
Appendix III: Overview of the Regional Long-Term Economic and Demographic Forecast, 2005-14
Tompkins County Housing Needs Assessment
Tompkins County Planning Department
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This appendix includes the detail of the long-term economic and demographic forecast that was used in this study. Clearly, the composition and pace of economic growth and the forecast of population and household growth by age category over the next decade will have a significant impact on housing demand. It also will have an important influence on the number and types of housing units that will be added to the county's existing year-round housing inventory over the next decade. More specifically, the level and composition of demand and rate of additions to supply in the county over the next decade will largely be a function of: (1) the future economic-job market conditions in the county, and (2) how the underlying demographic trends in the county and surrounding region play themselves out over the period.

1. Summary Description of the Forecasting Methodology.

The long-range economic and demographic forecast was developed by Economic & Policy Resources, Inc. with the assistance of Moody's-Economy.com—a nationally respected macroeconomic consulting and forecasting firm. Moody's-Economy.com provided: (1) the national macroeconomic forecast scenario (developed during the Fall of 2005 in the month following the devastating hurricanes that struck the Gulf Coast), and (2) a preliminary forecast for the county economy, population (by major age grouping), and households (by age of the householder)—all of which were consistent with the company's national economic and demographic forecast and a macroeconomic and demographic forecast for New York State as a whole. Economic & Policy Resources, Inc. then used that preliminary county level forecast to develop the other forecasted variables based on available third party data, including the U.S Department of Commerce (Bureau of the Census, and the Bureau of Economic Analysis), the U.S. Department of Labor (Bureau of Labor Statistics), and the New York Department of Labor.

The population and household forecast used in this study was developed econometrically-mathematically using an age cohort model that disaggregates the national, state, and county populations into four components: (1) births, (2) deaths, (3) population in-migration, and (4) population out-migration. The first two components are often referred to as the natural increase in the population, and the third and fourth components are often referred to collectively as "net migration." The forecast approach we used relies on the county's birth and death data for the first two components and the macroeconomic forecast for the county's economy (relative to the state and the national forecast) for the third and fourth components. The data used in the forecast were county-specific based on econometric-mathematical relationships identified by Moody's-Economy.com

between the county's economy, population, and household structure to the state and national economies. Once the forecast was developed, it was used in conjunction with the latest and most reliable data (e.g. county-specific historical household formation rates, county specific trends in average household size, etc) to develop the housing demand forecast described in Appendix IV.

The final forecasted economic and demographic variables presented in this the appendix were developed for the county by Economic & Policy Resources, Inc., and we accept full responsibility for the forecast. We believe the forecast represents a realistic forward looking view of the likely economic and demographic future of the county—absent of a major structural change in the economy or discontinuity in economic-development policies impacting its future development and underlying growth trends. This forecast therefore should be considered a “status quo” view of the future, which can and will likely be impacted by any structural changes in the regional economy and any future policy changes that may occur as the county moves forward over the next decade.

2. Regional Long-Term Economic Forecast, 2005-14

As mentioned previously, housing markets and developments in the economic-demographic environment governing housing supply and demand trends in the county are largely regional—if not national and global—in scope. Because of this external nature of housing-economic dynamics, a county-wide economic-demographic forecast was developed to fully incorporate the housing market supply and demand effects of the U.S. and global economies on the county's economy. The following section describes the methods employed in developing, and the results of, the regional long-term economic forecast for the Tompkins County region used in this housing study.

The first step in developing the regional long-term economic-demographic forecast for the county involved developing a credible baseline forecast. To complete this task, a long-term forecast for the region was obtained in September of 2005 from Moody's Economy.com—a nationally recognized economic forecasting and consulting firm. This forecast was reviewed, add-factored where necessary, and edited by Economic & Policy Resources, Inc., the primary investigators for this study. A summary of this regional forecast for the county is presented in the following tables and charts. This presentation begins with Table III-1, which presents summary data for the major economic variables forecasted and used in this study.

Table 3-1: "Status Quo" Economic and Demographic Forecast, 2005-2014

Tompkins County Variable	Annual Percent Change								
	1990	2000	2002	2005	2014	1990-2000	2000-2002	2002-2005	2005-2014
Selected National Variables:									
Gross Domestic Output (\$2000 in Billions)	\$7,112.5	\$9,816.9	\$10,048.8	\$11,552.9	\$14,483.1	3.3%	1.2%	4.8%	2.5%
Total Non-Farm Payroll Employment	109.5	131.8	130.3	133.6	150.3	1.9%	-0.6%	0.8%	1.3%
Fannie Mae: FHAMA 30-Year Fixed Mortgage Rate (%)	NA	8.4	6.5	5.7	7.0	--	--	--	--
10-Year Constant Maturity Securities (%)	8.5	6.0	4.6	4.2	5.5	--	--	--	--
Permits: Residential - Total, (# of Units)	1.1	1.6	1.7	2.0	1.6	3.6%	4.6%	4.2%	-2.1%
Single Family (Mill. of Units)	0.8	1.2	1.3	1.5	1.2	4.2%	5.4%	4.8%	-3.2%
Multi-Family (Mill. of Units)	0.3	0.4	0.4	0.4	0.5	2.0%	2.2%	2.0%	0.9%
Selected County Variables:									
Gross Regional Product(\$Millions)	2930.9	3526.0	3599.9	3977.9	4938.8	1.9%	1.0%	3.4%	2.4%
Total Population	94.2	96.6	98.3	100.9	106.9	0.2%	0.9%	0.9%	0.6%
Total Households	33.4	36.4	37.1	38.3	41.3	0.9%	0.9%	1.0%	0.9%
Permits: Residential - Total, (# of Units)	291.0	556.0	399.0	303.8	261.2	6.7%	-15.3%	-8.7%	-1.7%
Single Family (# of Units)	228.0	165.0	208.0	217.2	161.4	-3.2%	12.3%	1.5%	-3.2%
Multi-Family (# of Units)	63.0	391.0	191.0	86.6	99.7	20.0%	-30.1%	-23.2%	1.6%
County Employment:									
Total Non-Farm Payroll Employment (000s)	51.7	58.6	59.7	62.5	71.7	1.3%	0.9%	1.6%	1.5%
Private Sector Non-Farm Payroll Employment (000s)	44.3	50.2	51.0	53.9	62.6	1.3%	0.8%	1.9%	1.7%
Education & Health Services (000s)	22.8	28.7	29.4	31.7	37.4	2.3%	1.2%	2.6%	1.8%
Manufacturing (000s)	4.0	4.4	4.0	3.9	3.9	0.8%	-3.8%	-1.1%	0.0%
Leisure & Hospitality (000s)	3.7	3.5	3.7	3.9	4.8	-0.7%	3.3%	1.5%	2.4%
Professional & Business Services (000s)	2.4	2.7	2.7	2.9	4.1	1.3%	-0.6%	2.6%	4.0%
Retail Trade (000s)	4.8	4.6	4.8	5.5	5.7	-0.3%	1.9%	4.4%	0.4%
Construction (000s)	0.8	0.5	0.6	0.6	0.6	-5.1%	6.3%	1.3%	-0.3%
Information (000s)	0.7	0.8	0.7	0.6	0.9	1.0%	-3.9%	-4.9%	4.2%
Government (000s)	7.4	8.5	8.7	8.6	9.1	1.3%	1.2%	-0.3%	0.6%
County Income:									
Median Household Income (Current \$)	\$27,190	\$37,390	\$39,583	\$44,338	\$56,182	3.2%	2.9%	3.9%	2.7%
Personal Income Per Person (Current \$)	\$1,595.7	\$2,320.9	\$2,452.8	\$2,921.5	\$4,122.6	3.8%	2.8%	6.0%	3.9%
Estimated County Mortgage Activity:									
REFI Mortgage Originations (\$Millions)	6.1	18.6	82.5	29.1	11.9	11.8%	110.4%	-29.4%	-9.5%
Purchase Mortgage Originations (\$Millions)	25.7	81.4	75.1	110.0	154.4	12.2%	-3.9%	13.6%	3.8%
Notes:									
NA means "Not Available"									

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Looking more closely at the variables presented in Table III-1, Gross Regional Output for the county in inflation-adjusted 2000 dollars is expected to post a 2.4% annualized rate of increase over the 2005-2014 forecast period—a level roughly equal with the U.S. economy overall. This projected performance in output growth follows an estimated 3.4% average annual rate of gain over the 2002-2005 period, and an average annual rate of 1.9% output gain and an average annual rate of 1.0% growth for the region over the 1990-2000 and 2000-2002 time frames, respectively. Total non-farm payroll jobs, as measured by the job count survey of business establishments in the county, is forecasted to increase at an average annual rate of 1.5% over the 2005-14 period—slightly faster than the expected average for the nation as a whole over the period. This forecasted job growth performance follows an estimated 1.6% annual average rate of growth for the 2002-05 period, and an average annual rate of 1.3% and 0.9% increase over the entire 1990-2000 and 2000-2002 periods, respectively.

Private sector jobs are forecasted to increase at an average annual rate of 1.7% per year over the 2005-14 period, a rate slightly faster than job growth overall. That rate compares favorably to the 1.3% average annual rate of change over the 1990-2000 period and the 0.8% annual average rate of increase over the 2000-2002 period that included the last economic recession in the nation and the region. That annual rate of change is roughly on par with the 1.9% per year average annual rate of increase over the 2002-2005 initial labor market recovery-expansion period of the current business cycle. The Government Sector (corresponding to the Public Administration category under North American Industry Classification System—NAICS), in contrast, is expected to experience a significantly slower annual rate of job growth of 0.6% per year in the county over the 2005-2014 time frame. That historically slow forecasted rate of annual change is a direct reflection of the expected long-term strain on public resources on all levels of government in the post-“stock market bubble” and current war-on-terrorism public finance environment. That is the main reason underlying the relatively more upbeat job growth outlook for the Private Sector relative to the job growth outlook for payroll jobs in total.

Within the major job sector categories in the 2005-14 forecast, the table also shows there are significant differences in the forecasted job growth performances between the major county job group categories. The poorest relative job growth performance in the county among the major employment categories (e.g. including more than 500 payroll jobs in 2005) is projected for the Construction sector (at -0.3% job change per year). This is projected following what will likely turn out to be a “golden age” for housing construction both within the county and elsewhere. The second most restrained job growth performance is found in the manufacturing sector at +0.0% per year over the 2005-2014 forecast period. Even though this important higher-than-average paying category of jobs is expected to remain flat—at best—over the period, this flat forecast represents a significant improvement over recent history (at -3.8% per year over the 2000-

2002 period and -1.1% per year over the 2002-2005 time frame). This forecast does trail well behind the +0.8% per year job growth record by this sector posted during the decade of the 1990s. At an annual average of 3,900 jobs in 2014, the manufacturing sector in the county would rest a total of 500 jobs or 11.4% below the 4,400 job level it stood in calendar year 2000.

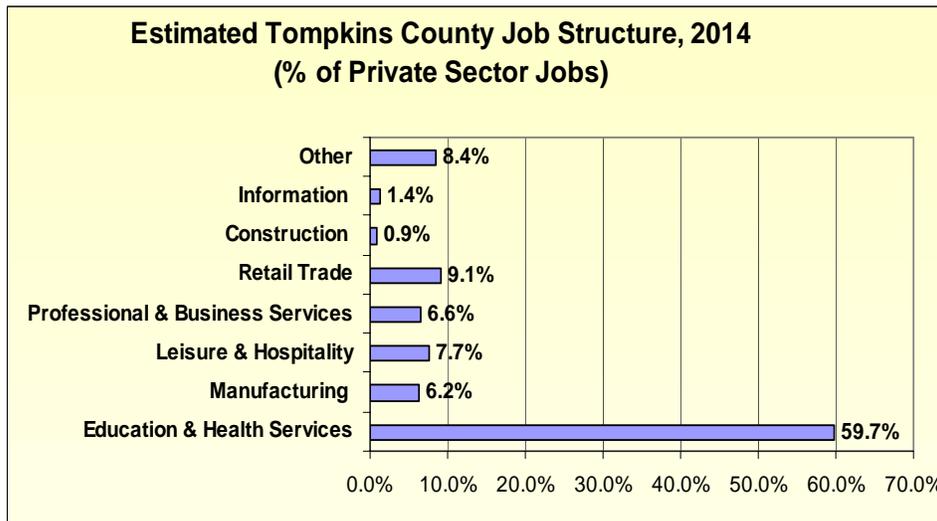
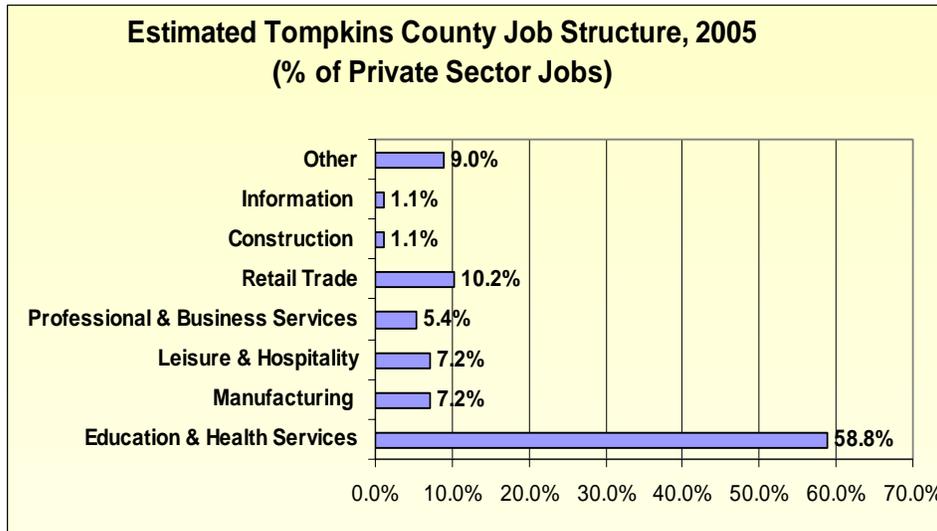
On the other side of the job change ledger, the stalwart Education and Health Services sector is expected to continue to account for the majority of the county's job growth over the 2005-2014 forecast period. This category is expected to add roughly 5,700 total jobs over the period, corresponding to a 1.8% average annual rate of job growth. While that represents a bit of a slowdown relative to this sector's past job growth history, this sector is still expected to gain in the total share the sector represents among all major job categories in the county's economy.

One of the strongest job growth performances in the region over the forecast period is expected to be in the Professional & Business Services category at 1,200 total jobs or 4.0% per year. The forecasted 2005-2014 performance is significantly faster than all previous historical categories measured (at +2.6% per year over the 2002-2005 period, at -0.6% per year during the 2000-2002 period, and +1.3% per year during the 1990s). The Leisure and Hospitality category also is expected to post a significant job gain over the 2005-2014 forecast period at +2.4% per year versus an annual rate of +1.5% increase over the 2002-2005 period and an annual rate of +3.3% increase 2000-2002). This forecasted performance is expected to be significantly stronger than the -0.7% per year rate of job decline in this category experienced during the 1990s. A small (at only +300 jobs or 4.2% per year), but still significant addition to the county's job base is expected from the Information Sector, reflecting the growth of the information sector overall in the age of internet and electronic publishing-information exchange.

Turning to the other economic variables of significance to housing markets, Median Household Income in the county is forecasted to increase at an average annual rate of 2.7% over the 2005-14 period—a level that is slightly below recent historical household income growth experience. The table also shows that projected regional population and household growth are expected to experience a slight slowing over the 2005-14 period, with both population (at +0.6% per year over the 2005-2014 period) and household growth (at +0.9% per year over the 2005-2014 time frame) experiencing average annual growth rates during the 2005-14 period that are slightly under the rates of growth experienced in each during the early 2000s. Relative to the decade of the 1990s, total Households are expected to grow at an identical +0.9% per year rate, while total population is expected to post a somewhat faster +0.6% per year rate versus the 0.2% per year rate of total population growth registered during the 1990s.

The table also includes some national economic variables of significance to the county's housing situation. These include the Fannie Mae FHA/VA 30-Year Fixed Rate Mortgage Rate and the 10-Year Constant Maturity Securities. These two variables are forecasted because of their importance to estimating the future housing affordability climate in the county through calendar year 2014. Each interest rate variable highlights that fact that housing markets will likely need to contend with a generally rising, but only gradual so, interest rate environment across the forecast period. The other U.S. macro variables are provided as a benchmark for assessing the county level variable as mentioned above.

Putting this long-term forecast in perspective, the following table (Table III-2 and 2 charts) presents data and illustrate the only relatively modest structural changes that are expected in the overall job mix structure of the county during the 2005-2014 period. According to the table, the Professional & Business Services sector is expected to gain 1.2 percentage points in share—from 5.4% in



2005 to 6.6% in calendar year 2014. The Education & Health Services sector is also expected to gain significantly — or by 0.9 percentage

points in share over the next decade. In terms of total private sector non-farm jobs, this sector is expected to increase in prominence from an estimated

58.8% of the total in 2005 to 59.7% of the county's total job base in 2014. In

addition, this “status quo” forecast indicates that the Leisure and Hospitality sector is expected to add slightly to its 2005 share of total private sector payroll jobs, at 7.2% of the total in 2005, to a level of 7.7% of the county total in calendar year 2014. The Information sector is also expected to gain in regional share over the 2005-2014 period, increasing from the level of 1.1% of total private sector jobs in 2005 to 1.4% of the total in 2014.

Table III-2: Non-Farm Payroll Job Forecast In Perspective

Tompkins County Variable-NAICS Basis	Payroll Jobs		% of Total Jobs		% Private Sector Jobs	
	2005	2014	2005	2014	2005	2014
Total Non-Farm Payroll Employment (000s)	62.5	71.7	100.0%	100.0%	---	---
Private Sector Non-Farm Payroll Employment (000s)	53.9	62.6	86.2%	87.3%	100.0%	100.0%
Education & Health Services (000s)	31.7	37.4	50.7%	52.2%	58.8%	59.7%
Manufacturing (000s)	3.9	3.9	6.2%	5.4%	7.2%	6.2%
Leisure & Hospitality (000s)	3.9	4.8	6.2%	6.7%	7.2%	7.7%
Professional & Business Services (000s)	2.9	4.1	4.6%	5.8%	5.4%	6.6%
Retail Trade (000s)	5.5	5.7	8.8%	7.9%	10.2%	9.1%
Construction (000s)	0.6	0.6	0.9%	0.8%	1.1%	0.9%
Information (000s)	0.6	0.9	1.0%	1.2%	1.1%	1.4%
Government (000s)	8.6	9.1	13.8%	12.7%	---	---

Prepared by Economic & Policy Resources, Inc.

On the other side, the Manufacturing Sector is expected to fall in employment prominence over the 2005-2014 period, dropping a forecasted 1.0 percentage points over the period. If this forecast comes to pass, jobs in this important goods-producing category for the region is expected to decline from 7.2% of total private sector payroll jobs in 2005 to 6.2% of the forecasted private sector payroll job total in calendar year 2014. The Retail Trade category is similarly expected to decline modestly in share over the ten-year forecast period, declining from 10.2% of the private sector payroll job total in calendar 2005 to 9.1% of the private sector job total in the county in calendar year 2014. Looking at the total public-private sector job base landscape, the Government sector is expected to decline in the share of total non-farm payroll jobs over the period through 2014, falling from 13.8% of the total non-farm payroll jobs in 2005 to 12.7% of the forecasted non-farm payroll job level in the county in 2014.

3. The “Status Quo” Population Forecast, 2005-14

Closely tied to the long-term economic forecast for the county discussed above, projected regional population growth and the changing characteristics of both the existing resident population and new population growth will also be important determinants of housing demand. The following sections highlight the important population growth and demographic factors that will likely be underpinning housing demand in the county through 2014.

By way of background, it is important to note that during the period since World War II and through the early 1990s, the net growth in the overall housing stock

has tracked fairly closely with the number of new households that were formed.¹ That means that despite wide swings in interest rates, increasing household incomes, and the like, the impact of demographics has been, and likely remains, the major long-term determinant of housing demand. The forming of new households and the composition of existing households rather than just simple population growth/changes are the key demographic determinants of housing demand. It should also be noted that new household formations are affected by a range of economic and social factors, including marriage rates, divorce rates, wage rates for job opportunities in a regional economy, and life expectancy in the region. Current and future changes such demographic issues of the population of the regional economy will therefore clearly have at least implications for the county's housing demand over the next decade.

Looking back at the past two decades, it is well known that household demographic changes nationally and in most regions throughout the country have mainly reflected the maturing of the “baby boom” population. Baby boomers are generally defined as those persons who were born between 1946 and 1964—a period of time when the nation experienced strong population growth rates following the end of World War II. The oldest “baby boomers” are today just reaching the age of 60 years, and the youngest are now over the age of 40. Therefore, the majority of this population group has already formed independent households—a factor that is very important to housing markets. The post-“baby boom” population—which is significantly smaller than the “baby boom” population—is currently in the primary age categories for forming new households. An overall slowdown in the rate of new household formations because of the aging of the “baby boomer” segment of the population is an overall demographic trend that is expected to continue to dominate housing markets over the next decade. This well known demographic dynamic will therefore affect the level and nature of housing demand over the next decade for the county as well.

Off-setting declining housing demand caused by the aging of “baby boom” population is the trend toward the declining household size—the trend toward fewer persons per household. The most obvious implication for housing demand from this trend is that more housing units will be required to house each 1,000 person increment of population and growth in population in the county over the next decade than was the case over the last twenty to thirty years.

The decline in average household size reflects long-standing social changes that have resulted in smaller families and the increasing share of total households by non-family households. For years, the social literature has been filled with studies about the decline of the traditional married-couple family, the increase in

¹ Demographic Change and the Economy of the Nineties, Report for the Sub-Committee on Technology and National Security, Joint Economic Committee of the Congress of the United States (December 1991).

single-parent families and the growth of single-person households.² The implication of smaller household size is increasingly responsible for greater housing unit need as the population grows with these new household characteristics. The result is potentially greater demand for smaller units characteristic of households headed by persons in the upper age categories.

With the above discussion as background, Table III-3 sets forth the key population and demographic variables for the Tompkins County region through 2014. The table shows that the county is expected to add a total of 5,600 net new residents over the forecast period—corresponding to 0.6% of average annual population growth rate. That rate of increase is somewhat lower than the 0.9% annual average rate of growth during the 2000-2005 period, but significantly higher than the 0.4% and 0.2% average annual rate of population increase experienced in the region over the 1980-2005 and 1990-2005 time frames, respectively.

Table III-3: "Status Quo" Population/Household Forecast, 2005-2014

Tompkins County Variable	1990	2000	2005	2014	Annual Percent Change			
					1980-05	1990-05	2000-05	2005-14
Population:								
Total Population (000s)	94.2	96.6	100.9	106.5	0.4%	0.2%	0.9%	0.6%
Population: Ages 0-4 (000s)	5.3	4.3	4.3	4.3	-0.5%	-1.4%	0.0%	0.1%
Population: Ages 5-19 (000s)	21.9	22.8	21.3	20.1	-0.2%	0.3%	-1.3%	-0.7%
Population: Ages 20-24 (000s)	16.2	16.4	15.2	15.6	-0.3%	0.1%	-1.5%	0.3%
Population: Ages 25-44 (000s)	29.0	25.1	28.1	26.4	0.6%	-0.9%	2.2%	-0.7%
Population: Ages 45-64 (000s)	13.4	18.7	22.0	27.2	2.3%	2.2%	3.3%	2.4%
Population: Ages 65 and over (000s)	8.5	9.3	10.0	12.9	1.3%	0.6%	1.6%	2.8%
Households:								
Total Households (000s)	33.4	36.5	38.6	41.4	1.0%	0.9%	1.0%	0.8%
Persons Per Household	2.82	2.65	2.64	2.59	-0.31	-0.18	-0.01	-0.05
Other:								
"Net" Migration	---	-0.40	0.53	0.14	---	---	---	---

Prepared by Economic & Policy Resources, Inc.

According to these regional projections, age group making the largest contribution to the county's overall population growth is the 45-64 years age category—up 5,200 total residents or 2.4% per year over the 2005-14 period. This age group is expected to contribute over 95% of the 5,600 total net increase in residents expected in the county over the 2005-2014 period. The next largest contributing category is the over 65 Years and Up age group—with 2,900 net additions to the population base, up 2.8 percent per year over the 2005-14 period. The Over 65 Years and Up category represents roughly 60% of the net increase in the county's population over the 2005-2014 period.

² The number of single parent families rose sharply during the 1970s, but leveled off at about 15 percent of all families during the late 1980s and early 1990s.

According to the forecast, both the under 5-19 years age category and the age 25 years-44 years demographic categories are projected to decline in size over the 2005-2014 forecast period, at -0.7% per year and -0.7% per year, respectively, over the 2005-14 time horizon. The number of households is likewise expected to post a correspondingly historically slow 0.8% annualized rate of growth over the 2005-14 period. That forecasted annual average rate of household growth for the county is 80% of the 1.0% per year rate of increase experienced in total households during the 25 year period between calendar years 1980-2005 and most recently for the 2000-2005 time frame.

However, the formation of new households and the composition of existing households—rather than population growth alone—is the major determinant of housing demand. In this vein, Table III-4 (below) sets forth household projections to 2014 by age of the householder for the various age categories. The table shows that the county is projected to see growth of just over 2,850 total new households over the 2005-2014 time horizon—representing an increase of 0.8% per year. That household growth rate is: (1) slightly lower than the 1.1% average annual rate of increase over the 1990-2005 period, and (2) is marginally slower than the 0.9% per year registered during the decade of the 1990s.

Table III-4: Baseline Household Projections for Tompkins County (Householders Greater than 15 Years Old)

	Estimated Projected				Abs Chge			CAA		
	1990	2000	2005	2014	1990-00	2000-05	2005-14	1990-00	2000-05	2005-14
Total >15 yrs.	33,341	36,464	38,266	41,316	3,123	1,802	3,050	0.9%	1.0%	0.9%
15- 24	4,793	5,292	5,556	6,002	499	264	446	1.0%	1.0%	0.9%
25-44	15,291	14,211	14,313	14,112	(1,080)	102	(201)	-0.7%	0.1%	-0.2%
45-64	7,808	10,877	12,060	13,669	3,069	1,183	1,609	3.4%	2.1%	1.4%
65 +	5,449	6,084	6,601	7,550	635	517	948	1.1%	1.6%	1.5%
Total Households	33,390	36,541	38,566	41,416	3,151	2,025	2,850	0.9%	1.1%	0.8%

Prepared By: Economic & Policy Resources, Inc.

Not surprisingly, these projections follow the same age profile as the overall population projections, with the fastest growing age category being the Over 65 Years category (at $+1.5\%$ per year). The 55-64 years category (at 1.4% per year) is expected to be the second fastest growing age category. Within the age categories in the table, the effects of the aging of the county's population is most evident within the top two age categories.

In contrast, there is a forecasted decline in the number and percentage of households headed by those aged 25-44 years old—at -0.2% per year over the 2005-14 period corresponding to a decline of approximately 200 households. A small increase is expected in the 15-24 Years which will also likely spillover into the front end of the aged 25-44 years age category over the period.

The above forecast reflects a continuation of the trend that began in the early to mid-1980s when the majority of the “baby-boom” population entered their late 20s. During the 1990s, this trend continued, with households headed by young adults aged 25 to 34 Years falling over the decade. By the year 2014, the number of total households headed by young adults aged 25 to 34 years is expected to experience a small turnaround over the 2005-14 period, as the “baby boom echo” generations enter the household formation years. The housing demand implication of this trend is that there is likely to be a slightly slower overall rate of household formation relative to the total population across the next decade relative to the 1990-2005 period.