

Housing New Hampshire's Workforce

Prepared for

The New Hampshire Workforce Housing Council
www.workforcehousingnh.com

Prepared by

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NEW HAMPSHIRE
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March 28, 2005



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TABLE OF CONTENTS

EXECUTIVE SUMMARY of HOUSING NEW HAMPSHIRE’S WORKFORCE.....	2
ECONOMIC PROFILE OF HOUSING SECTORS IN NEW HAMPSHIRE.....	5
HOUSING PRODUCTION TRENDS.....	7
AVAILABLE AND AFFORDABLE HOUSING FOR NEW HAMPSHIRE’S WORKFORCE.....	12
HOUSING SUPPLY AND MARKET CONDITIONS.....	18
HOUSING SUPPLY AND LOCAL PRACTICES.....	20
EMPLOYER IMPACTS OF TIGHT WORKFORCE HOUSING MARKETS.....	22
ESTIMATED ECONOMIC IMPACTS OF TIGHT WORKFORCE HOUSING MARKETS.....	26
APPENDIX A.....	29
APPENDIX B.....	35
APPENDIX C.....	41
APPENDIX D.....	43
REFERENCES.....	44

EXECUTIVE SUMMARY of HOUSING NEW HAMPSHIRE'S WORKFORCE

**By Dr. Lisa K. Shapiro, Chief Economist
Gallagher, Callahan & Gartrell, P.A. for the
New Hampshire Workforce Housing Council**

Housing is an enormous part of the New Hampshire economy, accounting for nearly 20 percent of the Gross State Product, \$2.4 billion in annual investment, and \$7.3 billion in related consumer expenditures.

But housing markets are complicated. They are determined by such diverse factors as the price of land, types of housing available, mobility of the workforce, interest rates, population growth, geography, demographics, zoning laws, and economic well-being.

During the 1990s, the number of new homes being built was not nearly enough for the number of people wanting to live in New Hampshire. According to some estimates, the number of homes under construction was about one half the number needed to keep up with new jobs. By 2002, employment growth had slowed and construction had increased and was keeping pace with population and employment growth, thus beginning to meet pent-up demand.

The types of homes now being built, however, do not perfectly mirror those who are seeking them. Generally, housing demand for the wealthy and the elderly is being met. But working families seeking moderate and low-priced homes continue to face few choices they can afford. With projected population and job growth, rising interest rates, and community concerns, this trend is likely to continue.

- Regulatory practices are likely to be influencing the mix and price of available housing;
- Affordable housing for people in the middle is probably declining and the pressure is likely to increase if more communities adopt certain types of growth management strategies;
- Projected growth by occupation, and overall economic forecasts for New Hampshire, suggest a continued strong housing demand by workers making moderate and low to moderate incomes;
- Aggregate housing production rates have increased to levels that more closely match employment and population growth, but the types of housing tend more toward the moderately high and higher end and for the elderly, and rental apartment production with moderate-and lower-prices has not yet made up for the dearth of this type of production during the 1990's.

This situation is determined by two conditions. First, there are market conditions – strong demand, a finite supply of land and rising prices for it, and more

profit for the construction industry in high-end housing. Second, there are significant non-market conditions that influence the total quantity, mix of housing types, and the locations housing is built. Regulatory policies and practices at the local level can strongly discourage the building of moderate priced homes even if market conditions alone would attract developers.

- If economic conditions remain relatively strong, and there is a continued use of non-market barriers to producing moderate-and lower-priced housing, conditions worsen for workforce housing.
- There is significant opportunity to expand market-based production or, in combination with existing assistance programs, to increase the supply of workforce housing for households earning above half the typical household income, but not if local growth management ordinances and land-use zoning practice exclude such opportunities.

Municipal growth management strategies, such as building permit limitations, growth management ordinances, impact fees, traditional lot-size and setback requirements, restrictions on attached and manufactured units, and infrastructure requirements such as roads and sewers, increase the cost of housing generally and can reduce the number of moderate and low-priced homes created.

Informal regulatory barriers – local opposition to construction projects, slow permitting, the perceived negative impact of moderate priced homes in the neighborhood, and concerns about changes in the character of communities – can have the same effect.

Moderate priced homes are where the people with whom we transact our daily business live –store clerks, bank tellers, police officers, nurses, and teachers. Their employers recognize the difficulty they are having in finding and affording housing.

- In the case study of five communities in New Hampshire, appreciation rates in lower and moderate priced housing was significantly greater than for moderately high and higher priced housing.

Concerned about their continued ability to retain workers and grow in the future, businesses are responding by offering relocation benefits, mortgage and rental assistance, and down-payment plans. They are also organizing in their communities to enact regulatory policies and practices which allow for the development of workforce housing.

The purpose of this study is to estimate the aggregate cost of this housing situation on the New Hampshire economy. Because of the complex nature of the relationship among market and non-market conditions in each of the 234 municipalities in New Hampshire, it is difficult to quantify the impact on housing supply, mix, and price.

Using a variety of methods and scenarios, based on the review of the literature and the available data, this study simulates the aggregate economic impacts under a range of market and non-market assumptions. It estimates that a tight workforce housing market will cost New Hampshire annually:

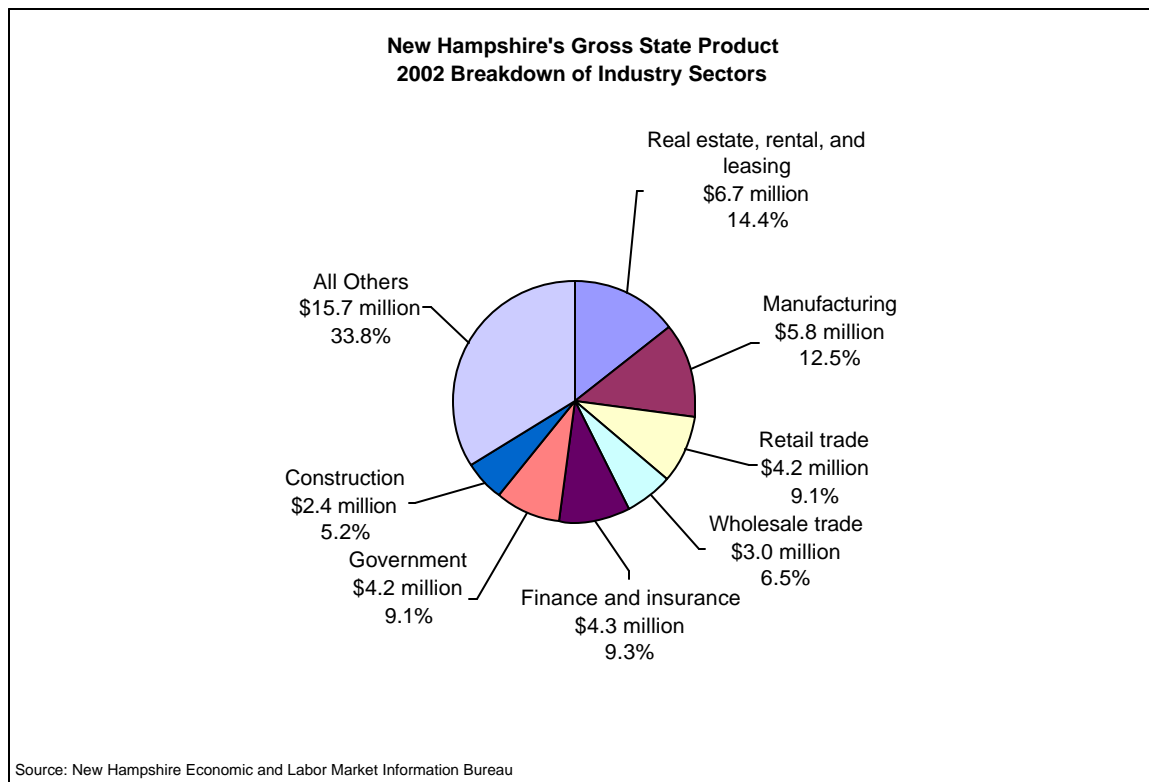
- 1,300 to 2,800 fewer jobs;
- \$57 to \$121 million less personal income;
- \$123 to \$253 million reduction in Gross State Product;
- \$21 to \$33 million less in State and local revenues.

The results thus encourage the design and implementation of regulatory policies to meet the needs of those who are employed here and those who hope to become members of New Hampshire's workforce.

ECONOMIC PROFILE OF HOUSING SECTORS IN NEW HAMPSHIRE

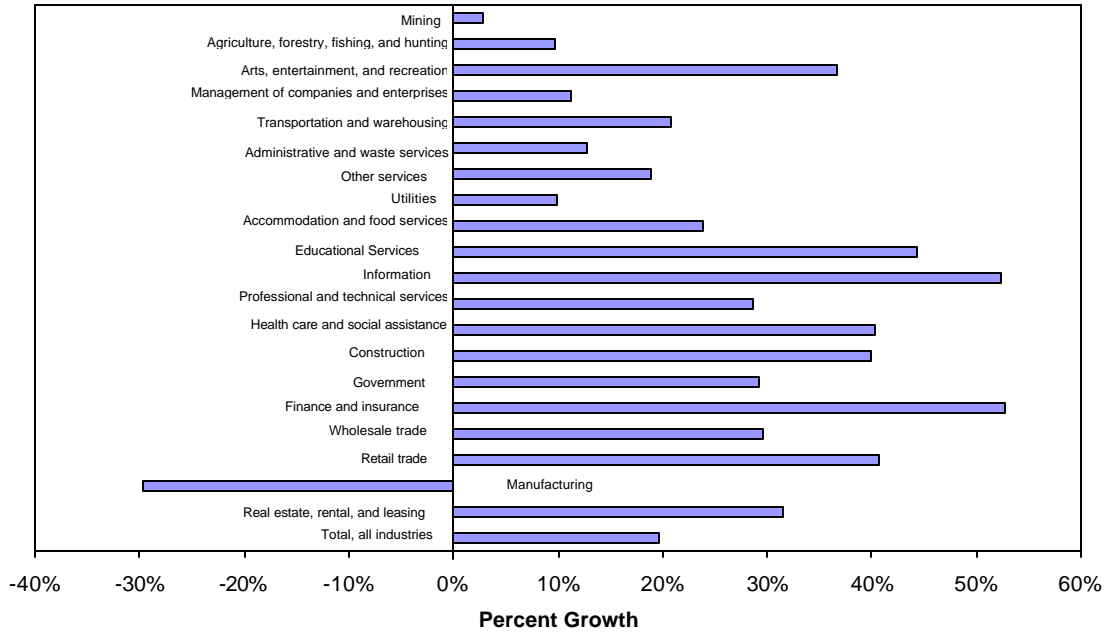
The housing sector is an important part of the New Hampshire economy. Its size is significant given its proportion to the state Gross State Product. In 2004, an estimated \$7.3 billion was spent in New Hampshire on housing (mortgage, rent) and related household expenditures (utilities, repairs, and maintenance). Another \$2.4 billion was invested in residential housing in New Hampshire. Thus, about 19% of New Hampshire's Gross State Product is related to residential housing¹.

In reviewing the breakdown of Gross State Product by industry sector, the largest single sector is now Real Estate, Rental, and Leasing, which has strong ties to housing and which grew by over 30 percent from 1998 to 2002.



¹ Estimates based on data from REMI, the U.S. Census Bureau, and the New Hampshire Economic and Labor Market Information Bureau.

**Gross State Product Growth Rates
By Industry Sector 1998-2002**

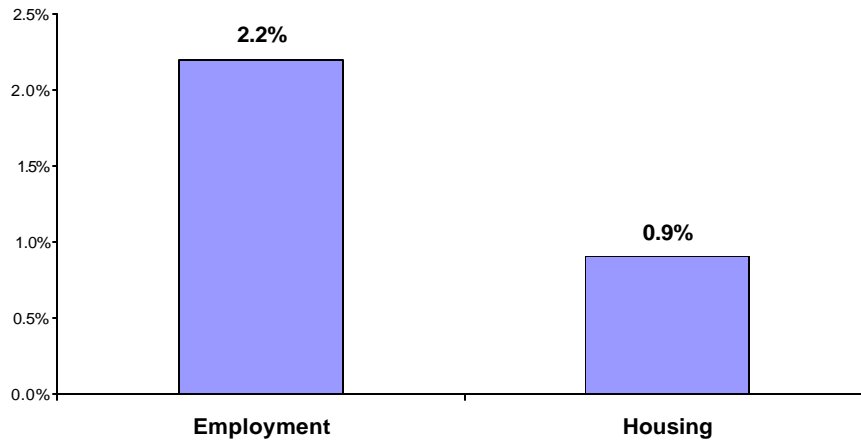


Source: New Hampshire Economic and Labor Market Information Bureau

HOUSING PRODUCTION TRENDS

Evidence of a shortage in workforce housing first emerged in the mid to late 1990s. Strong population and employment growth in the 1990s increased the demand for housing, but the production of new homes significantly lagged.

Employment vs. Housing Production
Average Annual Growth 1990 – 2000



Source: New Hampshire Economic and Labor Market Information Bureau and U.S. Census Bureau

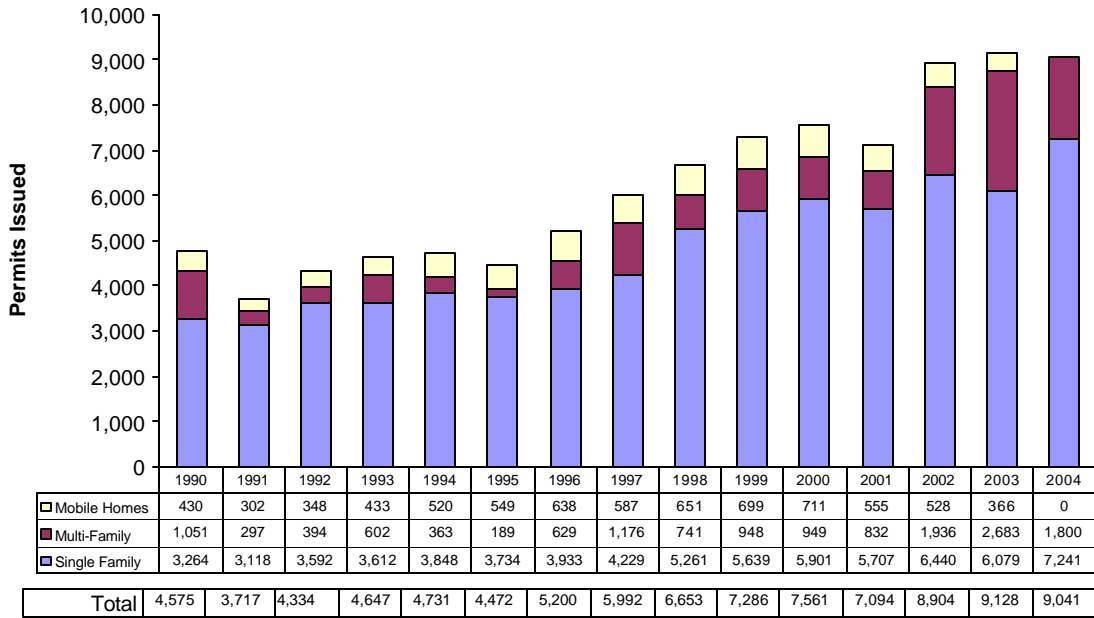
In the 1990s, New Hampshire produced less than one-half the number of housing units per 1,000 jobs created in the 1980s or the 1970s. The lagging production of new homes during the latter part of the 1990s to meet the strong population and employment growth led to a tightening housing market. Vacancy rates for rental units declined from 12 percent in 1991, to below 2 percent by the end of the decade. Vacancy rates for single-family homes declined from 1.7 percent to 0.7 percent over the same period. At the turn to the new millennium, these trends led economists to warn that that “if we continue to produce housing at recent levels of activity, our future job growth could be half that of the 1990s.”²

Coming out of the modest recession early in the new millennium, the mismatch in job creation and housing production has narrowed on a statewide basis primarily due to a slowdown in job creation and increase in new construction.

As the charts below show, on a statewide basis, annual permits issued for residential new construction have increased, and the gap between housing production and job growth has narrowed.

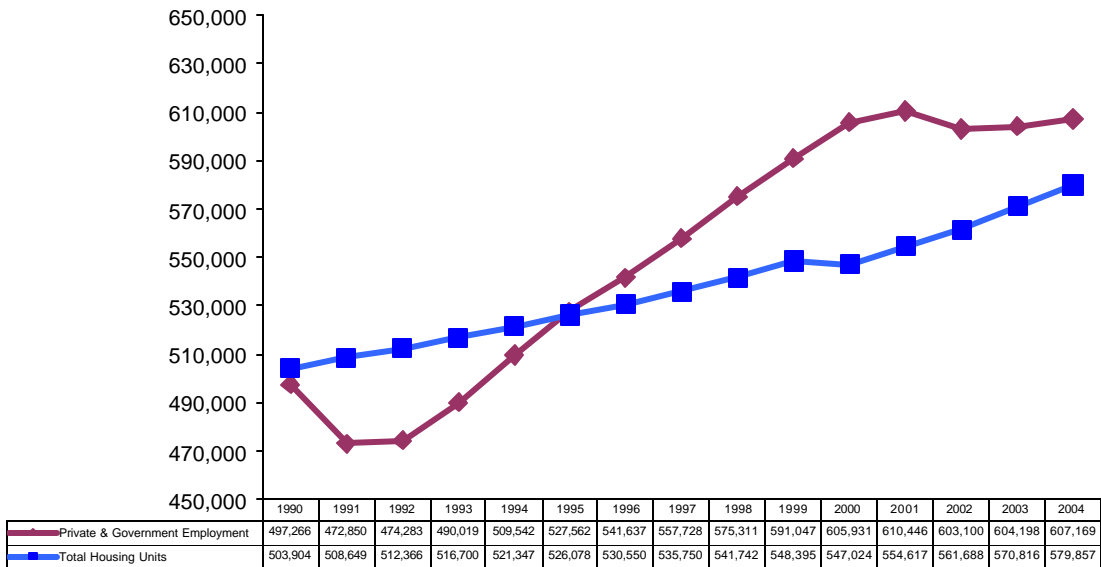
² See Russ Thibeault, Applied Economic Research various charts, and Housing Finance Authority, in Housing Finance Authority’s *The State of Housing in New Hampshire*, February, 2003.

**Permits Issued for Residential New Construction in New Hampshire
1990-2004**



Sources and Notes: U.S. Census Bureau and New Hampshire Housing Finance Authority. Data for mobile homes is not reported by the U.S. Census Bureau for 2004.

Average Annual Employment vs. Housing Units State of New Hampshire - Statewide



Sources and notes: U.S. Census Bureau, New Hampshire Housing Finance Authority, and New Hampshire Economic and Labor Market Information Bureau. 2000 total housing units corrected with U.S. Census Bureau for 2000. Employment is covered employment only.

While the difference between housing production and employment growth has narrowed somewhat, the critical issue is how the difference manifests itself in specific segments of the housing market. For example, these trends vary across counties. In Hillsborough, Rockingham, Merrimack, and Grafton counties, the number of housing units remains less than covered employment, while Cheshire County is about even. In the remaining five counties, the number of housing units remains higher than employment (See Appendix A). These charts are illustrative of the trends, but in and of themselves do not define a gap in housing: population and economic growth, commuter patterns, second homes, and demographic trends on the relationship between households and number of workers are important factors in explaining the variations across counties.

Early in this decade, the New Hampshire Housing Finance Authority commissioned a housing needs assessment prepared by Bruce Mayberry, July 2003. The report developed projections of the demand for housing using two different models: one based on employment growth, and one based on population growth. The chart below shows, based on the Mayberry study, most counties are now producing on an annual basis enough aggregate housing units to be in the range of the forecasted demand, although production in Hillsborough and Rockingham counties is at the low end of forecasted demand. In addition, while the forecasted demand was for primary homes, the permit data includes second homes. The charts also do not take into account that workers may be facing longer commuter times (thus increased costs) in order to find workforce housing that is affordable.

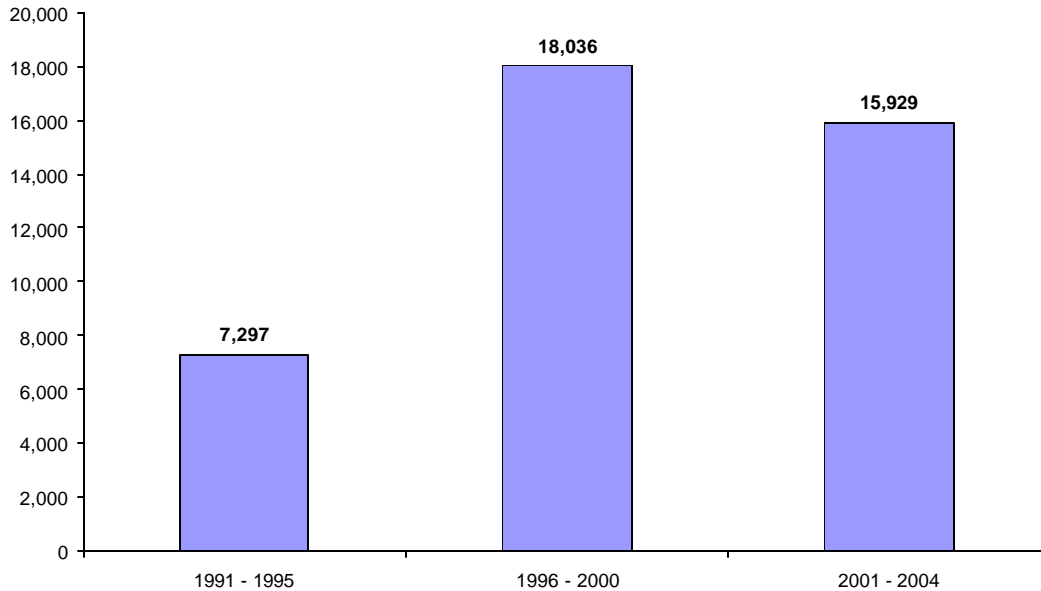
Forecasted Demand vs. Actual Supply of New Housing in New Hampshire

County	Forecasted Growth in Annual Residential Housing Needs 2000-2010		Total Residential Building Permits	
	Employment Based Estimate	Population Based Estimate	2002	2003
Belknap	470	388	644	616
Carroll	376	380	661	714
Cheshire	352	388	358	377
Coos	8	-44	188	170
Grafton	659	500	740	803
Hillsborough	2,609	2,724	2,438	2,228
Merrimack	1,099	1,017	1,114	1,069
Rockingham	3,178	1,924	1,577	2,053
Strafford	696	721	959	868
<u>Sullivan</u>	<u>130</u>	<u>225</u>	<u>225</u>	<u>230</u>
Total	9,575	8,224	8,904	9,128

Source: Bruce Mayberry for the New Hampshire Housing Finance Authority, *New Hampshire Housing Needs Study*, July 2003 and the U.S. Census Bureau.

Actual employment and population growth have been slower this decade than forecasted in the Mayberry study, but job growth outlook for New Hampshire is still strong according to forecasters, and population growth continues.

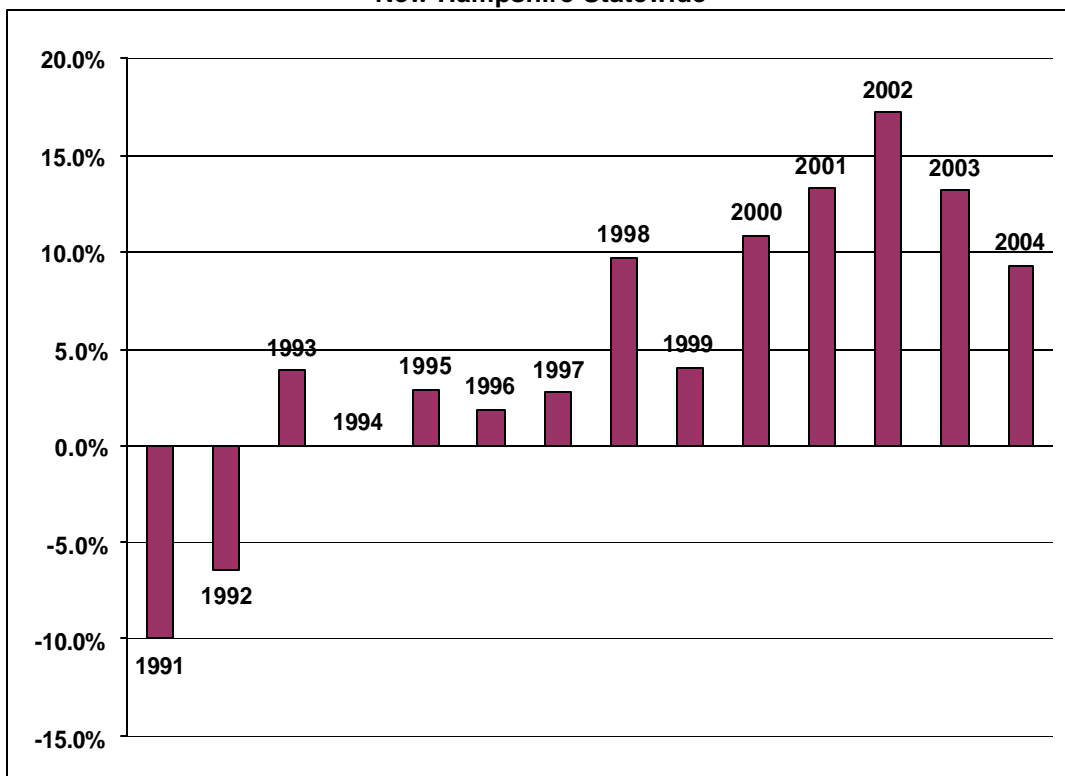
Annual Average Population Growth in New Hampshire



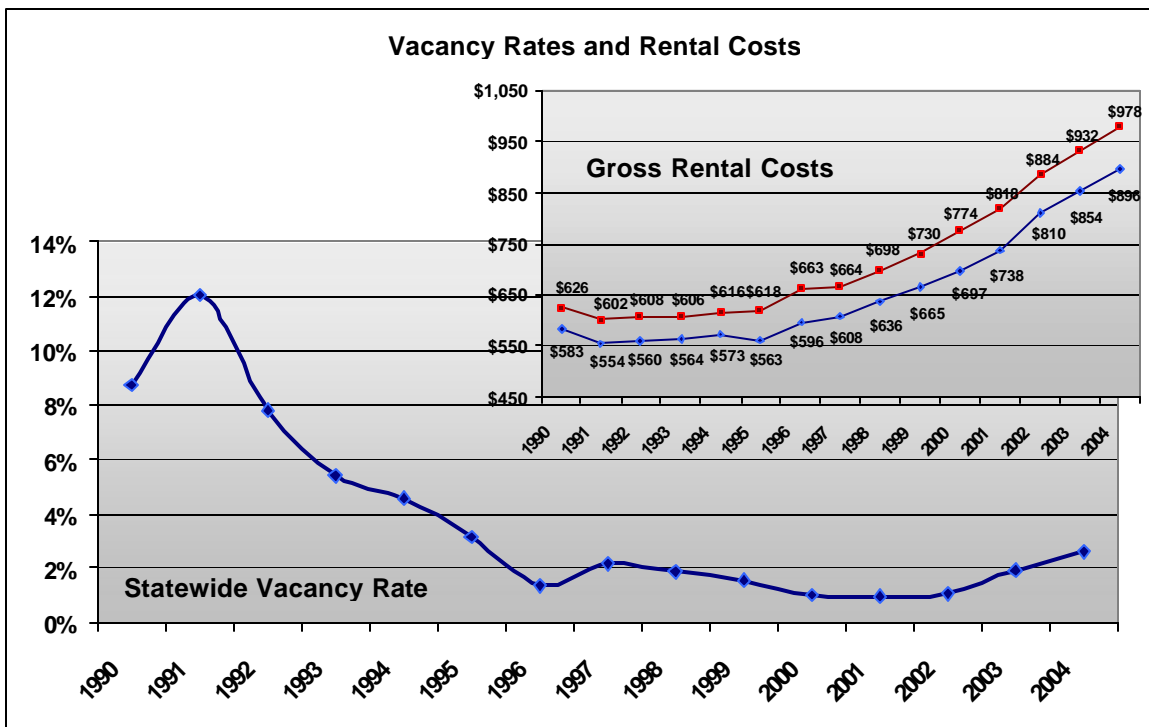
Source and Notes: U.S. Census Bureau Population Estimates Program, Population Division Internet Release Date: 12/29/1999. Population Estimates between decennial census are estimated as the number of people living in an area (resident population) as of July 1st of each year. The estimated population is calculated from a demographic components of change model that incorporates information on natural change (births and deaths) and net migration (net domestic migration and net movement from abroad) that has occurred in the area since the reference date of the most recent decennial census. Annual change is from previous year.

While the data on employment, population, and permits suggests that in the aggregate, housing production rates are more closely aligned with population and employment growth rates in New Hampshire, current production rates will need to continue to keep up with demand. Vacancy rates for rental housing and price appreciation for all purchased housing have eased somewhat, but both of these measures are indicative of relatively tight markets. Market conditions of course could change and negatively impact both supply and demand. If economic conditions remain relatively strong, but there is a continued increase in non-market barriers to producing moderate- and lower-priced housing, conditions would likely worsen for workforce housing.

Change in Median Purchase Price from Previous Year New Hampshire Statewide



Source: New Hampshire Housing Finance Authority, *New Hampshire's Housing Challenge*



Source: New Hampshire Housing Finance Authority, *New Hampshire's Housing Challenge*

AVAILABLE AND AFFORDABLE HOUSING FOR NEW HAMPSHIRE'S WORKFORCE

Housing which is affordable generally means that a household spends at or below 30 percent of their income on housing³. Workforce housing is housing for those in the workforce with employers, government officials, industry participants, and advocates sometimes defining affordable or workforce housing by focusing on households with incomes in a certain range. Some define affordable housing as housing for poor people, and workforce housing as housing for those in the workforce who make around median income, sometimes from 60 to 80, or 80 to 120 percent of median area income.

In this study, workforce housing means housing for those in the workforce who make at or below 120 percent of median household income. New Hampshire Employment Security forecasts job growth of 114,216 in the 10 year period from 2002 to 2012. The twenty-five occupations expected to add the most jobs during this period account for about 43 percent of all new jobs. Half of those new jobs pay average annual wages of less than \$12 per hour. The top 4 occupations expected to have the greatest number of annual openings (combination from growth and annual opening replacements) all have average hourly wages below \$12 per hour⁴.

In 2000, the median household income in New Hampshire was \$49,224. The median household income for owner-occupied households was higher, at \$58,048, while for renter-occupied households it was lower, at \$31,478. To earn \$58,048, a person would need to be paid an average of about \$28 per hour, such as a typical insurance agent. Similarly, to earn \$31,478, a person would need to be paid an average of around \$16 per hour, such as a typical executive secretary or administrative assistant. Following are some other examples of the average annual incomes earned in a number of occupations in New Hampshire and the estimated price of homes that a single-income household in these occupations could afford, under several simplifying assumptions.

Illustrative Average Annual Incomes and Affordable Home Values

Occupation	Average Annual Income	Affordable Home Price
Bank Teller	\$20,571	\$61,713
Dental Assistant	\$29,786	\$89,358
Fire Fighter	\$36,026	\$108,078
Police Officer	\$37,606	\$112,818
Elementary School Teacher	\$41,488	\$124,464
Registered Nurse	\$47,299	\$141,897

Source: New Hampshire Economic and Labor Market Information Bureau, *New Hampshire Occupational Employment and Wages*, January 2005, based on the November 2003 survey by the Occupational Employment Statistics (OES) Program.

³ For purchased housing, this depends on lifecycle income.

⁴ New Hampshire Employment Security, Economic and Labor Market Information Bureau, November 2004 and January 2005.

None of these households could afford the median priced home in any of the five municipalities (Concord, Dover, Keene, Lebanon, Merrimack) used as case studies for this report, and for some of the households in some of the communities, lower-moderate valued homes and lower valued homes are also beyond reach⁵.

All Residential Properties Median Home Values

Relative Value of Home	Concord	Dover	Keene	Lebanon	Merrimack
Middle	\$180,100	\$219,500	\$167,000	\$144,200	\$213,100
Lower-Middle	\$143,400	\$187,700	\$131,100	\$119,500	\$179,600
Lower	\$52,100	\$152,400	\$91,000	\$52,800	\$136,100

Sources and Notes : Includes single-family, condominium, manufactured and 2-3 family housing. See Appendix B for details on sources and use of assessment data. Middle refers to the median, Lower-Middle to the median of Quintile #2, and Lower to the median of Quintile #1.

In reviewing 1990 and 2000 census data, Mayberry (2003) identified that nearly 47,000 renters and 74,000 homeowners in New Hampshire paid more than 30 percent of their gross income on housing. These 121,000 cost-burdened households were about the same as in 1990, so on an aggregate percentage basis, affordability improved through the 1990's.

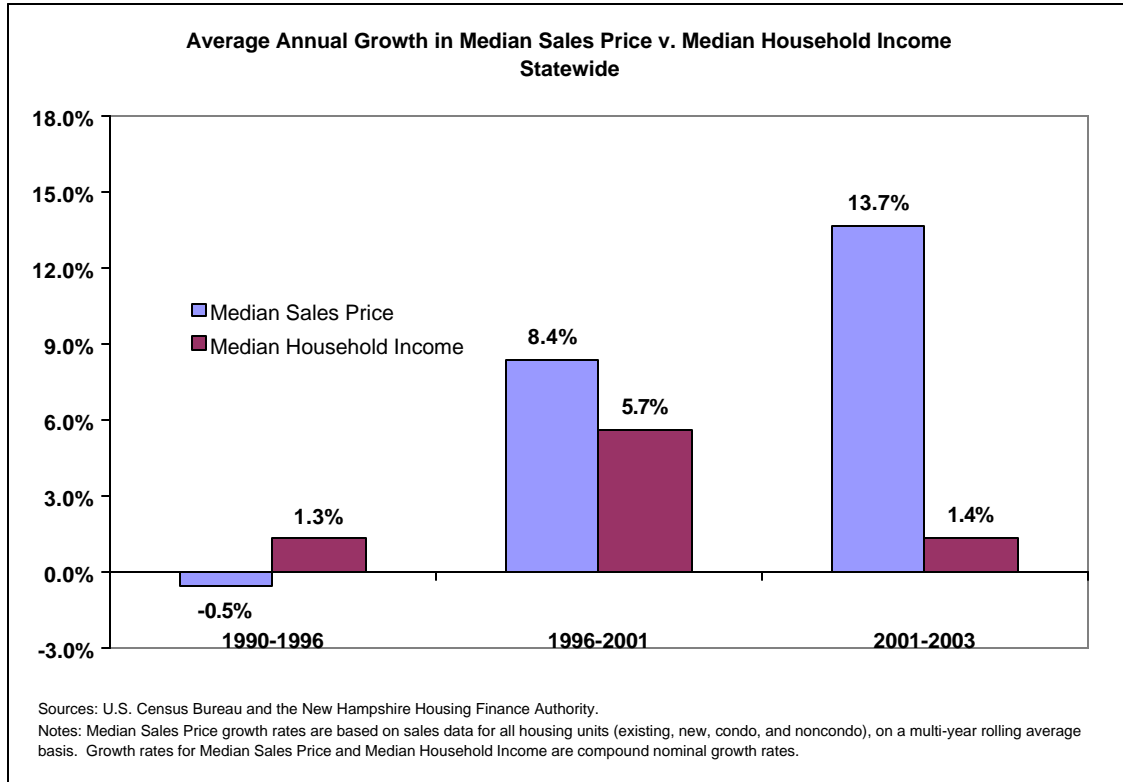
Among renters, the number of cost-burdened households is concentrated, and had become more concentrated and more severe for renter households with less than 50% of Median Household Income. On the single-family homeownership side, over half the households which are cost-burdened earn more than 50% of Median Household Income. In addition, while 33% of all renter households are cost-burdened, and about 22% of single family homeowners are cost-burdened, data was not available for homeowners who lived in manufactured or multi-family housing units and condominiums (which account for about 1/4 of all homeowners).

For households with income below 50 percent of the median, market based housing is likely to be too expensive and subsidies of some sort are needed if public policy is directed at producing workforce housing for those very low-income households. As we move to above 50 percent of Median Income, there is significant opportunity to expand market based production or in combination with existing assistance programs, but not if local growth management ordinances and land-use zoning practice exclude such opportunities.

Since 2000, growth in median sales prices and values has far outpaced growth in median household income, and, at a greater rate than during the previous decade, an indicator that there may be an increase in the number of working households in the

⁵ Based on the case studies of median home values, and household income reported in the prior table. Actual affordability depends on available housing on the market, life-cycle income, interest rates, household debt, and etc.

moderate income range who are cost burdened⁶. Comparing annual growth rates in median sales prices and median household income during the 1990's to growth rates during the current decade shows that the gap between the growth in sales prices and income is larger now than during the 1990's.



We further reviewed other available data to identify the nature of the relationship in New Hampshire between the housing stock and the workforce, especially for moderate income households. We found extensive evidence that there are hot spots throughout New Hampshire where the available housing stock is overpriced relative to the incomes of the workforce. While each of these sources of data has deficiencies in being able to estimate the magnitude and dollar value of this gap, the evidence is strongly supportive that working people with incomes around and below median are facing increasing cost pressures to find affordable rental or purchased housing.

Press accounts during the last year have identified problems working people have finding affordable housing in many different areas. See for example, in Belknap County (Geoff Cunningham, Sr., Laconia Citizen, January 13, 2005), Portsmouth (Nancy Cicco, The Portsmouth Herald, October 15, 2004), The Upper Valley (Sam Schneider, The Valley News, October 4, 2004), Concord and the surrounding areas (Erik Moskowitz, The Sunday Monitor, August 1, 2004), Nashua and surrounding areas (Karen Spiller, The

⁶ Rising values are beneficial to homeowners by increasing their equity, but for new and moving households without equity such trends can make it harder to find housing which is affordable.

Telegraph, March 6, 2005), Monadnock Region (Nika Carlson, Keene Sentinel, December 23, 2004) and Manchester and surrounding area (Denis Paiste, The Union Leader, October 14, 2003).

Regional Planning Commission reports have identified affordability problems and in some cases supply shortages in the Lakes Region, Nashua area, North Country, Southern New Hampshire, Southwestern New Hampshire, Strafford Regional, and the Upper Valley⁷.

For this study, we also conducted case studies of five communities in New Hampshire to analyze the change in assessments of larger more expensive homes relative to smaller more modestly priced homes⁸. Trends of more modestly priced housing appreciating at a faster rate than more expensive homes are an indicator of tight housing markets for workers with modest and lower wages and salaries⁹.

On a community-by-community basis, we looked at four categories of residential properties: single-family homes, condominiums, manufactured housing, two- and three-family homes. Each category was sorted from the lowest to the highest assessment and then divided into quintiles in order to compare the changes in the assessments of lower-, middle-, and upper-end homes.

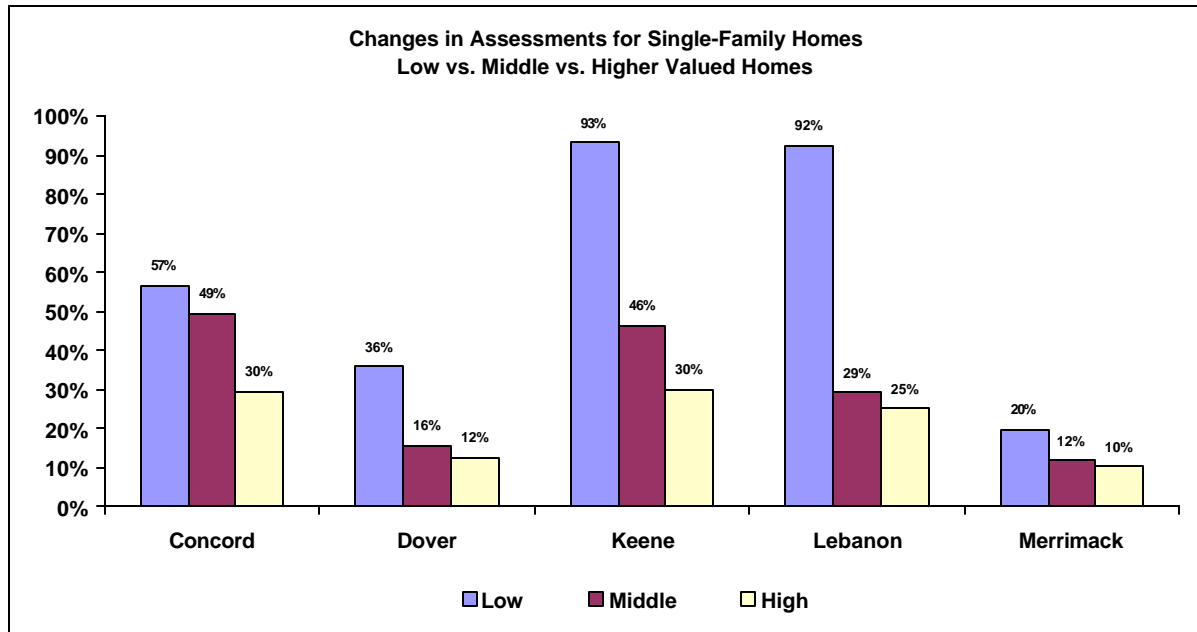
Our analysis confirms that from 2000 to 2005, lower-assessed homes have been increasing at rates that are generally higher, and in some cases considerably higher, than the rates for higher-assessed homes. The chart and table to follow show the changes in average assessments for each type of residential property by quintile¹⁰.

⁷ See *Lakes Region Housing Needs Assessment*, September 27, 2004, *Nashua Regional Planning Commission Housing Needs Assessment*, 1999, *North Country Region Housing Needs Assessment*, *Southern New Hampshire Planning Commission Housing Needs Assessment*, January 2000, *Southwest Region Housing Trends and Conditions*, June 2003, *Strafford Regional Planning Area Regional Housing Needs Assessment: Toward Housing Policies and Implementation Strategies*, May 25, 2004, and *Upper Valley Housing Needs Analysis: Summary Report*, August 2002.

⁸ These communities are not intended to reflect a statistically valid sample. A concerted effort was made to obtain data from a somewhat geographically diverse group of cities and towns that have undergone a revaluation at some point in the last five years and that maintain the prior and current assessments in an electronic format compatible with Microsoft Excel.

⁹ A comprehensive review of growth in assessments throughout the state, while beyond the scope of this study, would be useful in identifying the locations in New Hampshire that are experiencing the largest mismatches in the supply and demand for more affordable housing, the factors that impact prices, and the magnitude of the effects. In addition, a comprehensive methodology could control for any biases that arise from percentages of small versus large numbers.

¹⁰ Analysis based on medians shows similar trends.



Sources and Notes: Assessment Divisions of selected communities. Years for previous and current assessments differ across the communities, but all are between 2000 and 2005. See Appendix B for methodology.

This trend is true in all case studies without exception for single-family homes, and is generally true for condominiums. For manufactured homes, this trend of lower-assessed homes increasing at higher rates than higher-assessed homes is strong in most of the communities in our analysis, with the notable exception of Keene. The Keene Department of Assessment believes that the trends in their numbers might be reflective of very few newer manufactured homes in Keene and many suffering from a lack of maintenance. Similarly, this trend is strong for two and three-family homes.

Changes in Average Assessments by Property Type

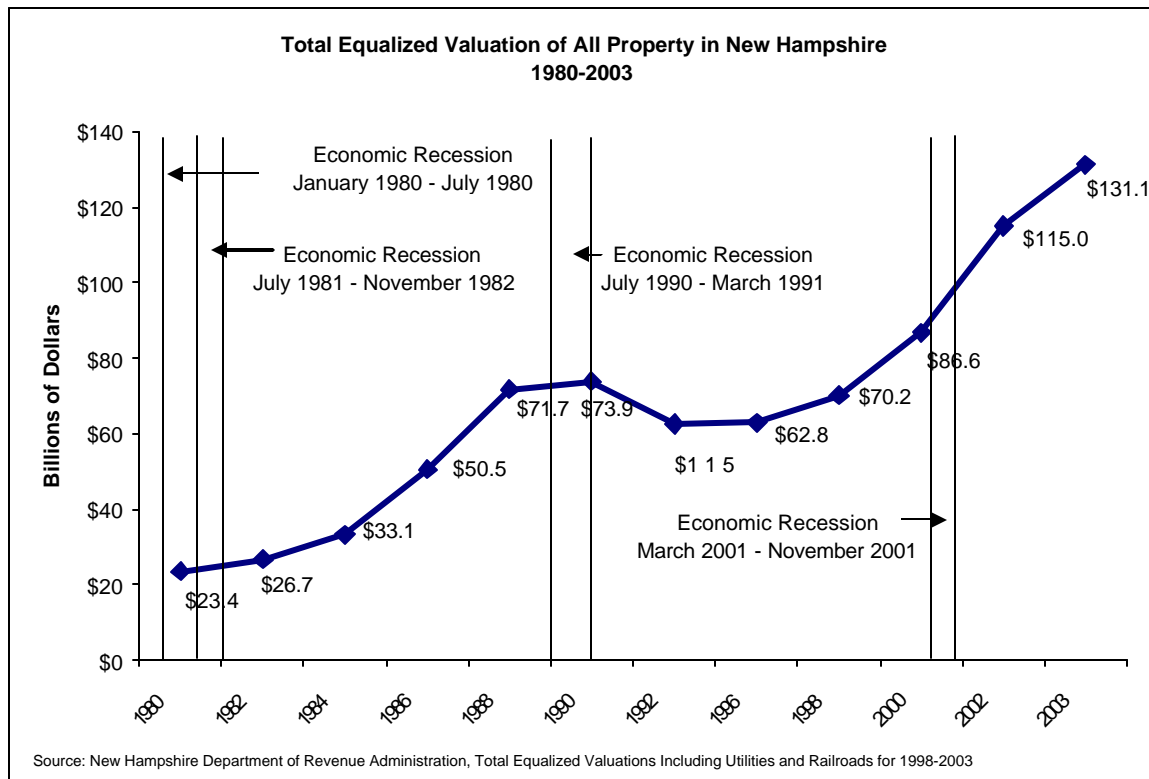
	Concord	Dover	Keene	Lebanon	Merrimack
Single-Family					
Quintile #1	57%	36%	93%	92%	20%
Quintile #2	53%	17%	50%	33%	12%
Quintile #3	49%	16%	46%	29%	12%
Quintile #4	42%	15%	40%	27%	11%
<u>Quintile #5</u>	<u>30%</u>	<u>12%</u>	<u>30%</u>	<u>25%</u>	<u>10%</u>
Total	42%	17%	45%	35%	12%
Condominiums					
Quintile #1	150%	65%	82%	32%	19%
Quintile #2	44%	20%	62%	33%	18%
Quintile #3	48%	12%	55%	31%	16%
Quintile #4	44%	14%	53%	20%	16%
<u>Quintile #5</u>	<u>37%</u>	<u>12%</u>	<u>43%</u>	<u>19%</u>	<u>14%</u>
Total	48%	19%	54%	24%	16%
Manufactured Homes					
Quintile #1	138%	51%	53%	36%	37%
Quintile #2	119%	41%	0%	21%	24%
Quintile #3	98%	34%	0%	28%	18%
Quintile #4	64%	29%	2%	19%	20%
<u>Quintile #5</u>	<u>33%</u>	<u>6%</u>	<u>15%</u>	<u>16%</u>	<u>2%</u>
Total	66%	21%	11%	22%	15%
Two- & Three-Family					
Quintile #1	59%	31%	58%	28%	27%
Quintile #2	56%	27%	56%	22%	12%
Quintile #3	54%	27%	55%	26%	13%
Quintile #4	52%	23%	50%	22%	13%
<u>Quintile #5</u>	<u>50%</u>	<u>24%</u>	<u>42%</u>	<u>21%</u>	<u>13%</u>
Total	53%	26%	50%	24%	15%

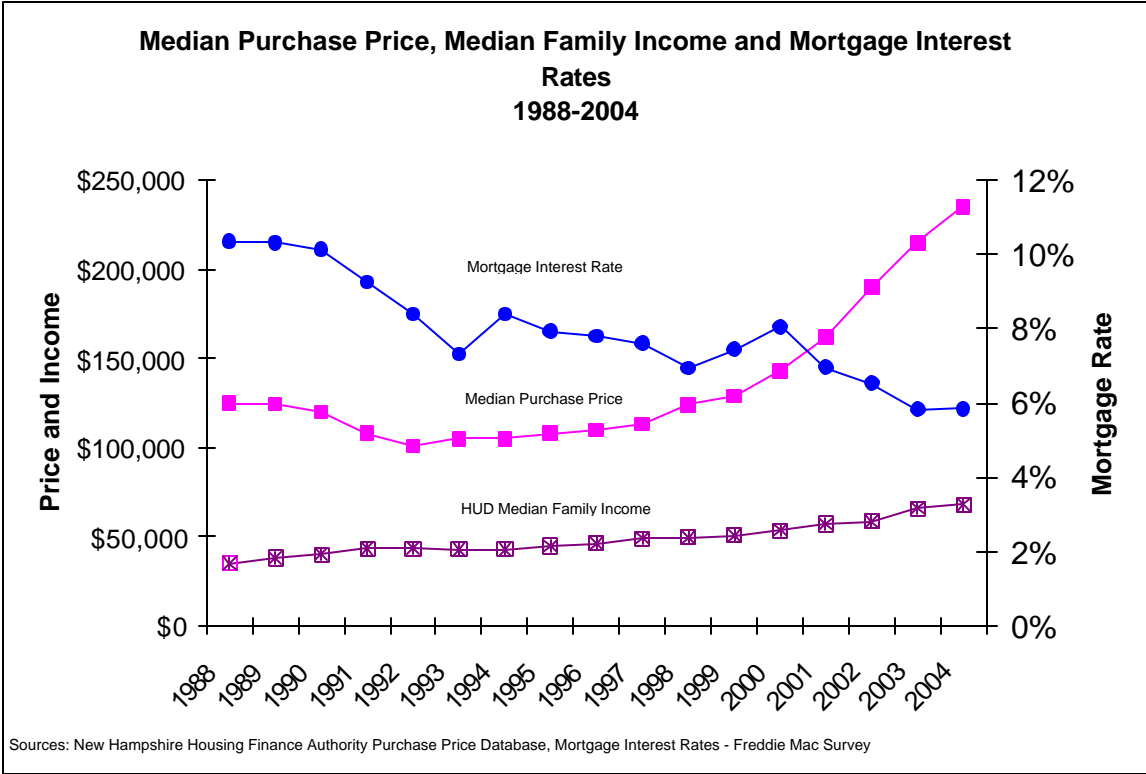
Sources and Notes: Assessment Divisions of selected communities. Residential homes include single-family homes, condominiums, manufactured homes, and two- and three-family homes. See Appendix B for methodology.

Detailed data for each community, by category and quintile, can be found in Appendix B including the number of housing units, the average previous assessed value, the average current assessed value, the total previous assessed value, and the total current assessed value.

HOUSING SUPPLY AND MARKET CONDITIONS

Market conditions are extremely important in determining the quantity, range, and prices of housing in New Hampshire. These conditions include employment and population growth, demographic factors, land availability, economic well-being, and interest rates. As interest rates fell, and the economy continued to grow, housing has remained strong in New Hampshire, as in many markets around the country.





Although forecasts for New Hampshire are for continued modest economic growth, as interest rates continue to rise, and as other market conditions change, the housing supply will adjust.

HOUSING SUPPLY AND LOCAL PRACTICES

While market conditions are key factors in housing supply and prices, local regulatory practices also strongly influence market development. Local regulation may affect not only how many housing units are built, but what types. Theoretically, local land use regulations have been postulated to increase housing prices (see for example Levine, 1999, and citations therein of Dowall, 1984, Mark and Goldberg, 1986, and Fischel, 1985). Although the efficiency and effectiveness of land use controls is not universally agreed upon, that land use controls cause higher housing prices is not in dispute. (See for example, Fischel, 1990.) And while economists disagree on the relative impact of various market versus non-market factors on housing supply and prices, there is little disagreement that the impact is significant¹¹. A recent literature review included in a study by the United States Department of Housing and Urban Development found that regulatory barriers at the local level, such as exclusionary zoning, impact fees, growth limits, regulatory requirements and delays, led to increased housing prices, and in some cases, a reduction in supply.

¹¹ Nelson, Arthur, Rolf Pendall, Case Dawkins, and Gerrit Knaap, “The Link Between Growth Management and Housing Affordability: The Academic Evidence,” and comments by William Fischel and Robert Lang in Growth Management and Affordable Housing: Do They Conflict? Anthony Downs, Editor, Brookings Institution, 2004.

**Housing and Urban Development Review of Studies on the Relationship Between
Regulatory Barriers and Housing Prices, Prepared by Housing and Urban Development**

Study	Finding
Ben-Joseph (2003)	Regulatory system has gotten more complex over the last two decades and constitutes the single greatest problem in getting housing built.
Glaeser and Gyourko (2002)	Government regulation is responsible for high housing costs where high costs exist. Measures of zoning strictness are highly correlated with high prices.
Baden and Coursey (2000)	In suburban Chicago, municipal fees increase new housing costs by 70% to 210% of the actual fee imposed, which range from \$2,224 to \$8,942 for an average four-bedroom home in the study.
Green and Malpezzi (2000)	Moving from a light regulatory environment to a heavy regulatory environment raises rents by 17%, increases house values by 51%, and lowers homeownership rates by 10 percentage points.
Mayer and Somerville (2000)	A metropolitan area with a 4.5-month delay in approval and two different types of growth control restrictions would experience 45% (estimated) less construction than a metropolitan area with a 1.5-month approval delay and no growth-management policy.
Phillips and Goodstein (2000)	Portland's Urban Growth Boundary law has increased median house prices in the Portland metropolitan area.
Green (1999)	In Waukesha County, Wisconsin, banning manufactured homes increased home prices by 7.1% to 8.5%. Increasing required minimum frontage by 10 feet drove up prices by 6.1% to 7.8%.
Levine (1999)	A study of 490 California cities and towns found that growth control measures that remove land from development or require less intense development reduced rental and ownership housing. Impacts on rental housing were particularly severe.
Salama, Schill, and Stark (1999)	In New York City, the price of newly built homes could decline by 25% if the city implemented a comprehensive barrier removal strategy.

Source: U.S. Department of Housing & Urban Development. *Why Not in Our Community: Removing Barriers to Affordable Housing*, February, 2005.

In New Hampshire, there is an increasing number of communities adopting and considering adopting growth limits. According to a recent news report, at least 42 towns have adopted ordinances that limit the number of permits issued each year¹². An earlier 2002 study by a New Hampshire legislative commission found that “local land use regulations and municipal regulatory process have had a significant role in preventing or deterring the private sector from responding to the shortage of workforce housing.”¹³

¹² Farrell, Joelle. “Managing Growth on the Agenda.” *Concord Monitor*, March 8, 2005.

¹³ Report of the Legislative Commission, Reducing Regulatory Barriers to Workforce Housing in New Hampshire, November 1, 2002.

EMPLOYER IMPACTS OF TIGHT WORKFORCE HOUSING MARKETS

The primary purpose of this study was to estimate the economic impacts of a tight workforce housing market.

We reviewed what employers say and do relative to the housing needs of their employees. This study reviewed three employer opinion polls, one conducted each year since 2000 at the national level¹⁴ and the other two conducted in 2002¹⁵ and 2005¹⁶ in New Hampshire.

At the national level, the percent of employers that offer housing and relocation benefits has held relatively steady for certain benefits and increased for other benefits. During the period 2000-2004, between 39% and 47% of employers offered temporary relocation benefits, depending on the year. However, an indicator that tight workforce housing markets are putting pressure on employers is that during this same period, the percent of employers offering mortgage assistance, rental assistance, and/or down payment assistance increased significantly. While such benefits were rare in 2000, by 2004, 19% of employers offered rental assistance, 12% offered mortgage assistance, and 8% offered down payment assistance. More employers are willing to put out hard dollars to assist their employees to meet housing needs.

National Trends in Housing Benefits Offered by Employers

Housing Benefit	2004	2003	2002	2001	2000
Temporary Relocation Benefits	43%	44%	47%	41%	39%
Mortgage Assistance	12%	12%	7%	9%	6%
Rental Assistance	19%	15%	5%	8%	6%
Down Payment Assistance	8%	9%	4%	5%	3%

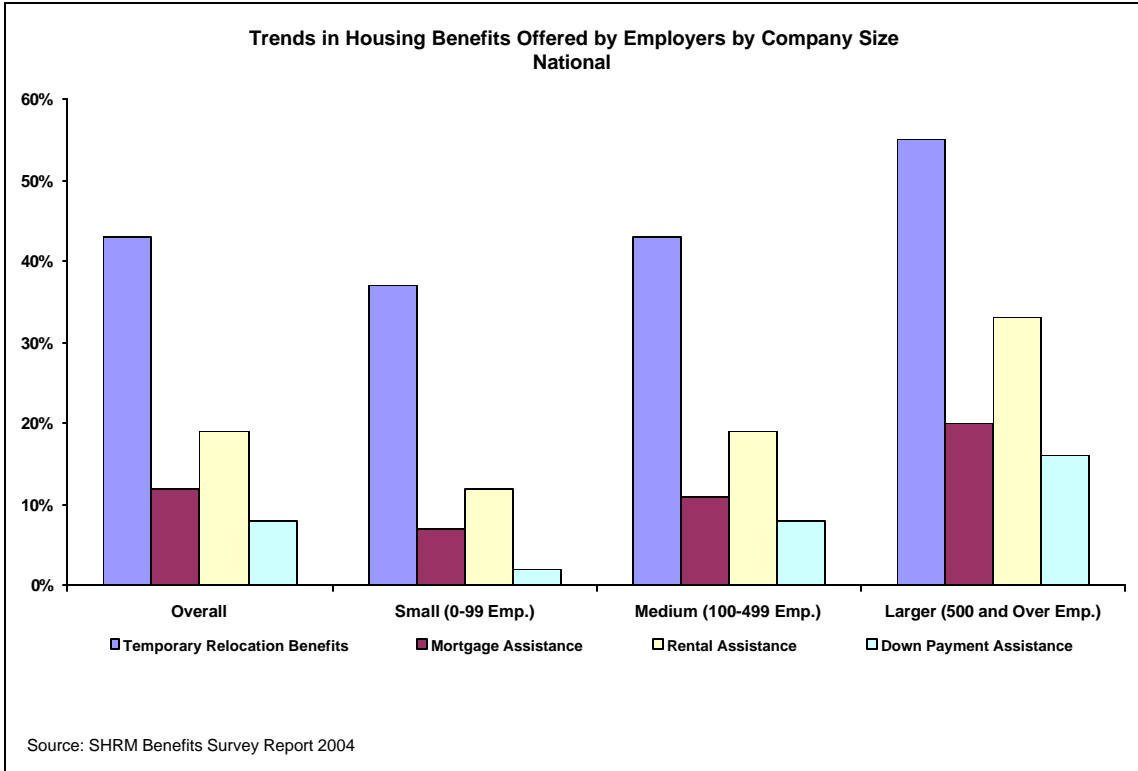
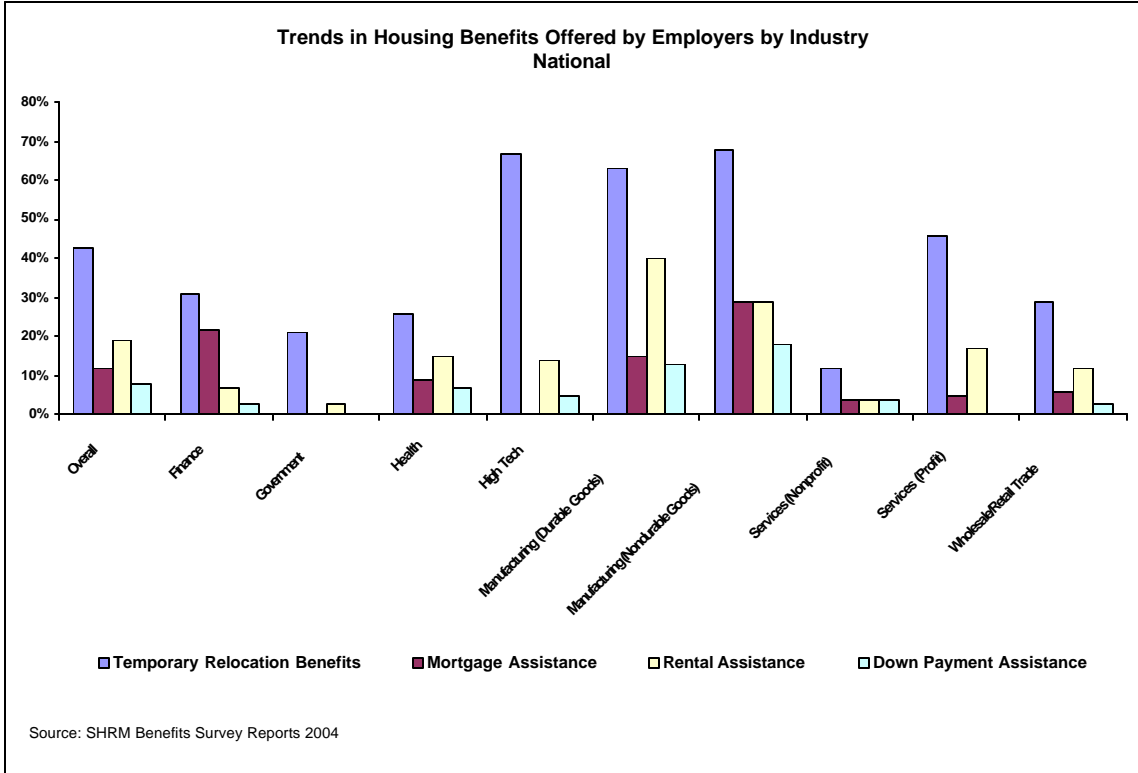
Source: SHRM Benefits Survey Reports 2000-2004

The percent of employers offering housing benefits varies by industry and firm size, as with most benefits. Employers in the manufacturing sectors and larger employers are more likely to offer these benefits. But even among smaller firms, and across the industry sectors, employers are increasingly offering these benefits.

¹⁴ SHRM Foundation 2004 Benefits Survey

¹⁵ ERA Masiello Group Employer Opinion Poll conducted in 2002.

¹⁶ NH Housing Finance Authority's internet opinion poll conducted in March 2005.



With the increased interest among New Hampshire employers on the effects of a tight workforce housing market, two groups conducted opinion surveys in the last few years that are reviewed here. New Hampshire's two employer opinion polls on housing

share important similarities and differences relative to methodology, participant profile, and responses. Both polls were conducted over the internet, and in each case about 100 employers chose to participate. However, the average size of the companies which participated differs: in the 2002 poll, 31% of the respondents reported having less than 100 employees, whereas in the 2005 poll, 77% of the respondents reported having less than 100 employees¹⁷. In the 2005 poll, the respondents employed a total of 8,336 employees, and 15% of the respondents reported being in the manufacturing sector of the economy¹⁸.

Based on the responses, employers' opinions about housing shortages changed between the 2002 poll and the 2005 poll, with a drop in the percent of employers who agreed or strongly agreed that there is a short supply of available rental housing and a short supply of homes for sale. However, the percent of employers who agreed or strongly agreed that rental housing prices and home purchase prices are high relative to incomes did not change. In the 2005 poll, the 96% of employers who agreed or strongly agreed that rental housing prices are high relative to incomes represented 7,888 employees, and the 96% of employers who agreed or strongly agreed that home purchase prices are high relative to incomes represented 8,284 employees. When asked to rank their employees' housing issues, employers in the 2005 poll ranked the cost of housing for purchase and the cost of rental housing first and second, respectively.

Percent of Employers that Agree or Strongly Agree with Views on Housing Supplies and Costs

	Short Supply of Available Rental Housing	Rental Housing Prices High Relative to Incomes	Short Supply of Homes for Sale	Home Purchase Prices High Relative to Incomes
2002 Poll	93%	93%	77%	96%
2005 Poll	81%	96%	52%	96%

Source: New Hampshire Housing Finance Authority Employer Opinion Poll, 2005 and ERA Masiello Group Employer Opinion Poll, 2002.

The frequency at which housing issues are impacting employers has generally increased, when comparing the 2002 poll to the 2005 poll. Larger percentages of employers in the 2005 poll than in the 2002 poll reported that housing issues impacted various aspects of their business “sometimes” or “frequently,” as illustrated in the table below. “Wage pressures,” “extended commutes,” and “relocation of new hires” have remained the top three areas that employers cite as “frequently” impacted. However, other important aspects of employers’ businesses are now reportedly being impacted more frequently than in the past. Areas that more employers described as being “frequently” or “sometimes” impacted include “employee morale” and “employee productivity.”

¹⁷ The 2002 opinion poll may not have specified “employees working in New Hampshire,” but the 2005 opinion poll did.

¹⁸ Responses to these questions were not provided in the publicly-available results from the 2002 poll.

Percent of Employers Reporting that Housing Issues Impacted Their Business

Business Aspect	Frequently		Frequently & Sometimes	
	2002	2005	2002	2005
Wage Pressure	21.0%	35.3%	70.0%	75.0%
Extended Commutes	15.0%	23.9%	62.0%	76.1%
Community Involvement	6.0%	14.3%	35.0%	44.5%
Relocation of New Hires	19.0%	14.1%	55.0%	46.9%
Local Recruitment	3.0%	10.8%	35.0%	47.7%
Industry Competitiveness	12.0%	9.7%	36.0%	42.0%
Employee Morale	8.0%	9.0%	43.0%	61.2%
On Call Response	7.0%	7.8%	26.0%	35.9%
Talent Retention	4.0%	6.2%	27.0%	40.0%
Internal Relocation Acceptance	7.0%	4.8%	23.0%	30.6%
Employee Productivity	2.0%	3.2%	24.0%	40.3%

Source: New Hampshire Housing Finance Authority Employer Opinion Poll, 2005 and ERA Masiello Group Employer Opinion Poll, 2002.

The findings reported in the table above are consistent with the increase, from 25% to 30%, in the percent of New Hampshire employers who reported that they were currently providing some form of assistance or benefits to their employees to help address housing issues. Similarly, there was an increase, from 43% to 61%, in the percent of employers that supported active political and community involvement relative to housing issues and policies. These polls were conducted using different sampling approaches, but are each another set of indicators that New Hampshire employers are concerned about how housing related issues are impacting New Hampshire's workforce.

ESTIMATED ECONOMIC IMPACTS OF TIGHT WORKFORCE HOUSING MARKETS

This study has reviewed data on the relationship between New Hampshire's workforce and housing options and the literature on housing affordability and local regulatory policies. Because of the complex inter-relationships at work here, and the importance of local regulatory practices which vary across the 234 communities in New Hampshire, it is difficult to find simple empirical conclusions of how these regulatory policies are impacting the supply and price of available housing, and the dollar magnitude of the cost burden for working families.

The review of the literature and data finds that for New Hampshire:

- Regulatory practices are likely to be influencing the mix and price of available housing;
- Affordable housing for people in the middle is probably declining and the pressure is likely to increase if more communities adopt certain types of growth management strategies;
- Projected growth by occupation, and overall economic forecasts for New Hampshire, suggest a continued strong housing demand by workers making moderate and low to moderate incomes;
- Aggregate housing production rates have increased to levels that more closely match employment and population growth¹⁹, but the types of housing tend more toward the moderately high and higher end and for the elderly, and rental apartment production with moderate-and lower-prices has not yet made up for the dearth of this type of production during the 1990's.

Given these findings, the purpose of this section is to simulate different scenarios in order to estimate the economic impact of tight workforce housing markets.

We consider three simulations using two different economic models. First, we estimate the economic impact of increasing the stock of modestly priced housing units. Second, we estimate the economic impacts from reducing the growth rate in housing expenditures. Third, we estimate the economic impacts from reducing the growth in relative land and housing prices. The slower growth in housing expenditures and home prices relative to a base cost are meant to simulate the economic impacts of changes in non-market conditions that would lead to greater availability of moderately-and lower-priced homes.

The model we use for simulating pricing and expenditure changes is a 23-sector econometric model of the New Hampshire economy built by Regional Economic

¹⁹ Second homes not factored out of the data on supply.

Modeling, Inc. (REMI). The REMI model allows for simulations of the effects of a relative change in housing prices and housing expenditures on the state's economic performance as compared to a control forecast where there are no changes. Econometrics uses mathematics, statistics, and economic theory to provide an empirical model and quantitative analysis to explain and forecast economic performance and the effect of policy changes on that performance. Inter-industry relationships are included in the REMI model, as well as behavioral equations from econometric theory. This creates a model that will respond logically to changes in an area's economy. The REMI model was first developed in 1980 in response to the demand for simulation models to analyze the economic impacts of public and private-sector projects and programs on affected areas. The REMI model is routinely enhanced and updated to incorporate the latest modeling techniques and available data²⁰. While REMI employs simplifying assumptions to enhance the workability of the model, it is widely used by public policy makers and consulting economists to assist in public policy analysis.

The second model is an input-output model called RIMS II Multipliers, which estimate the sales, household income, and jobs that result from a given amount of expenditure in a given industry (or group of industries) in a given region. RIMS II Multipliers are developed and maintained by the U.S. Bureau of Commerce and are available for any region and any industry (or group of industries). Economic impacts are straightforward to estimate using RIMS II Multipliers which reflect the federal government's ongoing analyses of inter-industry relationships in all regions of the country. The RIMS II Multipliers do not take into account the interactive effects that occur over time like the REMI model does, but they are still widely used in both the private and public sectors to estimate static, present-day economic impacts.

The literature on regulatory barriers, housing supply, and price suggests that the average prices of homes are increased in the presence of regulatory constraints. These price increases may come in the form of less supply overall, a shift towards producing more expensive housing as a substitute for more moderate priced homes, and/or direct cost increases in housing production. It was beyond the scope of this study to develop a model to estimate the quantitative relationship among these variables in all 234 cities and towns in New Hampshire. However, based on the literature and data review, it seems reasonable to run simulations in a REMI model assuming modest reductions in the growth rates in housing expenditures and housing prices to estimate the economic benefit from enacting more growth management strategies that encourage a more balanced supply of housing to meet the needs of New Hampshire's expanding workforce.

This study used two different variables in the REMI model to simulate the effects of improving the supply of affordable workforce housing. The "consumer housing expenditure" variable in the model reflects the cost of shelter, such as mortgage payments, rents, renter's/homeowner's insurance, and property taxes, but does not reflect the cost of household operations, such as utilities, repairs, and maintenance. The "housing and land price" variable reflects the market value of housing and land in New

²⁰ The description of the REMI model is based on information set forth in *The REMI Policy Insight User Guide – Version 5.3*, Chapter 2: Introduction to the REMI Model.

Hampshire. Each variable is expressed as a ratio rather than a dollar figure. The “consumer housing expenditure” variable compares the aggregate amount of money spent statewide on mortgages, rents, etc. in a given year to the amount spent in the reference year, 1996. The “housing and land price” variable compares the average home price in New Hampshire in a given year to the average home price in the United States in that same year. These two variables provide different ways to simulate changes in the growth rates of housing prices and expenditures which could occur through a reduction in non-market barriers.

We ran three basic simulations and then we varied the assumptions to ensure that the results were robust. All simulations were run relative to the base case projections from the REMI standard forecast.

The three basic scenarios we ran are²¹:

REMI / Scenario #1 - A 2.5% reduction in the consumer housing expenditure ratios in each of the ten New Hampshire counties;

REMI / Scenario #2 - A 2.5% reduction in the housing and land price ratios in each of the ten New Hampshire counties;

RIMS / Scenario #3 - A \$127.5 million investment statewide in various types of new and existing residential structures.

Note that while the impact of regulatory policies and practices at the local level can impact prices by 20-30 percent in select markets, the REMI model is run on a county and statewide basis so the input percentages were much lower, 2.5 percent statewide, and for some sensitivity analysis, 5 percent in select counties.

The estimated range of economic benefits of improving the housing infrastructure for New Hampshire’s workforce is summarized in the table below.

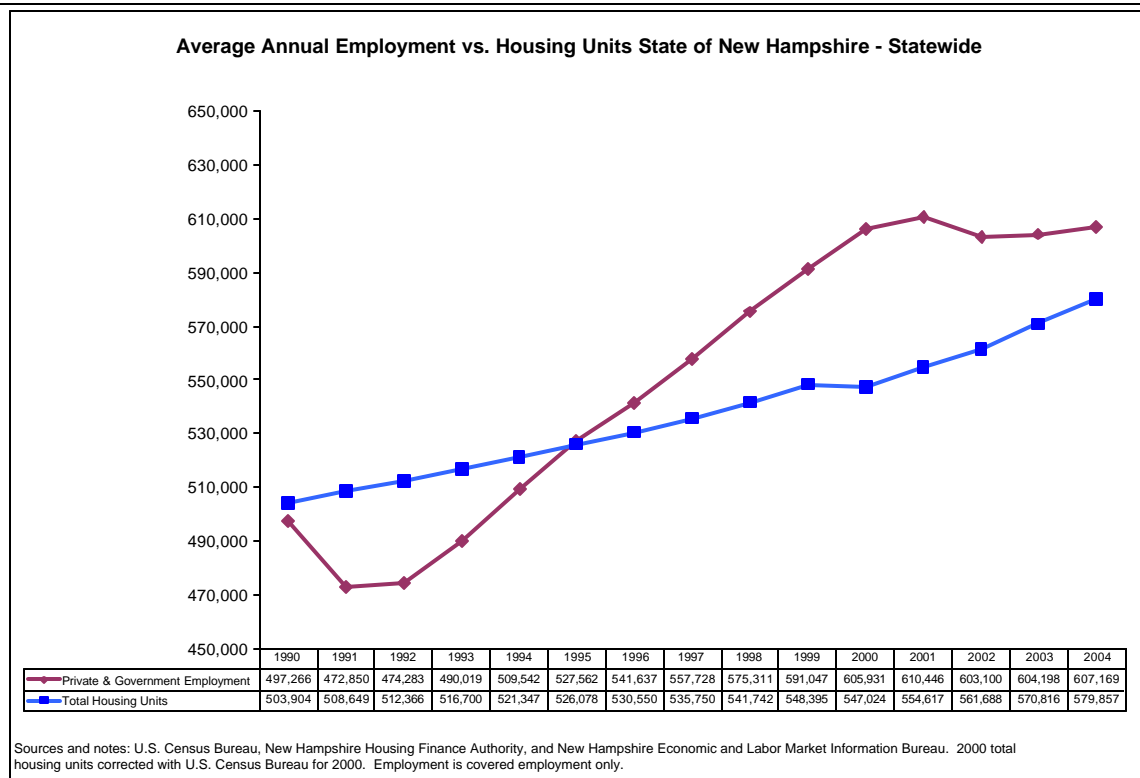
Estimated Annual Increases in Key Economic Indicators²²
(Millions of 2004 Dollars)

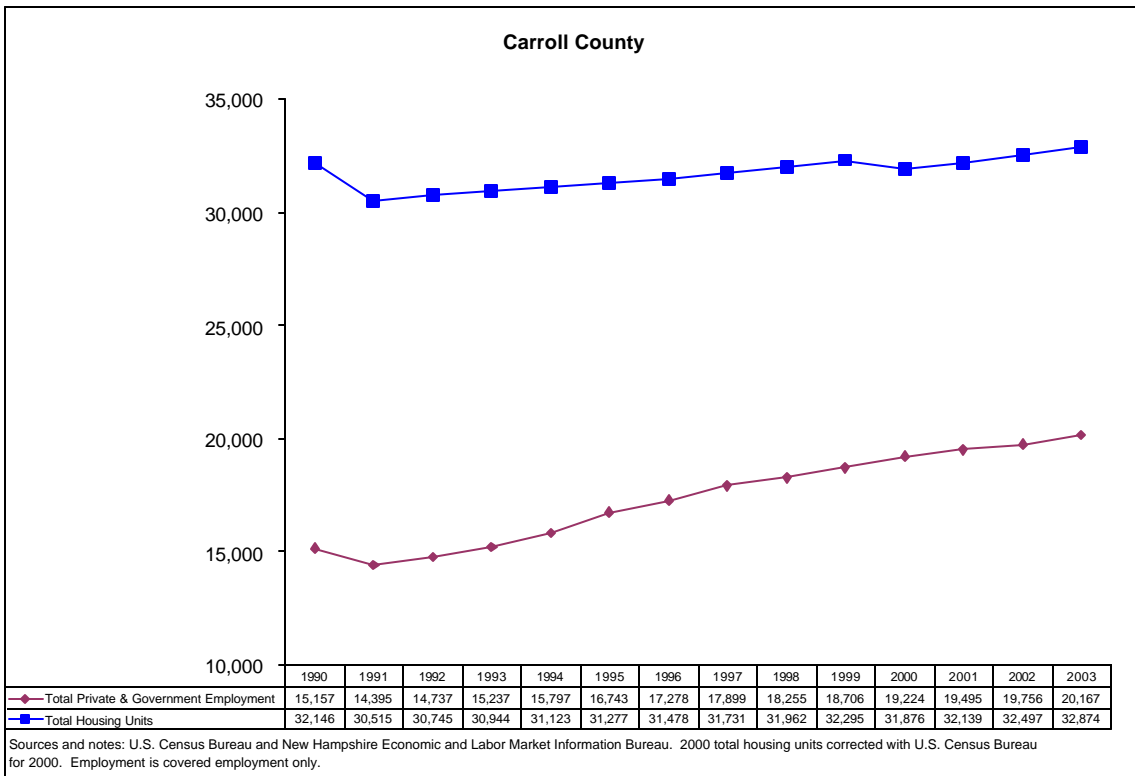
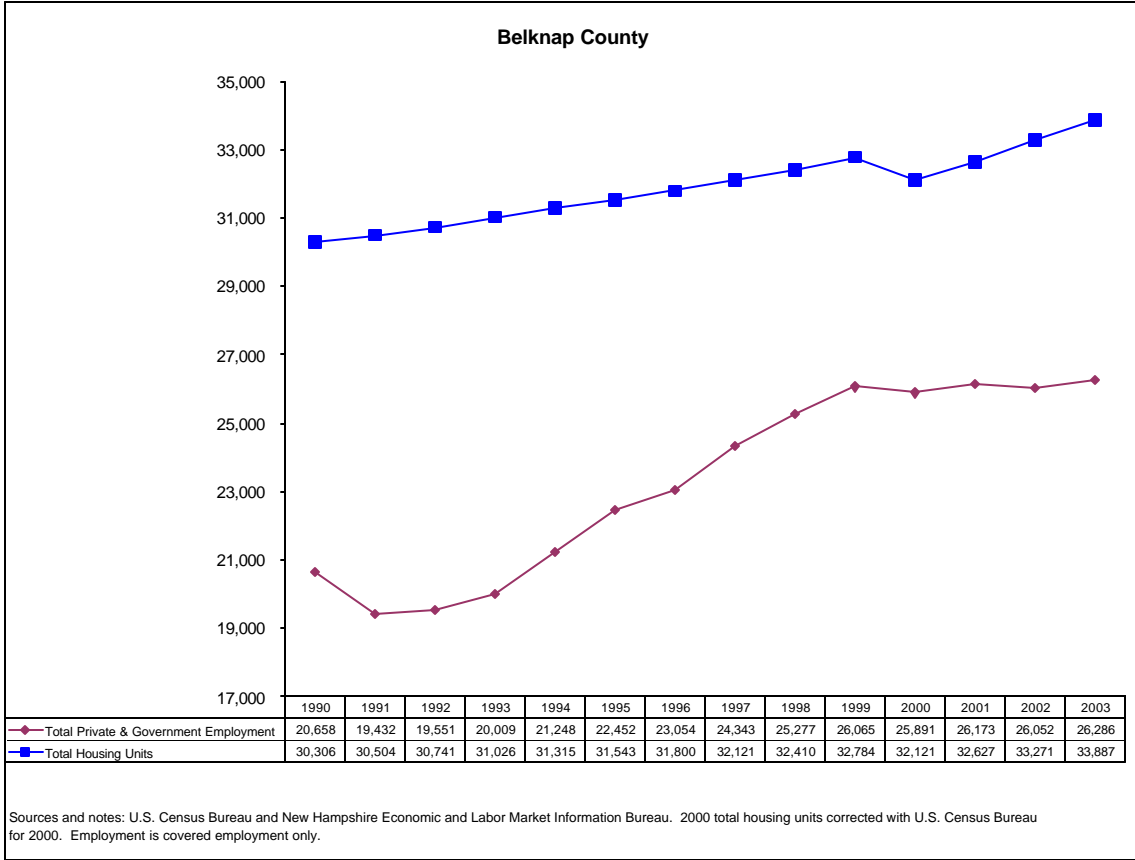
<i>Indicator</i>	<i>Range</i>
Gross State Product	\$110 - \$253
Jobs	1,342 – 2,766
Personal Income	\$57 - \$121
Residential Investment	\$27 - \$128
Other Investment	\$14 - \$43
Sales	\$158 - \$412
State and Local Tax Revenues	\$21 - \$33

²¹ A more detailed presentation of the input assumptions are in Appendix C.

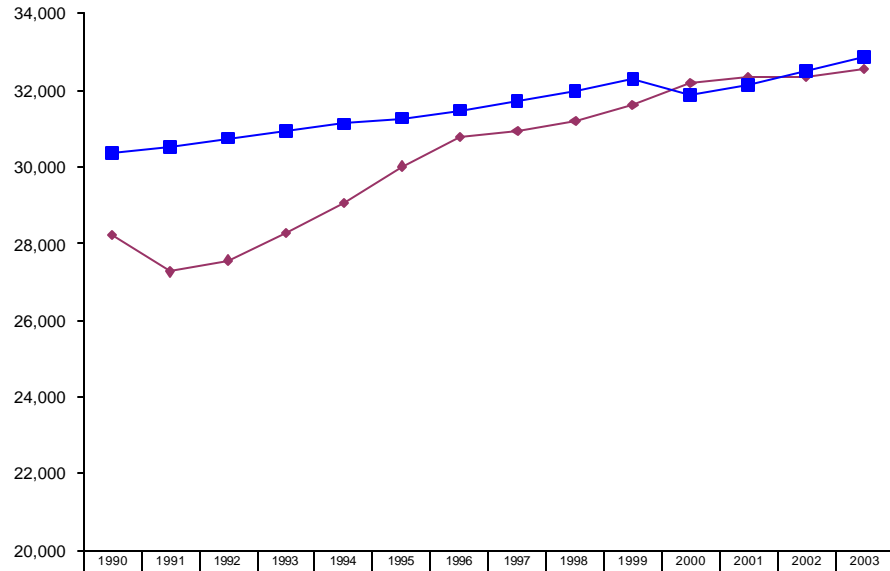
²² More detailed results can be found in Appendix D.

APPENDIX A HOUSING PRODUCTION VS. COVERED EMPLOYMENT





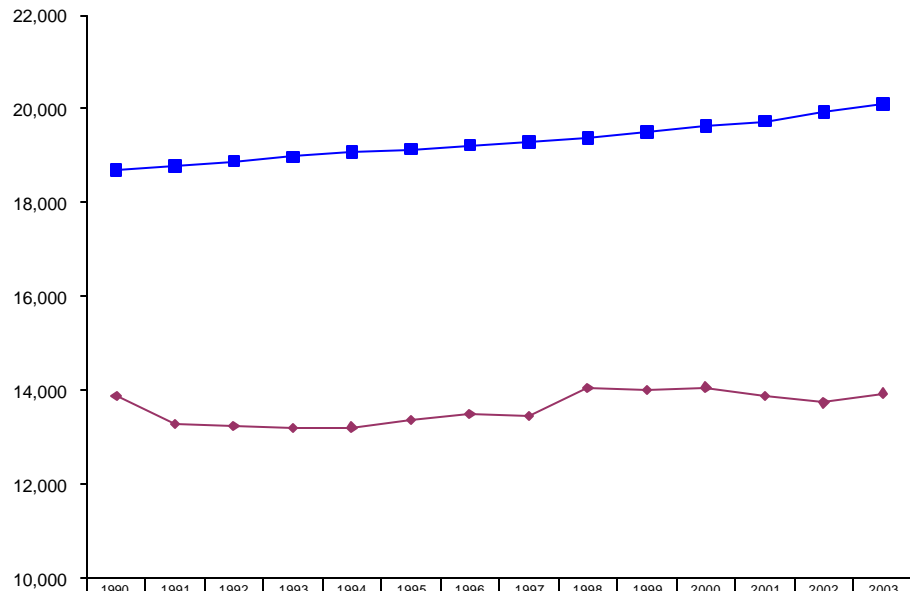
Cheshire County



◆ Total Private & Government Employment	28,232	27,265	27,565	28,281	29,073	30,020	30,799	30,946	31,208	31,604	32,169	32,349	32,369	32,548
■ Total Housing Units	30,350	30,515	30,745	30,944	31,123	31,277	31,478	31,731	31,962	32,295	31,876	32,139	32,497	32,874

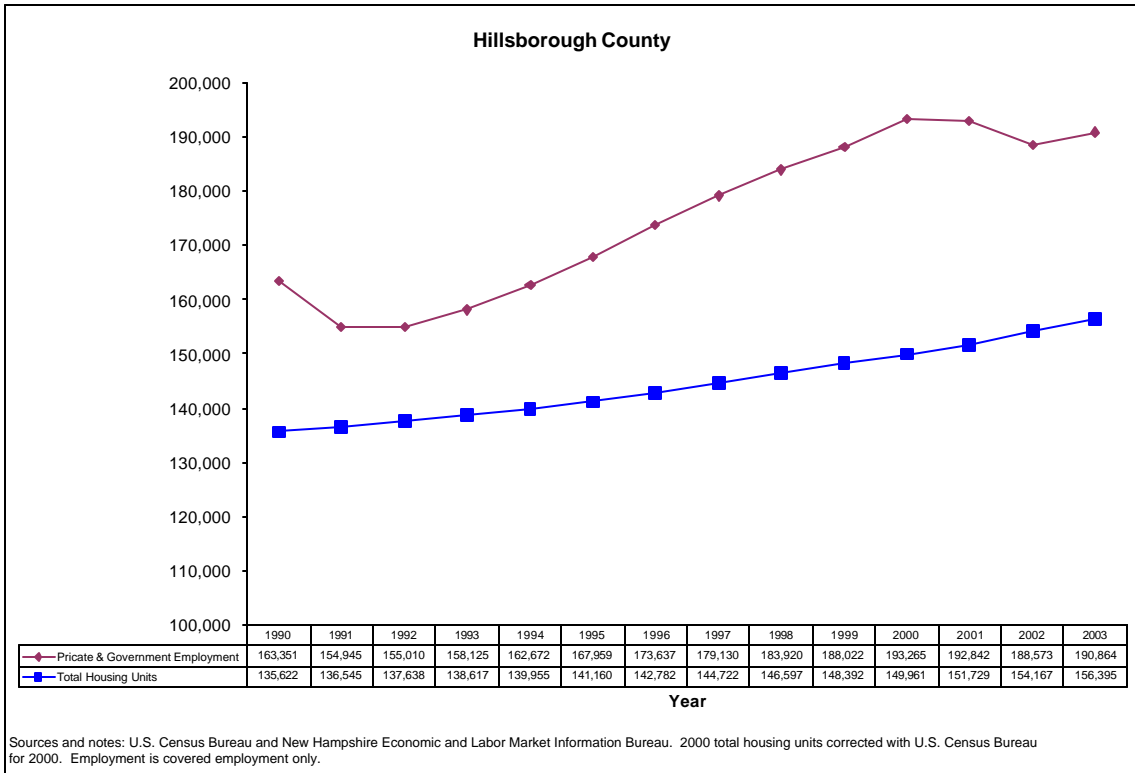
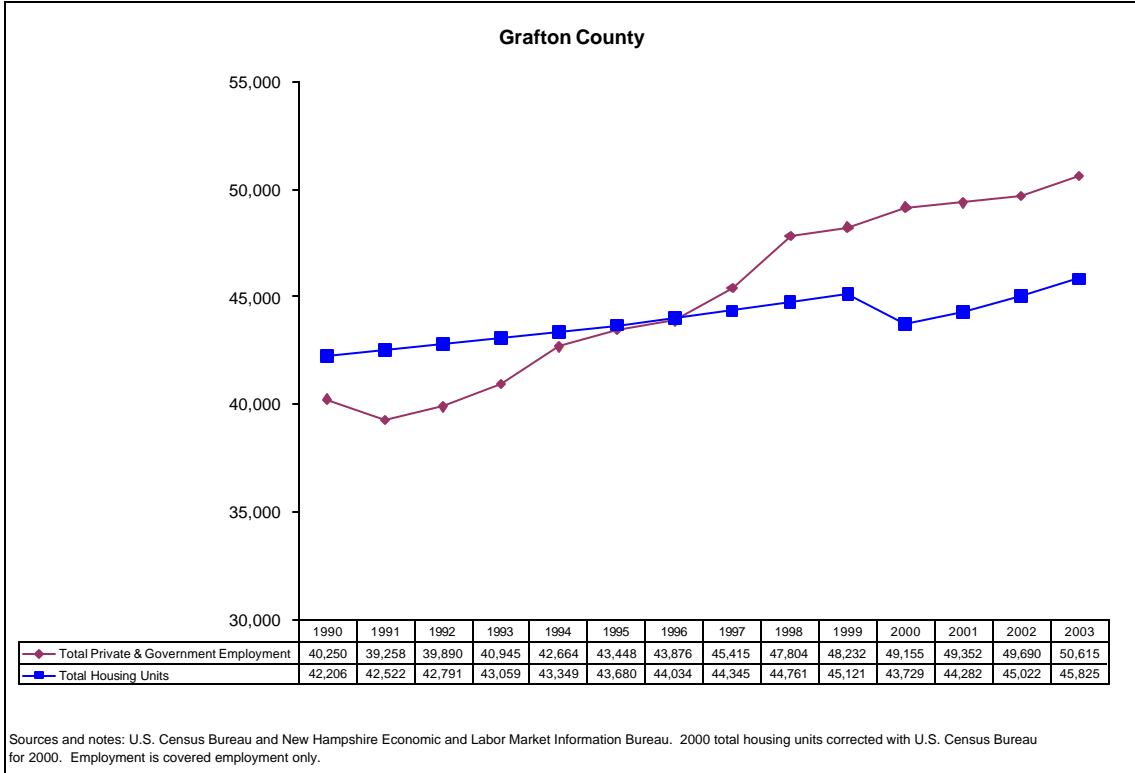
Sources and notes: U.S. Census Bureau and New Hampshire Economic and Labor Market Information Bureau. 2000 total housing units corrected with U.S. Census Bureau for 2000. Employment is covered employment only.

Coos County

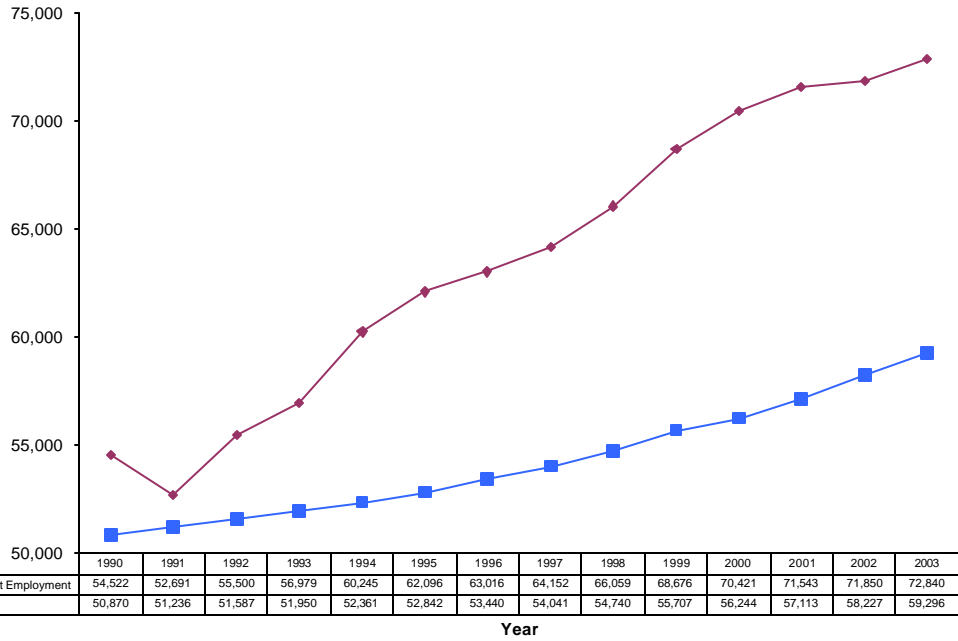


◆ Total Private & Government Employment	13,885	13,280	13,239	13,201	13,225	13,369	13,505	13,467	14,063	14,024	14,073	13,872	13,737	13,946
■ Total Housing Units	18,712	18,771	18,888	18,980	19,084	19,143	19,228	19,293	19,383	19,500	19,623	19,744	19,932	20,102

Sources and notes: U.S. Census Bureau and New Hampshire Economic and Labor Market Information Bureau. 2000 total housing units corrected with U.S. Census Bureau for 2000. Employment is covered employment only.

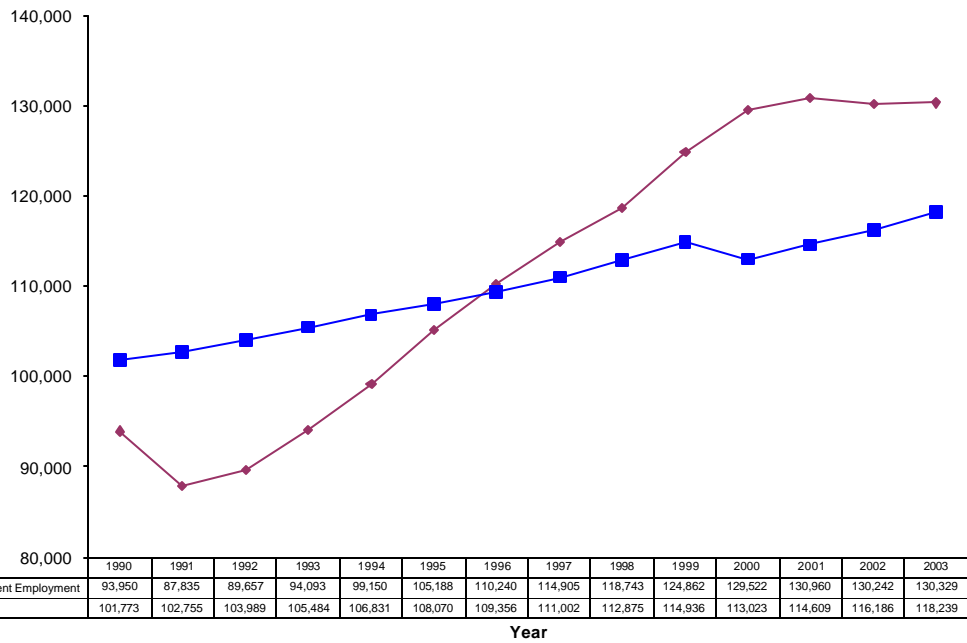


Merrimack County



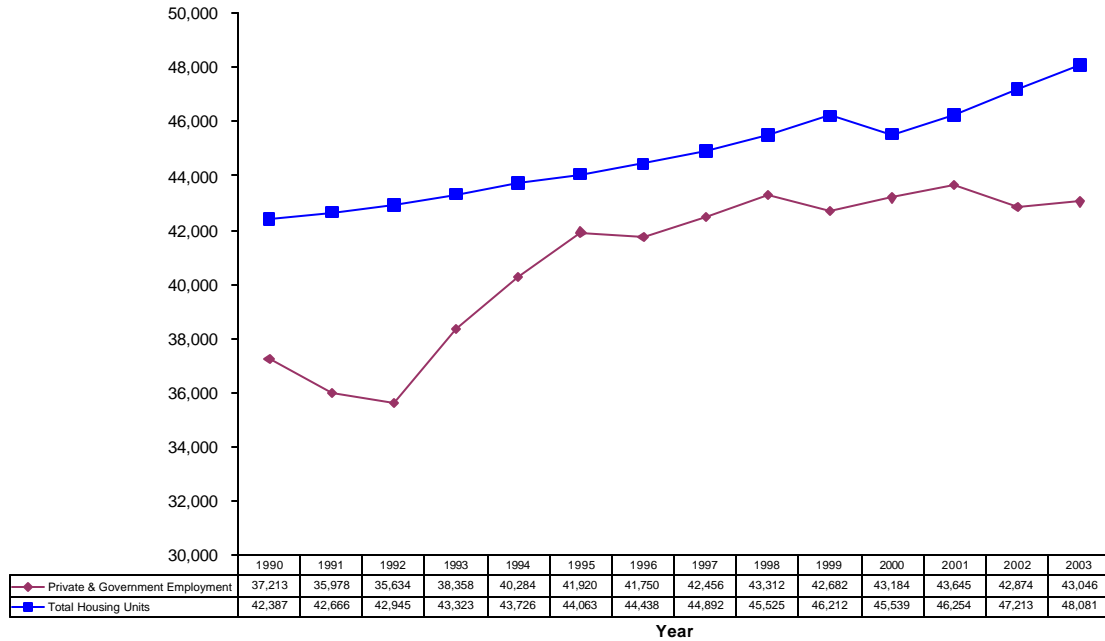
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Rockingham County



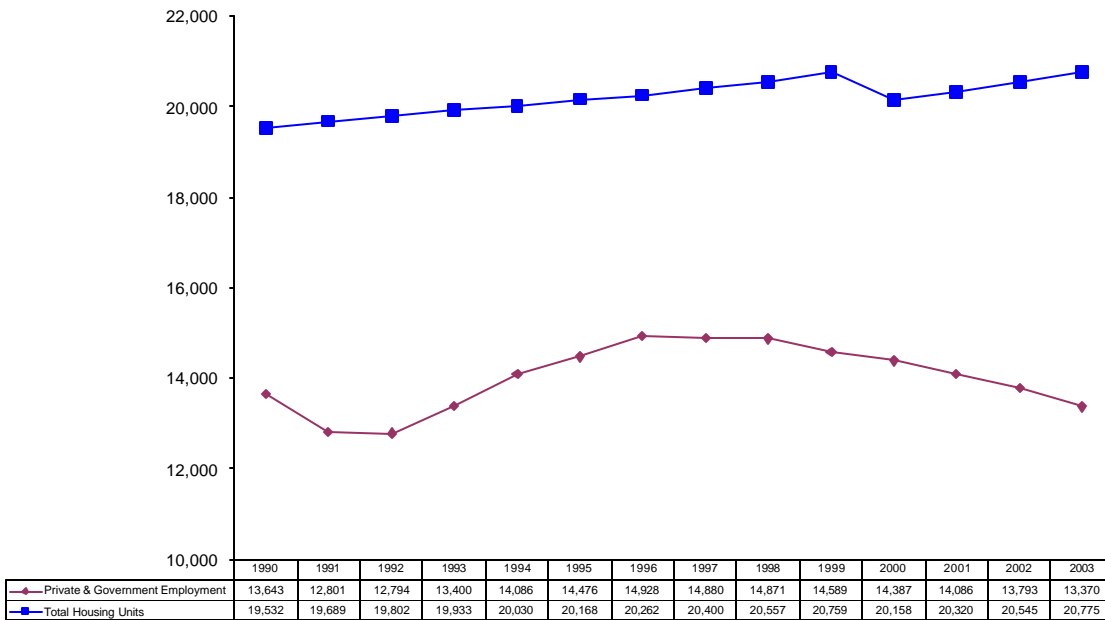
Sources and notes: U.S. Census Bureau and New Hampshire Economic and Labor Market Information Bureau. 2000 total housing units corrected with U.S. Census Bureau for 2000. Employment is covered employment only.

Strafford County



Sources and notes: U.S. Census Bureau and New Hampshire Economic and Labor Market Information Bureau. 2000 total housing units corrected with U.S. Census Bureau for 2000. Employment is covered employment only.

Sullivan County



Sources and notes: U.S. Census Bureau and New Hampshire Economic and Labor Market Information Bureau. 2000 total housing units corrected with U.S. Census Bureau for 2000. Employment is covered employment only.

APPENDIX B

Change in Assessment in Towns and Cities.

5 Case Studies

Concord, Dover, Keene, Lebanon, Merrimack

Changes in Assessments in Concord Properties

	Number of Units ¹	Average Previous Value Per Unit ²	Average Current Value Per Unit ³	% Change in Average	Total Previous Value	Total Current Value	% Change in Total
Single Family							
Quintile #1	1,365	\$88,263	\$138,379	57%	\$120,478,700	\$188,887,200	57%
Quintile #2	1,365	\$113,888	\$174,092	53%	\$155,457,400	\$237,635,300	53%
Quintile #3	1,365	\$133,236	\$198,994	49%	\$181,867,100	\$271,627,100	49%
Quintile #4	1,365	\$165,951	\$235,366	42%	\$226,523,400	\$321,274,500	42%
<u>Quintile #5</u>	<u>1,365</u>	<u>\$275,001</u>	<u>\$356,421</u>	<u>30%</u>	<u>\$375,376,900</u>	<u>\$486,514,100</u>	<u>30%</u>
Total	6,825	\$155,268	\$220,650	42%	\$1,059,703,500	\$1,505,938,200	42%
Condo							
Quintile #1	381	\$22,143	\$55,376	150%	\$8,436,600	\$21,098,100	150%
Quintile #2	381	\$54,112	\$78,101	44%	\$20,616,800	\$29,756,400	44%
Quintile #3	381	\$74,084	\$109,871	48%	\$28,225,900	\$41,860,800	48%
Quintile #4	381	\$91,590	\$131,466	44%	\$34,895,700	\$50,088,700	44%
<u>Quintile #5</u>	<u>383</u>	<u>\$137,050</u>	<u>\$187,880</u>	<u>37%</u>	<u>\$52,490,300</u>	<u>\$71,958,000</u>	<u>37%</u>
Total	1,907	\$75,860	\$112,618	48%	\$144,665,300	\$214,762,000	48%
Manufactured Homes							
Quintile #1	206	\$7,416	\$17,660	138%	\$1,527,600	\$3,638,000	138%
Quintile #2	206	\$10,733	\$23,481	119%	\$2,211,100	\$4,837,100	119%
Quintile #3	206	\$15,728	\$31,108	98%	\$3,239,900	\$6,408,200	98%
Quintile #4	206	\$26,042	\$42,581	64%	\$5,364,600	\$8,771,600	64%
<u>Quintile #5</u>	<u>207</u>	<u>\$46,420</u>	<u>\$61,729</u>	<u>33%</u>	<u>\$9,608,900</u>	<u>\$12,777,900</u>	<u>33%</u>
Total	1,031	\$21,292	\$35,337	66%	\$21,952,100	\$36,432,800	66%
2 & 3-Family⁴							
Quintile #1	481	\$42,066	\$66,920	59%	\$20,233,700	\$32,188,300	59%
Quintile #2	481	\$55,643	\$86,691	56%	\$26,764,400	\$41,698,550	56%
Quintile #3	481	\$64,609	\$99,623	54%	\$31,076,700	\$47,918,450	54%
Quintile #4	481	\$74,025	\$112,412	52%	\$35,606,050	\$54,070,200	52%
<u>Quintile #5</u>	<u>483</u>	<u>\$95,743</u>	<u>\$143,920</u>	<u>50%</u>	<u>\$46,243,950</u>	<u>\$69,513,200</u>	<u>50%</u>
Total	2,407	\$66,442	\$101,948	53%	\$159,924,800	\$245,388,700	53%

¹ One (1) condo unit and ten (10) manufactured homes were excluded from the analysis because their previous and current values were set at \$0. Six (6) condo units and two (2) manufactured homes were excluded from the analysis because their current value was set at \$0, even though their previous values were above \$0. No units had a previous value set at \$0 and a current value set above \$0, suggesting that no new units were added during the period between the two assessments.

² "Previous Value" reflects Concord's estimates of market value as of April 1, 2002 to set tax bills due January 1, 2003.

³ "Current Value" reflects Concord's estimates of market value as of April 1, 2004 to set tax bills due January 1, 2005.

⁴ Includes single-family homes, condominiums, manufactured homes, and two- and three-family homes.

Changes in Assessments in Dover Properties

	Number of Units ¹	Average Previous Value Per Unit ²	Average Current Value Per Unit ³	% Change in Average	Total Previous Value	Total Current Value	% Change in Total
Single-Family							
Quintile #1	1,089	\$135,692	\$184,513	36%	\$147,768,600	\$200,934,800	36%
Quintile #2	1,089	\$168,484	\$197,778	17%	\$183,478,900	\$215,380,600	17%
Quintile #3	1,089	\$196,612	\$227,841	16%	\$214,110,300	\$248,118,800	16%
Quintile #4	1,089	\$243,846	\$280,611	15%	\$265,548,500	\$305,585,200	15%
<u>Quintile #5</u>	<u>1,089</u>	<u>\$365,816</u>	<u>\$411,386</u>	<u>12%</u>	<u>\$398,373,300</u>	<u>\$447,999,300</u>	<u>12%</u>
Total	5,445	\$222,090	\$260,426	17%	\$1,209,279,600	\$1,418,018,700	17%
Condominiums							
Quintile #1	194	\$72,083	\$119,014	65%	\$13,984,100	\$23,088,800	65%
Quintile #2	194	\$125,449	\$150,469	20%	\$24,337,200	\$29,191,000	20%
Quintile #3	194	\$141,653	\$158,622	12%	\$27,480,600	\$30,772,700	12%
Quintile #4	194	\$154,615	\$176,409	14%	\$29,995,400	\$34,223,400	14%
<u>Quintile #5</u>	<u>194</u>	<u>\$237,360</u>	<u>\$265,581</u>	<u>12%</u>	<u>\$46,047,800</u>	<u>\$51,522,700</u>	<u>12%</u>
Total	970	\$146,232	\$174,019	19%	\$141,845,100	\$168,798,600	19%
Mobile Homes & Trailers							
Quintile #1	74	\$15,003	\$22,636	51%	\$1,110,200	\$1,675,100	51%
Quintile #2	74	\$33,097	\$46,549	41%	\$2,449,200	\$3,444,600	41%
Quintile #3	74	\$41,957	\$56,026	34%	\$3,104,800	\$4,145,900	34%
Quintile #4	74	\$72,034	\$92,919	29%	\$5,330,500	\$6,876,000	29%
<u>Quintile #5</u>	<u>74</u>	<u>\$139,435</u>	<u>\$147,265</u>	<u>6%</u>	<u>\$10,318,200</u>	<u>\$10,897,600</u>	<u>6%</u>
Total	370	\$60,305	\$73,079	21%	\$22,312,900	\$27,039,200	21%
2 & 3-Family ⁴							
Quintile #1	324	\$71,687	\$93,622	31%	\$23,226,733	\$30,333,567	31%
Quintile #2	324	\$87,338	\$110,751	27%	\$28,297,367	\$35,883,433	27%
Quintile #3	324	\$98,303	\$124,729	27%	\$31,850,200	\$40,412,100	27%
Quintile #4	324	\$112,065	\$137,563	23%	\$36,308,900	\$44,570,400	23%
<u>Quintile #5</u>	<u>324</u>	<u>\$150,305</u>	<u>\$185,901</u>	<u>24%</u>	<u>\$48,698,800</u>	<u>\$60,232,000</u>	<u>24%</u>
Total	1,620	\$103,940	\$130,513	26%	\$168,382,000	\$211,431,500	26%

¹ Apartments of 4 or more units were excluded from the analysis. Five (5) single-family units, seventy three (73) condos, and one (1) manufactured home were excluded from the analysis because their previous value was set at \$0, suggesting that they did not exist during the tax year 2003.

² "Previous Value" reflects Dover's estimates of market value for the tax year 2003, which runs April 1, 2003 through March 31, 2004.

³ "Current Value" reflects Dover's estimates of market value for the tax year 2004, which runs April 1, 2004 through March 31, 2005.

⁴ Every 2-family property was counted as two units and every 3-family property was counted as three units. The total number of 2-family and 3-family properties was 735.

Changes in Assessments in Keene Properties

	Number of Units ¹	Average Previous Value Per Unit ²	Average Current Value Per Unit ³	% Change in Average	Total Previous Value	Total Current Value	% Change in Total
Single Family							
Quintile #1	890	\$67,605	\$130,660	93%	\$60,168,300	\$116,287,600	93%
Quintile #2	890	\$91,526	\$136,989	50%	\$81,458,300	\$121,920,000	50%
Quintile #3	890	\$107,147	\$156,817	46%	\$95,361,200	\$139,567,100	46%
Quintile #4	890	\$134,823	\$188,770	40%	\$119,992,900	\$168,004,900	40%
Quintile #5	892	\$227,807	\$296,471	30%	\$203,203,800	\$264,452,000	30%
Total	4,452	\$125,828	\$181,993	45%	\$560,184,500	\$810,231,600	45%
Condo							
Quintile #1	101	\$39,879	\$72,534	82%	\$4,027,800	\$7,325,900	82%
Quintile #2	101	\$60,823	\$98,694	62%	\$6,143,100	\$9,968,100	62%
Quintile #3	101	\$78,892	\$122,257	55%	\$7,968,100	\$12,348,000	55%
Quintile #4	101	\$103,358	\$158,619	53%	\$10,439,200	\$16,020,500	53%
<u>Quintile #5</u>	<u>103</u>	<u>\$136,635</u>	<u>\$195,679</u>	<u>43%</u>	<u>\$14,073,400</u>	<u>\$20,154,900</u>	<u>43%</u>
Total	507	\$84,125	\$129,817	54%	\$42,651,600	\$65,817,400	54%
Mobile Homes & Trailers⁴							
Quintile #1	78	\$9,973	\$15,282	53%	\$777,900	\$1,192,000	53%
Quintile #2	78	\$14,595	\$14,667	0%	\$1,138,400	\$1,144,000	0%
Quintile #3	78	\$19,186	\$19,142	0%	\$1,496,500	\$1,493,100	0%
Quintile #4	78	\$25,003	\$25,583	2%	\$1,950,200	\$1,995,500	2%
<u>Quintile #5</u>	<u>78</u>	<u>\$41,978</u>	<u>\$48,260</u>	<u>15%</u>	<u>\$3,274,300</u>	<u>\$3,764,300</u>	<u>15%</u>
Total	390	\$22,147	\$24,587	11%	\$8,637,300	\$9,588,900	11%
2 & 3-Family⁵							
Quintile #1	282	\$36,403	\$57,522	58%	\$10,265,700	\$16,221,300	58%
Quintile #2	282	\$44,478	\$69,406	56%	\$12,542,700	\$19,572,400	56%
Quintile #3	282	\$50,624	\$78,402	55%	\$14,275,900	\$22,109,233	55%
Quintile #4	282	\$57,510	\$86,105	50%	\$16,217,850	\$24,281,667	50%
<u>Quintile #5</u>	<u>281</u>	<u>\$80,485</u>	<u>\$113,964</u>	<u>42%</u>	<u>\$22,616,350</u>	<u>\$32,023,800</u>	<u>42%</u>
Total	1,409	\$53,881	\$81,056	50%	\$75,918,500	\$114,208,400	50%

¹ Apartments of 4 or more units were excluded from the analysis. Thirty-four (34) single-family units and seven (7) manufactured homes were excluded from the analysis because they did not exist in 2001. One (1) manufactured home was excluded from the analysis because its current value was set at \$0, even though its previous value was above \$0.

² "Previous Value" reflects Keene's estimates of market value for the tax year 2001, which runs April 1, 2001 through March 31, 2002.

³ "Current Value" reflects Keene's estimates of market value for the tax year 2005, which runs April 1, 2005 through March 31, 2006.

⁴ According to Keene's Department of Assessment, very few of the manufactured homes in Keene are newer, and many suffer from a lack of maintenance, thus explaining the lack of increases in value.

⁵ Every 2-family property was counted as two units and every 3-family property was counted as three units. The total number of 2-family and 3-family properties was 642.

Changes in Assessments in Lebanon Properties

	Number of Units ¹	Average Previous Value Per Unit ²	Average Current Value Per Unit ³	% Change in Average	Total Previous Value	Total Current Value	% Change in Total
Single Family							
Quintile #1	508	\$68,562	\$131,929	92%	\$34,829,483	\$67,019,938	92%
Quintile #2	508	\$101,820	\$135,818	33%	\$51,724,771	\$68,995,293	33%
Quintile #3	508	\$120,711	\$155,987	29%	\$61,321,202	\$79,241,576	29%
Quintile #4	508	\$146,352	\$185,431	27%	\$74,346,835	\$94,198,740	27%
Quintile #5	507	\$219,568	\$274,888	25%	\$111,320,903	\$139,368,050	25%
Total	2,539	\$131,368	\$176,772	35%	\$333,543,194	\$448,823,597	35%
Condo							
Quintile #1	114	\$30,819	\$40,795	32%	\$3,513,400	\$4,650,600	32%
Quintile #2	114	\$38,369	\$51,052	33%	\$4,374,100	\$5,819,900	33%
Quintile #3	114	\$43,134	\$56,615	31%	\$4,917,300	\$6,454,100	31%
Quintile #4	114	\$68,090	\$81,812	20%	\$7,762,300	\$9,326,600	20%
Quintile #5	115	\$135,737	\$161,823	19%	\$15,609,700	\$18,609,600	19%
Total	571	\$63,357	\$78,565	24%	\$36,176,800	\$44,860,800	24%
Mobile Homes & Trailers							
Quintile #1	37	\$12,035	\$16,330	36%	\$445,300	\$604,200	36%
Quintile #2	37	\$15,792	\$19,076	21%	\$584,300	\$705,800	21%
Quintile #3	37	\$18,327	\$23,459	28%	\$678,100	\$868,000	28%
Quintile #4	37	\$23,538	\$28,005	19%	\$870,900	\$1,036,200	19%
Quintile #5	38	\$39,379	\$45,845	16%	\$1,496,400	\$1,742,100	16%
Total	186	\$21,909	\$26,647	22%	\$4,075,000	\$4,956,300	22%
2 & 3-Family⁴							
Quintile #1	150	\$45,921	\$58,892	28%	\$6,888,083	\$8,833,733	28%
Quintile #2	150	\$57,133	\$69,665	22%	\$8,570,000	\$10,449,700	22%
Quintile #3	150	\$53,270	\$66,886	26%	\$7,990,480	\$10,032,925	26%
Quintile #4	150	\$53,682	\$65,632	22%	\$8,052,317	\$9,844,783	22%
Quintile #5	150	\$58,148	\$70,318	21%	\$8,722,147	\$10,547,708	21%
Total	750	\$53,631	\$66,278	24%	\$40,223,027	\$49,708,850	24%

¹ Seven (7) manufactured homes were excluded from the analysis because their previous values were set at \$0.

² "Previous Value" reflects Lebanon's estimates of market value for the tax year 2000, which runs April 1, 2000 through March 31, 2001.

³ "Current Value" reflects Lebanon's estimates of market value for the tax year 2004, which runs April 1, 2004 through March 31, 2005.

⁴ Every 2-family property was counted as two units and every 3-family property was counted as three units. The total number of 2-family and 3-family properties was 336.

Changes in Assessments in Merrimack Properties

	Number of Units ¹	Average Previous Value Per Unit ²	Average Current Value Per Unit ³	% Change in Average	Total Previous Value	Total Current Value	% Change in Total
Single Family							
Quintile #1	1,279	\$152,145	\$182,482	20%	\$194,592,844	\$233,394,300	20%
Quintile #2	1,279	\$184,731	\$206,827	12%	\$236,270,700	\$264,532,100	12%
Quintile #3	1,279	\$209,251	\$233,996	12%	\$267,632,100	\$299,281,000	12%
Quintile #4	1,279	\$247,128	\$274,663	11%	\$316,076,200	\$351,294,400	11%
Quintile #5	1,278	\$316,583	\$349,113	10%	\$404,593,500	\$446,166,800	10%
Total	6,394	\$221,953	\$249,401	12%	\$1,419,165,344	\$1,594,668,600	12%
Condo							
Quintile #1	411	\$89,059	\$106,144	19%	\$36,603,400	\$43,625,100	19%
Quintile #2	411	\$112,713	\$133,485	18%	\$46,325,200	\$54,862,200	18%
Quintile #3	411	\$134,131	\$155,017	16%	\$55,127,900	\$63,712,000	16%
Quintile #4	411	\$145,209	\$169,091	16%	\$59,680,800	\$69,496,500	16%
Quintile #5	412	\$204,294	\$232,374	14%	\$84,169,300	\$95,738,100	14%
Total	2,056	\$137,114	\$159,258	16%	\$281,906,600	\$327,433,900	16%
Mobile Homes & Trailers							
Quintile #1	30	\$22,813	\$31,283	37%	\$684,400	\$938,500	37%
Quintile #2	30	\$34,510	\$42,890	24%	\$1,035,300	\$1,286,700	24%
Quintile #3	30	\$46,133	\$54,407	18%	\$1,384,000	\$1,632,200	18%
Quintile #4	30	\$55,530	\$66,573	20%	\$1,665,900	\$1,997,200	20%
Quintile #5	29	\$90,459	\$92,421	2%	\$2,623,300	\$2,680,200	2%
Total	149	\$49,617	\$57,281	15%	\$7,392,900	\$8,534,800	15%
2 & 3-Family⁴							
Quintile #1	34	\$73,585	\$93,115	27%	\$2,501,900	\$3,165,900	27%
Quintile #2	34	\$90,006	\$100,521	12%	\$3,060,200	\$3,417,700	12%
Quintile #3	34	\$101,684	\$114,441	13%	\$3,457,250	\$3,891,000	13%
Quintile #4	34	\$115,801	\$130,918	13%	\$3,937,250	\$4,451,200	13%
Quintile #5	36	\$137,211	\$154,725	13%	\$4,939,600	\$5,570,100	13%
Total	172	\$104,048	\$119,162	15%	\$17,896,200	\$20,495,900	15%

¹ Apartments of 4 or more units were excluded from the analysis. There were no units in the data from the Assessor's Office that had previous and/or current values set at \$0.

² "Previous Value" reflects Merrimack's estimates of market value for the tax year 2002, which runs April 1, 2002 through March 31, 2003.

³ "Current Value" reflects Merrimack's estimates of market value for the tax year 2004, which runs April 1, 2004 through March 31, 2005.

⁴ Every 2-family property was counted as two units and every 3-family property was counted as three units. The total number of 2-family and 3-family properties was 82.

APPENDIX C

Base Case Assumptions and Simulations

Scenario #1

A 2.5% reduction in the consumer housing expenditure ratios in and of the ten New Hampshire counties.

REMI's Standard Forecast for the Relative Consumer Housing Expenditure Ratios

County	Projections →									
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belknap	1.191	1.219	1.244	1.269	1.295	1.322	1.349	1.376	1.404	1.433
Carroll	1.260	1.289	1.316	1.344	1.372	1.400	1.429	1.459	1.490	1.520
Cheshire	1.197	1.225	1.250	1.276	1.303	1.330	1.357	1.385	1.414	1.443
Coos	1.164	1.190	1.213	1.237	1.262	1.286	1.312	1.337	1.364	1.391
Grafton	1.238	1.268	1.295	1.322	1.350	1.379	1.408	1.437	1.468	1.499
Hillsborough	1.239	1.269	1.296	1.323	1.351	1.379	1.408	1.437	1.466	1.496
Merrimack	1.235	1.264	1.291	1.319	1.347	1.375	1.404	1.433	1.463	1.494
Rockingham	1.265	1.296	1.323	1.351	1.380	1.409	1.438	1.468	1.499	1.530
Strafford	1.193	1.221	1.247	1.273	1.299	1.326	1.354	1.382	1.410	1.439
Sullivan	1.200	1.228	1.252	1.277	1.303	1.329	1.356	1.383	1.412	1.440

REMI's Standard Forecast for the Relative Consumer Housing Expenditure Ratios Reduced by 2.5%

County	Projections →									
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belknap	1.161	1.189	1.213	1.237	1.263	1.289	1.315	1.342	1.369	1.397
Carroll	1.229	1.257	1.283	1.310	1.338	1.365	1.393	1.423	1.453	1.482
Cheshire	1.167	1.194	1.219	1.244	1.270	1.297	1.323	1.350	1.379	1.407
Coos	1.135	1.160	1.183	1.206	1.230	1.254	1.279	1.304	1.330	1.356
Grafton	1.207	1.236	1.263	1.289	1.316	1.345	1.373	1.401	1.431	1.462
Hillsborough	1.208	1.237	1.264	1.290	1.317	1.345	1.373	1.401	1.429	1.459
Merrimack	1.204	1.232	1.259	1.286	1.313	1.341	1.369	1.397	1.426	1.457
Rockingham	1.233	1.264	1.290	1.317	1.346	1.374	1.402	1.431	1.462	1.492
Strafford	1.163	1.190	1.216	1.241	1.267	1.293	1.320	1.347	1.375	1.403
Sullivan	1.170	1.197	1.221	1.245	1.270	1.296	1.322	1.348	1.377	1.404

Scenario #2

A 2.5% reduction in the housing and land price ratios in each of the ten New Hampshire counties.

REMI's Standard Forecast for the Relative Housing & Land Price Ratio

County	Projections →									
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belknap	0.930	0.932	0.933	0.935	0.936	0.937	0.938	0.939	0.940	0.942
Carroll	1.052	1.056	1.057	1.060	1.062	1.065	1.068	1.071	1.073	1.075
Cheshire	0.907	0.905	0.903	0.901	0.900	0.898	0.897	0.896	0.895	0.895
Coos	0.593	0.588	0.583	0.579	0.575	0.571	0.567	0.564	0.560	0.558
Grafton	0.946	0.949	0.951	0.953	0.956	0.959	0.961	0.964	0.967	0.970
Hillsborough	1.190	1.188	1.185	1.183	1.181	1.179	1.176	1.174	1.172	1.171
Merrimack	1.025	1.027	1.028	1.030	1.032	1.034	1.036	1.038	1.041	1.043
Rockingham	1.415	1.417	1.418	1.420	1.421	1.422	1.422	1.424	1.425	1.425
Strafford	0.980	0.979	0.977	0.976	0.975	0.974	0.972	0.972	0.971	0.970
Sullivan	0.782	0.780	0.776	0.774	0.772	0.770	0.767	0.766	0.764	0.762

REMI's Standard Forecast for the Relative Housing & Land Price Ratios Reduced by 2.5%

County	Projections →									
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belknap	0.907	0.909	0.910	0.912	0.913	0.914	0.915	0.916	0.917	0.918
Carroll	1.026	1.030	1.031	1.034	1.035	1.038	1.041	1.044	1.046	1.048
Cheshire	0.884	0.882	0.880	0.878	0.878	0.876	0.875	0.874	0.873	0.873
Coos	0.578	0.573	0.568	0.565	0.561	0.557	0.553	0.550	0.546	0.544
Grafton	0.922	0.925	0.927	0.929	0.932	0.935	0.937	0.940	0.943	0.946
Hillsborough	1.160	1.158	1.155	1.153	1.151	1.150	1.147	1.145	1.143	1.142
Merrimack	0.999	1.001	1.002	1.004	1.006	1.008	1.010	1.012	1.015	1.017
Rockingham	1.380	1.382	1.383	1.385	1.385	1.386	1.386	1.388	1.389	1.389
Strafford	0.956	0.955	0.953	0.952	0.951	0.950	0.948	0.948	0.947	0.946
Sullivan	0.762	0.761	0.757	0.755	0.753	0.751	0.748	0.747	0.745	0.743

Scenario #3

Increase Residential Investment by \$127.5 million.

RIMS II Multipliers

	Single-Family	Multi-Family	Additions & Alterations	Maintenance & Repair
Jobs	12.7	16.5	16.6	17.1
Sales	1.5977	2.1908	2.1033	2.0932
Income	0.3641	0.5370	0.5368	0.5461

The assumptions above represent the assumptions in the three basic simulations. For each of the three approaches, the models were run using a range of input assumptions. In the REMI simulations, different assumptions were made about the allocations across counties and the rates of change over time. While regulatory policies and practices can impact prices by 20-30 percent in select markets, the model is on an aggregate county and statewide basis and thus much lower inputs were considered, in the range of 1% to 10% for specified counties. In the RIMS simulations, different assumptions were made about the levels and allocations of investment among new construction, rehabs, single-family, and multi-family. The results reported in the study represent the range of results. In order to develop more precise estimates, a town by town model of housing prices and supply as they relate to specific regulatory policies and practices would need to be developed.

APPENDIX D

Summary of Findings

Estimated Increases in Key Economic Indicators, 2010 (Millions of 2004 Dollars)

Scenario	#1	#2	#3
GSP	\$109.7	\$253.1	NA
Jobs	1,342	2,766	2,005
Personal Income	\$56.9	\$120.5	\$63.2
Residential Investment	\$26.9	\$22.0	\$127.5
Other Investment	\$14.1	\$43.0	NA
Sales	\$157.7	\$411.9	\$254.5
State and Local Tax Revenues	\$21.3	\$32.9	N/A

REMI / Scenario #1 - A 2.5% reduction in the consumer housing expenditure ratios in each of the ten New Hampshire counties;

REMI / Scenario #2 - A 2.5% reduction in the housing and land price ratios in each of the ten New Hampshire counties;

RIMS / Scenario #3 - A \$127.5 million investment statewide in various types of new and existing residential structures.

Note that while the impact of regulatory policies and practices at the local level can impact prices by 20-30 percent in select markets, the REMI model is run on a county and statewide basis so the input percentages were much lower, 2.5 percent statewide, and for some sensitivity analysis, 5 percent in select counties.

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