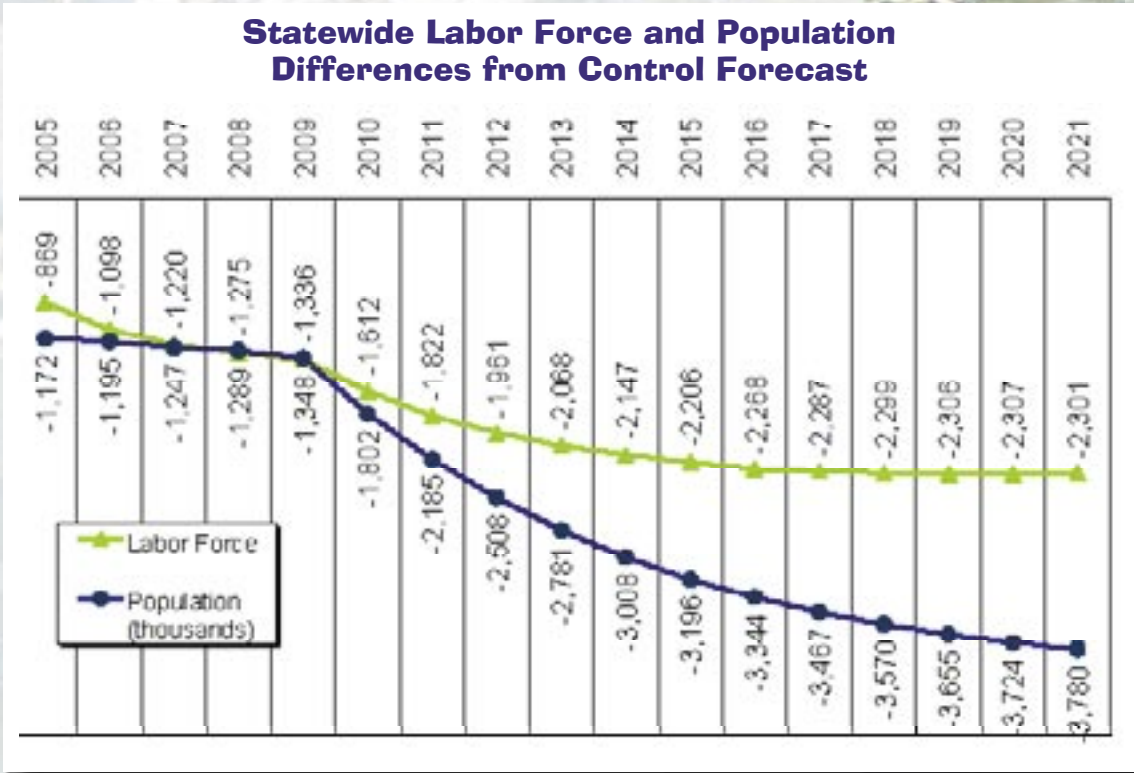
Losses in per capita real personal income and per capita real disposable personal income follow a very similar pattern, with slightly bigger losses in per capita real personal income. Strafford County is hit the hardest by the closure of PNS with an immediate economic impact in 2005 of \$426 fixed 1996 dollars in per capita real personal income and \$358 fixed 1996 dollars in per capita real disposable personal income. [The Econometric Model uses 1996 as a baseline for income figures; \$1 in

Real Personal Income per Capita (Fixed 96\$)



1996 had approximately the same purchasing power as \$1.22 in 2005. Therefore, \$426 in fixed 1996 dollars would translate into about \$521 in current 2005 dollars; \$358 in fixed 1996 dollars would translate into about \$438 in current 2005 dollars.]

As more people move away from the area due to lack of employment, per capita personal income gradually begins to recover. This rising per capita personal income happens despite a decline in total personal income because there is a smaller population over which to spread the total income. It would take until 2017 for per capita real personal income in Strafford County to recover enough to be at the level it would reach if the Yard were not closed. New Hampshire's per capita real personal income and per capita real disposable personal income are negatively affected by \$77 and \$68, respectively, in 2005, but it will take the state until 2021 to reach the same income level in fixed dollars in



the case if the Yard were not closed. Per capita real personal income in Rockingham County follows the same pattern as the state, just starting with a loss of \$150 in fixed 1996 dollars in 2005 and with a loss of \$58 in fixed 1996 dollars by 2021. Rockingham County suffers long-term declines in per capita real personal income and per capita real disposable income, compared to the levels attained if the Yard does not close.

Population and Labor Force

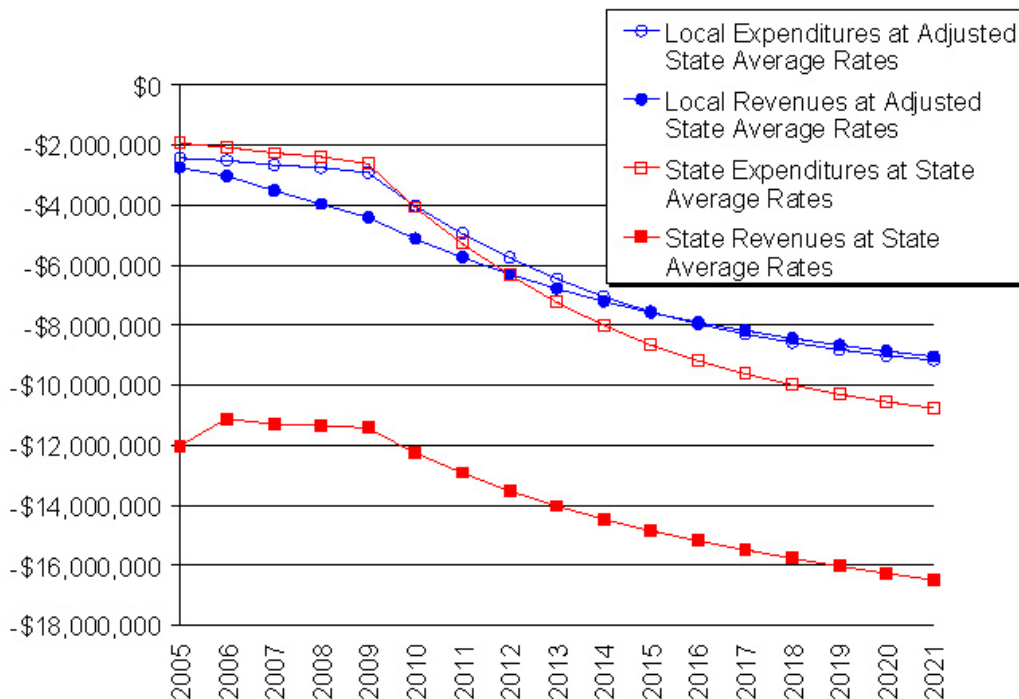
Population and labor force both continue to decline relative to the control forecast throughout the period of the simulation. The sudden loss in the wages of commuters plus the loss of military personnel and their dependents has an immediate sharp impact on population

levels. The labor force impact does not occur as rapidly. It builds as the secondary effects of the economic shock churn through the economy. Ultimately, the loss of population exceeds the labor force considerably since members of the labor force who move away take dependents with them.

State and Local Revenues and Expenditures

According to the REMI New Hampshire Econometric Model baseline, close to 60 percent of local revenues in New Hampshire come from property taxes and another 22 percent come from State intergovernmental funds. At first, losses in local revenues are driven by losses in *Other charges and revenues*, but by 2008 losses are primarily driven by losses in property taxes.

New Hampshire State and Local revenues and expenditures



A majority of the local expenditures are used to fund elementary and secondary education (including libraries), and another ten percent fund the police, fire and corrections. Declines in expenditures are apportioned in line with the level of spending. In general, both local revenues and expenditures are driven by the size of the population. Likewise drops in revenues are primarily from the loss of property taxes, drops in expenditures are from lower spending on education and other public services. This explains why declines in local revenues statewide are smaller than declines in local expenditures by 2016. In Strafford County drops in local revenues are smaller than declines in local expenditures by 2010. In other words, more money is spent on

education and other local services than is collected in property and other local taxes, compared to the baseline.

The difference between state revenues and expenditures more than makes up for the deficit in local finances both in Strafford County and Statewide. Most of the state revenues come from federal intergovernmental, other charges and revenues, and employee retirement. The rest of the revenues are from varying sources like corporate income tax, education charges, and other sales tax. Most of the losses in revenues in 2005 are from other charges and revenues and employee retirement, but by 2013 federal intergovernmental revenue carries the largest share of the losses.

A quarter of the State's expenditures is used to fund intergovernmental expenditures and another 17 percent is spent to fund higher education. With the closure of the Shipyard, state expenditures on welfare and insurance trust are higher compared to the baseline until 2012, thereby offsetting other drops in State expenditures by about a million dollars in the first year after closure.

