AFFORDABLE HOUSING STRATEGY

TOWN OF QUEENSBURY
STATE OF NEW YORK

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Submitted to:

Town of Queensbury

Prepared by:

EPR
ECONOMIC & POLICY RESOURCES

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Sustainable Economic Development

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INTRODUCTION

Why this Study Was Undertaken

This study is intended to identify and document the evolving regional economy in the greater Glens Falls, New York region and the developing needs for the full range of affordable workforce housing options for both the Town of Queensbury (hereafter the "Town")—as the sponsor of this study and a key municipality in the regional housing market—and for the region. The study describes the current economic, demographic, and housing situation for the Town and region, includes a forward-looking regional and Town economic and demographic forecast, and forward-looking forecasts of the future workforce housing needs of the Town. The study discusses key factors driving housing markets in the Town and region, and offers a set of "best practices" options for pre-emptively heading off what looks to be increasing housing cost pressures, both with respect to current and prospective future Town residents and for current and prospective employers of the Town.

Over the 1990's and to the present, the regional economy and the economic base of the Town has evolved from a resource-based/manufacturing-based, goods-producing economy to one that is integrating digital technology into a high-value added goods-based/service-based economy with a vibrant visitor sector. In addition to its changing economic composition, the regional and Town populations have also been aging—much like the population of the State and the nation as a whole—and the entire region has been facing challenges from other demographic shifts in the aftermath of the recent "Great Recession" and current recovery/expansion in the U.S. economy. These recent shifts in the demographic and economic base of the region have changed the economy, the growth dynamics, and housing demand and supply in the region and Town in significant ways.

The 2007 Town of Queensbury Comprehensive Plan recognizes that "creating housing choice is an important part of creating a vibrant community." It also recognizes that different demographic groups require different types of housing and needs have been and will continue to keep evolving as the population ages and workforce demographics continue to shift. This study seeks to address many developing concerns within the community. For example, what are the options for addressing the evolving growth of the workforce and its housing needs of the Town? What tools are available to assist the Town in meeting the expected new housing demand? What role should the Town play in meeting the housing needs of not just the Town but also the regional workforce?

With this study, the Town seeks to bring new, important information that could be used to inform these on-going concerns within the community and also within the context of the region. As new housing, and neighborhoods develop within the Town's landscape, what should the Town do in order to help answer the above concerns and the many other important questions relating to the workforce housing issues in the Town, but also within the greater Glens Falls region given the

Town's past and expected leading economic development, economic performance, and housing market role in the broader region.

Study Approach

The study's approach compiles and analyzes a wide range of objective economic, demographic, and housing data—including data from both primary and secondary data sources relating to the regional and Town economy, the regional and Town workforce, regional and Town housing demand, regional and Town real estate markets, and the characteristics of the regional and Town population that may impact the demand for housing. The study draws on information from the latest decennial Censuses, national economic databases, and data from the following key sources: (1) the U.S. Bureau of Labor Statistics for the Glens Fall MSA, (2) the U.S. Bureau of Economic Analysis of the U.S. Department of Commerce, (3) the U.S. Bureau of the Census, (4) the New York State Office of Real Property Services, (5) New York Empire State Development; (6) the Town Assessor's Office; (7) data from the Town Planning Department on local building permits; (8) local real estate sales data from the Southern Adirondack Realtors Association; (9) interviews with key stakeholders, regional and community development officials; and (10) other data and information sources—including leading nonprofits throughout the region involved in regional and Town housing services and policy. These data were then assembled in various ways to help integrate the economic development needs of the region and Town with housing demand and supply. Also included in this study are baseline 11-year forecasts of regional economy, the region's and Town's demographics, the Town's jobs/employment base, the Town's housing demand and supply, and the affordability of its current and forecasted housing stock by tenure category and household income category, among other important variables of significance to developing affordable workforce housing policy (including a range of workforce housing options) for the calendar year 2017-2027 time period.[1]

It is hoped that the results of this study will provide interested stakeholders with a historic economic and demographic context, a recognition of the similarities and differences that exist between the Town, the Town's peer communities in the region, a forecast of the regional housing demand and supply specific to the Town and region, Town-specific estimates regarding trends in affordable housing, a "gap analysis" (e.g. that measures the difference between current and prospective supply and demand in the study region), and an inventory of plausible alternatives for addressing the workforce growth-housing needs of the Town and region using "best practices" approaches. This study focusses on information and analysis on a range of options that can be pursued and employed to guide development in each of the Town's three residential areas—including the higher-density, urban-like character neighborhoods around the Town's border with Glens Falls, the more suburban-type housing character that is typical of developments and neighborhoods near the center of the Town, and the largely rural areas that characterize the western and northern regions of the Town—which also includes many of the Town's second homes that are vital to supporting the Town's vibrant visitor sector.

[1] With calendar year 2016 having been agreed-to as the base year for this study.

The Town and members of the Town Community Development Department staff, Housing Assessment Study Steering Committee, and the consulting group also welcome all questions, comments, and additional suggestions pertaining to this study and any other issues of concern relating to access to a wide range of housing options in the Town and region. Copies of this study are available from the Queensbury Community Development Department Office, 742 Bay Road, Queensbury, New York 12804. It can also be downloaded in electronic format at the Queensbury Community Development Department's website (see https://www.queensbury.net/departments/planning/). The study can also be downloaded at the website of Economic & Policy Resources, Inc. (see https://www.epreconomics.com) and from the website of Crane Associates, Inc. (see https://www.craneassociates.us).

Funding Support for This Study

This project was funded by the Town of Queensbury and a U.S. Department of the Housing and Urban Development (HUD) Community Development Block Grant (CDBG) through the New York State Housing Trust Fund Corporation's Office of Community Renewal. Without that support, this project would not have been possible. Economic & Policy Resources, Inc. and Crane Associates, Inc. (hereafter the "EPR/CA Team"), as the principal investigators, gratefully acknowledge that funding support which enabled this study to be undertaken and completed.

Acknowledgements

Before delving into the details of this effort, we need to acknowledge the assistance of many individuals involved with this study. We want to acknowledge the members of the Housing Assessment Study Steering Committee, and also the many other individuals throughout the region who made significant contributions to this work.

Regarding the former, our thanks go to the steering Committee members who kept us grounded during the study process as we slugged through the wealth of data and information we consulted during the completion of the study. Members included: **Ms. Jennifer Switzer**, Councilwoman—Ward 4 of the Queensbury Town Board, **Ms. Catherine Atherden**, Councilwoman—Ward 2 of the Queensbury Town Board, and **Ms. Jessica Fraser**, Director of Care Management, Hudson Headwaters Health Network. Special thanks also goes to **Mr. Stuart G. Baker**, Senior Planner at the Town's Community Development Department. He was both a member of the study Steering Committee and a thoughtful project manager, who also made substantial contributions to the substance of this study which were crucial to its completion.

Regarding the latter, many individuals in the Town and broader Glens Falls MSA region also contributed to this study by participating in a series of focus group meetings and interviews. Special thanks goes to: the **Southern Adirondack Board of Realtors**, who provided insight from eight of their members about what they saw going on within the regional housing market and to offer constructive suggestions for the recommendations included in this study; **Mr. Chris Hunsinger**, Employment & Training Director for Warren County, a Member of the Planning Board, and a Member of the Board of The Open Door, who provided this study with important insight into the workforce needs, the current workforce housing situation of the region, and the status and needs of the region's poor and homeless; **Mr. Marc Monahan**, Vice President of NBT Bank, who providing information about the current housing market situation in the region with an emphasis on credit market conditions and financing trends; **Ms. Kristine Duffy**, President of SUNY Adirondack; four members of the SUNY Adirondack staff; and a member of the SUNY Adirondack Board, who provided insights into student housing needs in the study area and some suggestions for helping to address those needs (in cooperation with the Town); **Mr. Richard Schermerhorn**, Owner of Schermerhorn Properties, who helped us to understand the perspective of a private developer providing housing options in the region; **Ms. Sharron Reynolds**, Director of Homefront Development Corporation, and a private, non-profit organization which works to encourage many types of affordable housing in the Washington County and Warren County region for low-income residents; **Ms. Kim Cook**, President and CEO of The Open Door, for her insight regarding the important issues affecting the poor and homeless in the region (including housing) and the various programs available to impacted residents; **Ms. Margaret Devries**, Executive Director of Wait House, a nonprofit organization that assists youth in transition in the greater Warren County and Washington County region, for her perspective on the housing needs of youth and adolescents who are in transition; **Mr. Davis Yohe**, Executive Director of Liberty Affordable Housing, Inc., a non-profit organization whose mission is to expand affordable housing options through acquisition, developing, and rehabilitating of housing to preserve its

affordability, for his perspective on the increased need for affordable housing in the region and the organization's desire to build more units in Queensbury; **Robert J. Landry**, Executive Director of the City of Glens Falls Housing Authority, for his information regarding the Authority's programs and housing assets, what his organization saw as significant demand in the Town for affordable housing options, along with information regarding Queensbury residents' participation in the Authority's senior (e.g. the Authority's three senior housing projects), low income (e.g. Section 8), and other programs (such as the First Time Homebuyers Program); and **Mr. Adam Feldman**, Executive Director of Habitat for Humanity of Northern Saratoga, Warren, and Washington Counties, who described his organization's desire to build in the Town to meet growing needs and to stay in touch with study stakeholders in order to possibly forge strategic partnerships to expand housing.

Lastly, we are certainly indebted to the Town staff, the Town Supervisor, the Town Council, and many staff members of organizations through the Glens Falls region for their assistance in assembling data and providing important qualitative information to this study. This input was important to be able to tell the story within the data, historical statistical trends, and the study's long-term forecast. In short, our sincere thanks go out to all who helped the EPR/CA Team to complete this important study.

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1. THE CONTEXT FOR THIS STUDY

The U.S., the State of New York, and the whole rural upstate region are currently dealing with a myriad of changes in the demographic and economic composition of, and in the performance of, the economy which also effect the Town and Glens Falls metropolitan statistical area (hereafter the "MSA") region. The economic and demographic disruptions associated with the globalization of the economy (including currently pending major international trade issues), the rapid and more ubiquitous use of new technologies (particularly information technologies for personal devices and for various social media formats), and rapidly-evolving workforce development needs have been presenting major challenges to the way many municipalities strive to achieve safe, vibrant, and livable communities.[2] An important part of safe and livable communities is that every individual or family unit should have choices in terms of their access to decent and affordable housing—regardless of their socio-economic status, gender, and ethnic background.

Over the past four decades, there have been many national, state, and regional/local studies and plans that have undertaken the task of investigating the means to, and recommending ways to, provide access to decent quality, workforce housing that is within the financial reach and capabilities of individuals and households who work in the area. The Town, back in December of 2003, also completed a more traditional affordable housing needs assessment which resulted in a living framework for a Town affordable housing strategy.[3]

This effort is intended to build upon that substantial body of previous work in the Town, in the region, and with regard to recent advances in "best practices" for advancing affordable workforce housing options for the community. This study hopes to achieve that by focusing on the many cross-cutting issues as they apply to that objective, relative to the situation in the Town and regionally, and using a reasonable forecast of the economy, demographics, and housing markets for the future of both the Town and the Glens Falls region as a whole.

The Importance of Having a Variety of Housing Choices and Quality of Life.

From the outset of this study, the EPR/CA Team notes that the study working committee approached this effort from the perspective of promoting the Town as *"...a good place to live..."*[4] The Town's Comprehensive Plan clearly articulated a clear vision and a broad set of goals for the Town to move that vision towards that consensus objective back in 2007.[5] The adopted vision noted that the members of the community wanted a Town that:

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[2] With balanced development and quality services that are funded by affordable tax rates.

[3] See Town of Queensbury Affordable Housing Strategy, December 2003.

[4] See the Queensbury Comprehensive Plan; Queensbury's Comprehensive Vision, page 8 (2007).

[5] The EPR/CA team notes that the Town's Comprehensive Plan is now more than 11 years old. It may be beneficial to for the Town to consider undertaking an effort to update the Town's Comprehensive Plan for the changes that have occurred over that period and those that are likely to occur in the near-term future.

> *"...offers an excellent quality of life for families, that features public safety, clean water, pure air, **a variety of housing options [Emphasis added]**, excellent schools, a growing library, state-of-the-art health care, facilities, community-minded businesses of all sizes from all sectors, parks, bike paths and an impressive array of museums, arts organizations and historic preservation initiatives..."*

The Comprehensive Plan further noted that the community also strives:

> *"...to protect and encourage neighborhoods that promote relationships, healthy lifestyles and community involvement. We endeavor to balance the needs of our growing community with local and regional economic development initiatives, which can support our town-wide goals..."*

From that vision for the Town's vision came the development of a number of goals that were designed to achieve it. The goals in fact reflected a number of integrated objectives. Many goals were and still are designed to position the Town to take advantage of the community's high quality of life and experience the benefits of economic development without losing the community's special features that make the Town "distinctive" and "attractive" to live, work, and recreate to support sustainable, quality economic development. The goals also speak to having safe and livable neighborhoods (including *"...walkability, affordability, and access to local services..."*) and preserving important natural areas and view sheds. The goals state clearly the community's collective view of the importance of having a stable, predictable, and timely development process and business development environment. All are consistent with the Town's long-recognized leading regional role as a center for commerce, housing, and "high quality" recreational assets for the region.

Although the concept of what constitutes "livable, high-quality communities" is at times a moving target, the concept of livable communities typically involves a number of key dimensions, including: (1) increased vitality, and creating or reinforcing a sense of place and/or community, (2) support of architecture that is appropriate to the history and culture of the community or region, (3) pedestrian-friendliness and accessibility, (4) people living and recreating near to where they work, (5) preservation and/or enhancement of environmental quality—including open spaces and high-quality recreational amenities, and (6) access to a full variety of housing options for residents that combine housing, shopping, access to affordable private-public services, and reasonable proximity to employment centers.

From a housing perspective, offering a range or variety of housing options—and particularly those which support affordable workforce housing—in a community is a key part of promoting a high quality of life as the Town has defined it. There are several aspects to quality of life, and many are intuitive. Perhaps the most important of those involve efforts to increase sustainable economic activity and improve the standard of living in a community. For example, having a variety of housing options has shown over time that it can act as a stabilizing influence for the Town as a whole by reducing the housing turnover rate. A reduced housing turnover rate has,

over time, been shown through past experience to provide: (1) a more stable foundation of regular customers and patrons for a community's or a region's businesses in commercial centers, which develops a greater sense of being connected and even more committed to the quality of life and services that are offered in the community; and (2) a more stable and predictable base of population (for municipal services) and students (for a community's or regional schools). The first also has been shown to assist in building a more predictable business environment in a community (which can result in better local employment options-opportunities), and that—in turn—helps to provide a demand climate of stability-predictability for the provision of essential municipal and educational services.[6]

In addition, having a variety of housing options—and particularly workforce housing—configured in a proper density and in a community-friendly manner also has been shown in other areas over time to: (1) reduce vehicle trips, (2) encourage biking and walking, and (3) provide "critical population mass" needed to support services such as transit—where population density reaches the level needed to make such services more commercially viable. Increasing density in certain circumstances has also been found to positively reduce the rate of vehicles per miles traveled (VMT) in a specific area, thereby contributing to improved environmental quality and a reduced level of traffic congestion. Having access to a variety of housing options, including affordable workforce housing, also has been shown to foster diversity in an area or region, and the inherent strength that a broad range of opinion can add to community dialogue on important issues and for shaping the Town's future. Finally, having access to a variety of housing options, including affordable workforce housing, has been shown to help life-long residents to continue to live out their retirement years—and young families to begin their lives—in the same community that their parents did.[7]

Applicability to the Town.

Such benefits can likewise be expected to be realized in the Town, and even neighborhoods within the community as well, under such a "broad range of housing options" umbrella.[8] If families in Queensbury working at local and regional employers have access to quality housing across a broad range of housing options, they can likewise be expected to take more active roles in the many issues of importance to the municipality (e.g. safety, education, pursuing commercial endeavors, etc.). In addition, the greater level of community stability also would likely be a positive factor in providing greater predictability in the demand for services from the Town and its schools, and at the same time provide a more reliable commercial base of households to support Town and regional retail (including eating and drinking places) and other businesses.

As a result, this study approaches the issue of affordable workforce housing recognizing the Town's regional role in economic development and housing markets while at the same time

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[6] *Strengthening our Workforce and our Communities through Housing Solutions*. 2005. JCHS Harvard University and U.S. Chamber of Commerce.

[7] *Myths and Facts about Affordable & High Density Housing*. 2002. California Planning Roundtable and California Department of Housing & Community Development

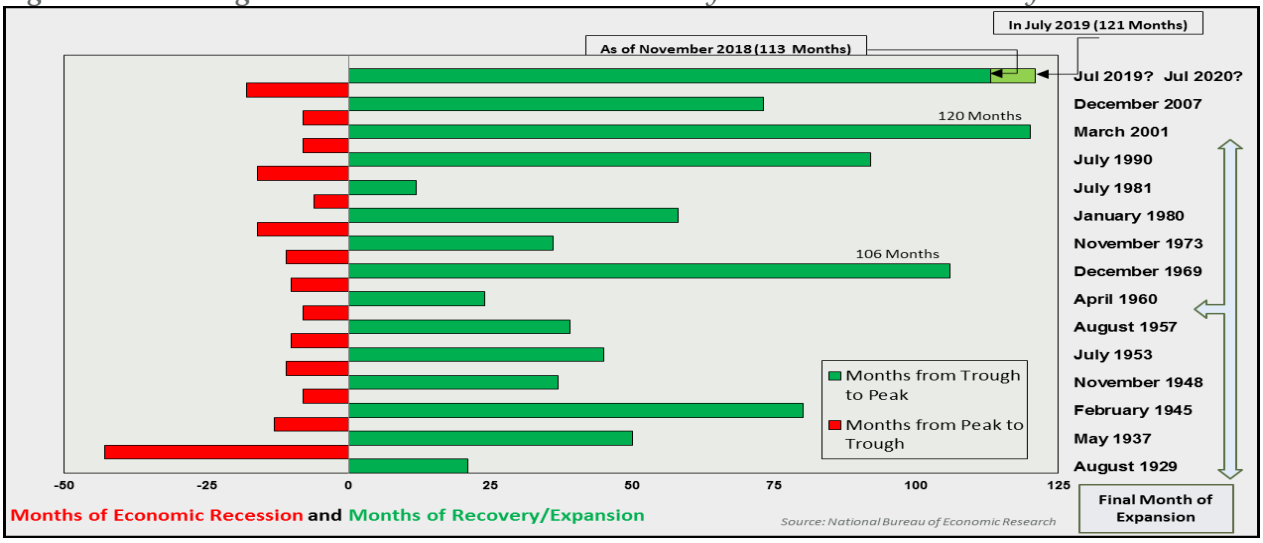
[8] As alluded to in the Town's Comprehensive Plan.

meeting the vision and goals embodied within its 2007 comprehensive plan. The Housing Assessment Study Steering Committee approached this from the vantage point of promoting "healthy communities," or what can be done to encourage each of the five dimensions of a healthy community. The five dimensions include: (1) good jobs, (2) good schools, (3) a safe environment, (4) a full range of housing options—including workforce housing, and (5) a good range of retail-amusement options with a pedestrian-friendly orientation and access to affordable transit. Looking at dimensions 1-3 and 5 of a prototypical healthy community, housing obviously plays a pivotal and crosscutting role in a community that is seeking to promote "livability." Put simply, access to a broad range of quality housing options—including affordable workforce housing—across the price range spectrum is a pro-family, pro-livable community, and it's pro-flexibility for supporting a cohesive mosaic of policies that will promote a high-performing Town and regional economy. In fact, experience has shown that a relative lack of quality housing options across the price range spectrum for the regional work force can result in greater instability in a community. Less stable families means a higher housing turnover, and all of the negative aspects on a community that such a dynamic engenders.

Overview of the U.S. Economic/Housing Market Context.

As of the date of the discussion draft of this study (or November 21, 2018), the U.S economy overall was continuing to expand. The combination of economic stimulus from the recently passed Tax Cuts and Jobs Act of 2017—which is providing stimulus of approximately $1.0 trillion over the next 10 years—and a U.S. economy that has already neared its maximum potential will create accelerating near-term growth. The forecast also includes the possibility of higher rates of inflation as activity in the U.S. economy nears its full capacity and the likelihood of a more pronounced boom/bust business character to the current U.S. economic upcycle takes over. Even so, at 112 months and counting through November 2018 (see Figure 1.1 below), the current expansion is the second longest in U.S. history. If sustained through July of 2019, as expected, the current U.S. upturn will then become the longest ever in recorded U.S. economic history.

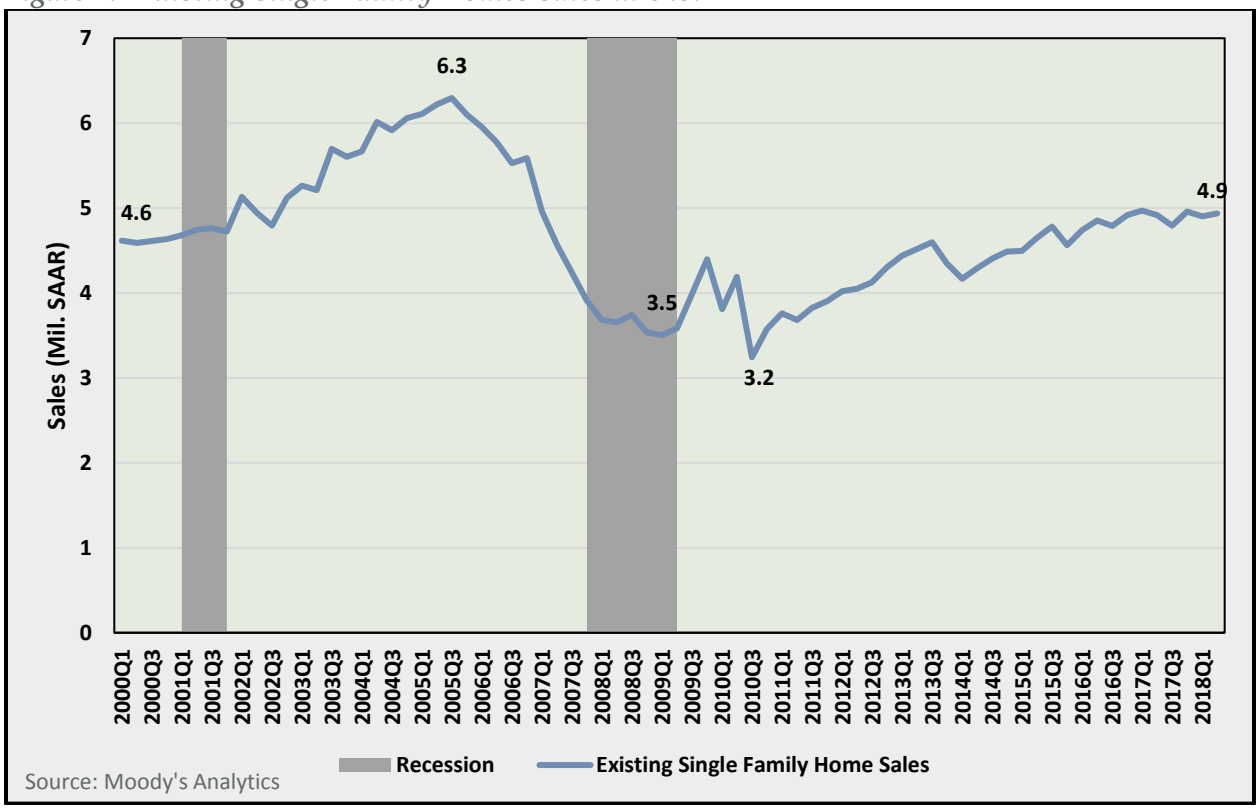
Figure 1.1 Tracking Current and Historical Business Cycles in the U.S. Economy



But at the same time the U.S. economy has been moving past milestones for longevity, the U.S. economy as of the Fall of 2018 looked to also be finally starting to exhibit some characteristics of an aging economic expansion. For example, activity indicators in the U.S. housing sector showed an industry that was slowing, including a deceleration in the rate of housing price increases over several months in many markets around the country. In addition, recent housing unit sales indicators showed that the volume of existing housing unit sales over the late Spring and through the Summer had also declined—compared to year earlier levels—for six straight months (or through September 2018).

In September of 2018, sales of previously-owned or existing U.S. housing units also fell 3.4% to an annual rate of 5.15 million (seasonally-adjusted).[9] Sales of existing units in September were down by 4.1% from year earlier levels, the seventh straight month of sales declines (see Figure 1.2 below). Those seven straight months of previously-owned unit sales declines corresponded to the longest period of falling month-to-month sales of existing homes dating back to the calendar year 2014 period. For perspective, calendar year 2014 marked part of a sluggish period of housing sales activity when U.S. housing markets were recovering from the mid-2000s housing market crash and resulting financial crisis that led to the so-called "Great Recession" in the U.S economy.

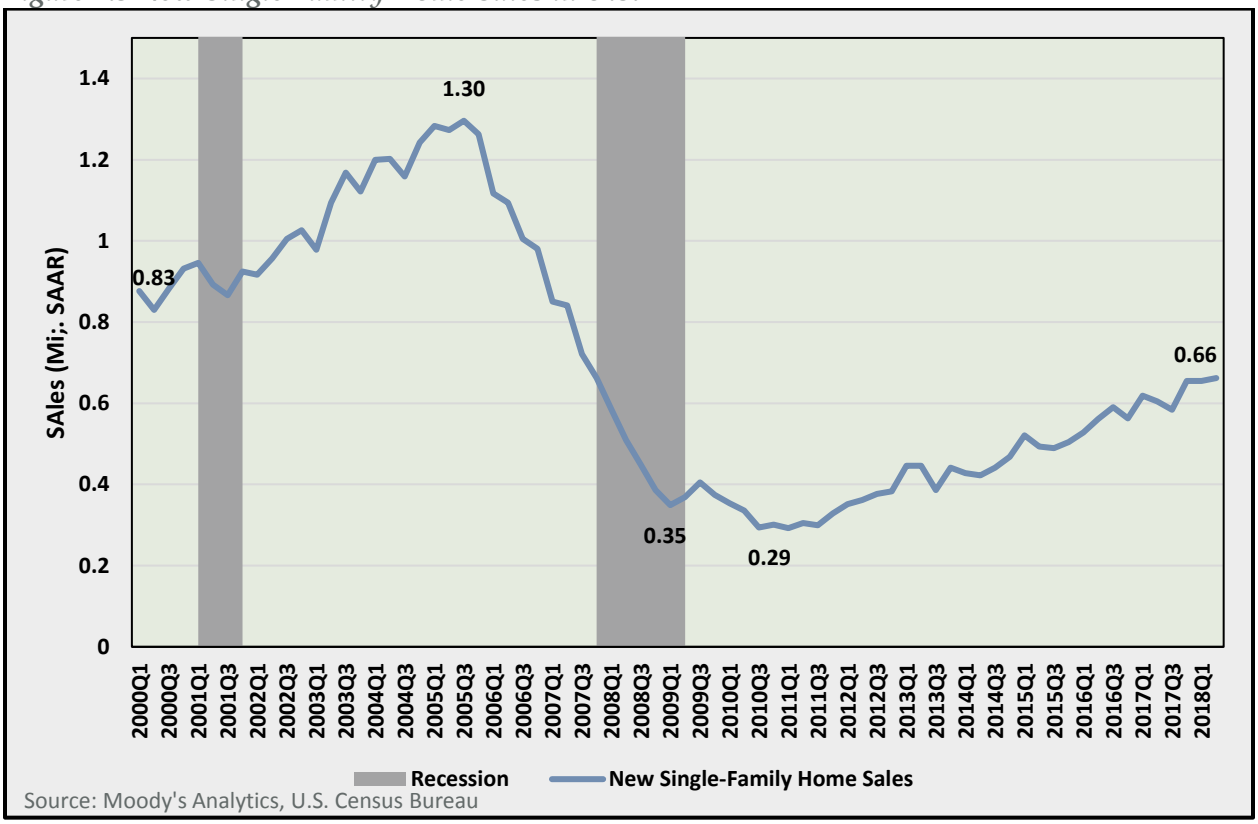
Figure 1.2 Existing Single Family Homes Sales in U.S.



[9] National Association of Realtors, monthly reports.

The recent sales data (shown above), taken together with the recent slowing in the number of new housing units built),[10] indicated that the housing sector overall had slowed despite the still strong performing U.S. economy overall (See Figure 1.3 below). However, even though activity was decelerating, the slowdown in the housing sector through that period had not exhibited any of the characteristics that led to the historic housing and financial market collapse that essentially took down the whole U.S. economy during the mid-2000s.

Figure 1.3 New Single Family Home Sales in U.S.



For example, during that historic and steep housing market decline in the mid-2000s, prices overall fell roughly 25 percent, and single-family housing unit starts[11] fell by more than two thirds (from a peak of more than 1.7 million units[12] to a seasonally-adjusted level of just over 430,000 units). In fact, housing prices across the U.S. during the "Great Recession" experienced a historically unique decline in terms of its geographically scope, where housing prices fell in 49 of 50 states and in the District of Columbia **for the first time in modern, U.S. post World War II economic history**.[13] U.S. housing prices on average also fell very sharply as well. This

[10] For example, the three-month moving average of starts of new single-family housing units was 870,000 units in September, down somewhat from the nearly 900,000 unit average at the beginning of calendar year 2018.

[11] Housing unit starts means the number of new housing units that began construction during the survey period, typically monthly or quarterly.

[12] At a seasonally adjusted annual rate.

[13] In past U.S. recessions, housing price declines were narrower in geographic scope, and were not as deep (in terms of them magnitude of the housing price decline) as they were during the period in and around the "Great Recession."

combination of sharp and broadly-felt housing price declines were highly unusual given the typically highly-localized nature of housing-real estate markets.[14]

With respect to the recovery from the U.S. "Great Recession" of the mid-2000s, the negative effects of that historic downturn still do not appear to have "completely healed," despite the unusually long period of recovery/expansion. The dynamics of the U.S. recovery/expansion through November 2018 from the unusually long and deep downturn of the late-2000s have been atypical, with activity that has been more restrained in character. For example, this cycle has been different because building activity never rebounded in the aftermath of the last downturn—even as prices recovered and moved to new highs in nearly all markets.[15] Explanations vary, but many analysts have pointed to a large number of construction workers exiting from the industry altogether, including large losses in many specialty trades that are critically important to housing construction. The harsh aspects of the late-2000s downturn also resulted in many developers and builders leaving the industry as well. Those developments left the home building industry short of workers, and the result has been an industry with a constrained productive capacity overall.[16]

As a result, housing construction activity levels overall have never really fully recovered during the current period of economic expansion. The housing unit construction activity data, even more than eight years into the current U.S. economic upturn, has remained well below levels that are usually observed during economic upcycles—including the Glens Falls MSA (see Figure 1.4 below)—and has been more characteristic of new housing construction activity levels that appear more during typical periods of U.S. economic recession.

In addition to labor shortages, higher construction materials costs[17] has also been adversely impacting housing construction activity levels. In addition and with respect to local and regional housing markets, there also has been evidence that increased, and many times tighter, land use and building regulations have had an effect of holding back the construction of new housing units.[18]

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[14] Even though credit conditions and interest rate levels can be determined by national and sometimes global conditions.

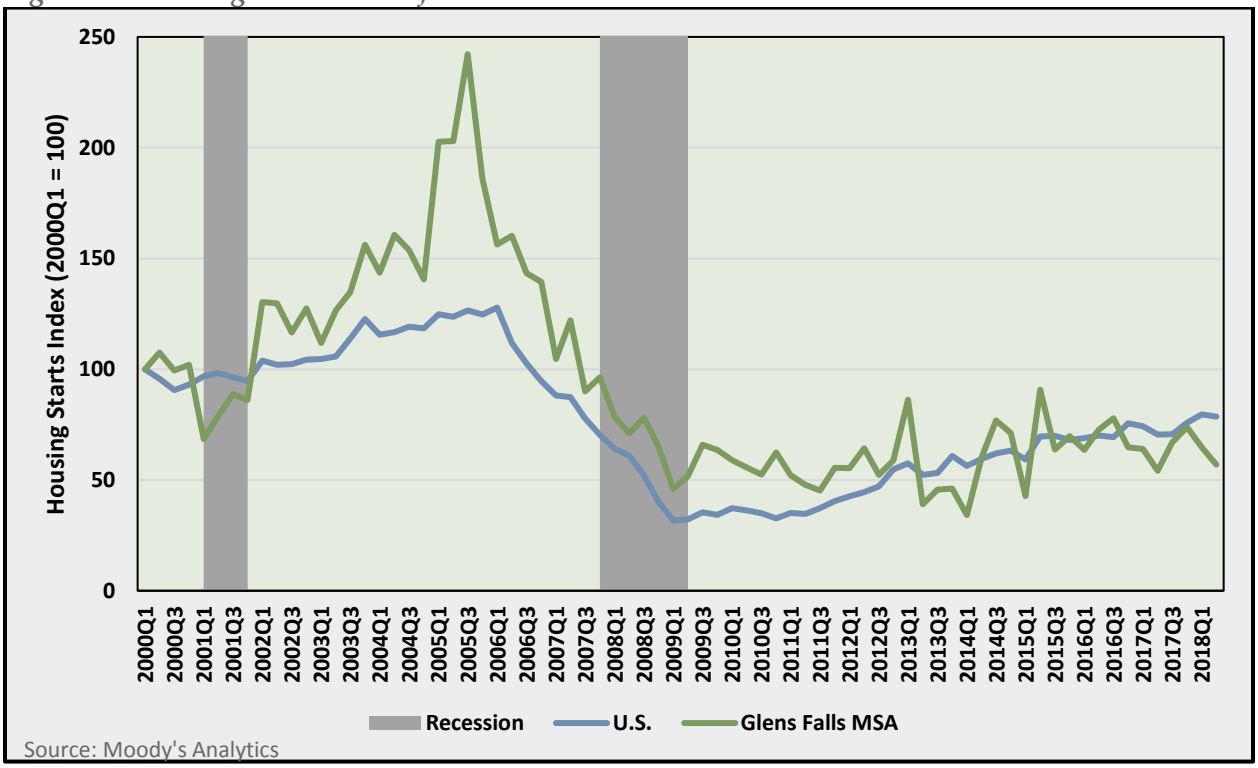
[15] For example, the Federal Housing Finance Agency's house price index showed that in the second quarter of calendar year 2018, housing prices increased in all 50 states for the 17th consecutive quarter (or for four and one quarter years in total). Through June 30 of calendar year 2018, roughly 40 states and the District of Columbia had reached their pre-"Great Recession" housing price levels, with only Connecticut, New Jersey, and Rhode Island among the northeastern U.S. states that have not yet reached their pre-mid 2000s pre-U.S. Great Recession, housing price peaks.

[16] Burcu Eyigungor. *Housing's Role in the Slow Recovery*. Q2 2016. Federal Reserve Bank of Philadelphia Research Department.

[17] Which at least in part appear to be due to trade tensions associated with the recently imposed U.S. tariffs on steel and aluminum and concerns about the so-called "dumping" of Canadian timber in U.S. markets.

[18] Raven E. Saks. *Job Creation and Housing Construction: Constraints on Metropolitan Area Employment Growth*. 2008. Federal Reserve Board of Governors.

Figure 1.4 Housing Starts Index for U.S. and Glens Falls MSA

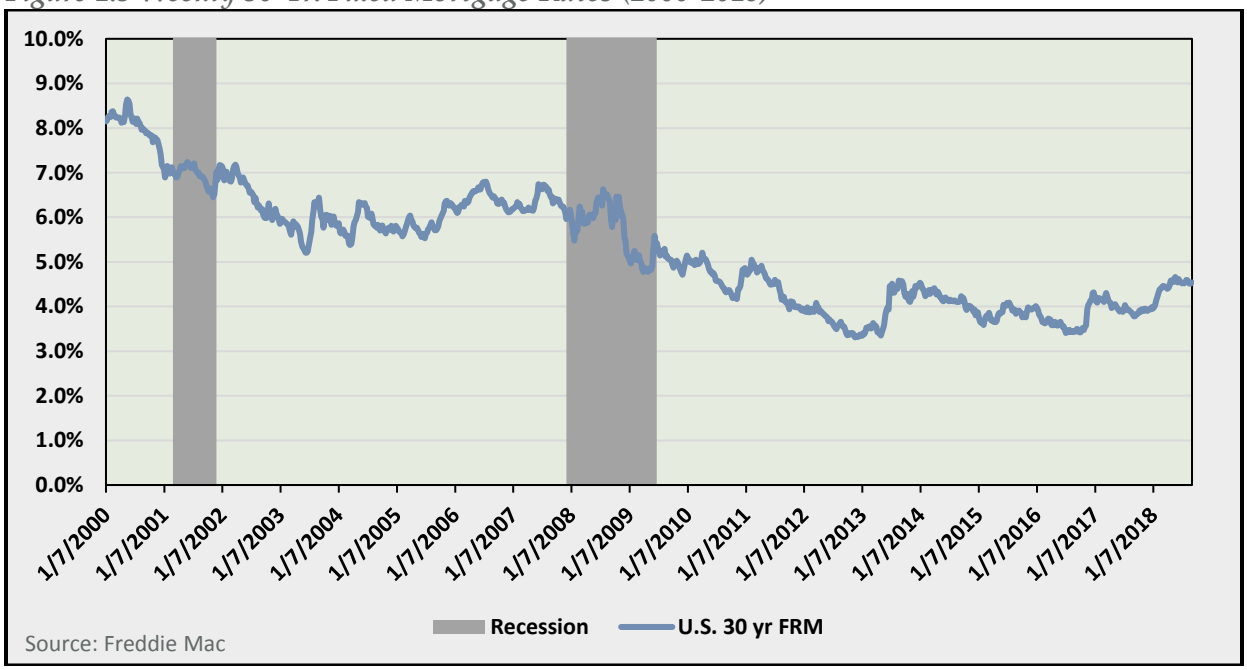


In fact, instead of experiencing growing levels of over-supply in housing markets that is a fairly typical development during aging economic cycles, many housing markets across the U.S. have experienced the worst shortage of available housing units for sale in decades. This has had the effect of driving up housing prices in many state and regional markets, which has had a worsening effect on affordability—as household income growth at the same time has been slower than normal. In many markets, these dynamics have had the effect of locking many first-time home buyers out of the market and prevented much of the aging in-place households from potentially downsizing. Widespread news reports through this economic cycle have indicated that the upper end of the price range has been the part of the housing market where the majority of the new construction activity has taken place during the current economic upcycle.

Looking ahead, there are a number of reasons that suggest that the above-described dynamics in the current housing environment will likely persist into the future. For example, mortgage rates have risen by roughly one percentage point over the past year on a national average basis in response to the shift in U.S. monetary policy towards what has been described as a "quantitative tightening" approach[19] (see Figure 1.5 below). Add to the above the passage of the Tax Cuts and Jobs Act of 2017 last December (which reduced homeownership incentives for buyers including foreign investors) and the ample supply of rental units in many markets (which has made buying a housing unit less important), it seems apparent that most key drivers underpinning the clear downshifting in housing activity are poised to continue.

[19] Following a long period of accommodative monetary policy termed "quantitative easing."

Figure 1.5 Weekly 30-Yr. Fixed Mortgage Rates (2000-2018)



The "silver lining" in the above is that compared to a decade ago, the housing market overall is currently far from being over-heated, and therefore will not likely play a role anything like the type of catalytic role that the industry played during the "Great Recession" and accompanying financial crisis back in the mid-2000s to late-2000s time frame. This likely positions the housing industry for a much gentler slowdown versus the mid-2000s if the U.S. economic upturn eventually runs into trouble. It is also unlikely that the housing industry itself will play any significant role in encouraging or precipitating an overall U.S. economic downturn, again in contrast to the late-2000s. Instead, the biggest threat to the continuation of the U.S. economic upturn appears to be an escalation of the budding trade wars with China and the European Union. While there are many legitimate trade issues to be negotiated, so-called "tit-for-tat tariffs" against both allies and other nations have been criticized as an ill-conceived tool for effecting the desired changes. Recent studies by Moody's Analytics,[20] United States Chamber of Commerce,[21] and IHS Markit[22] show substantial potential economic and job losses that could ensue if the current trade tensions escalate into a full-scale, protracted trade war.

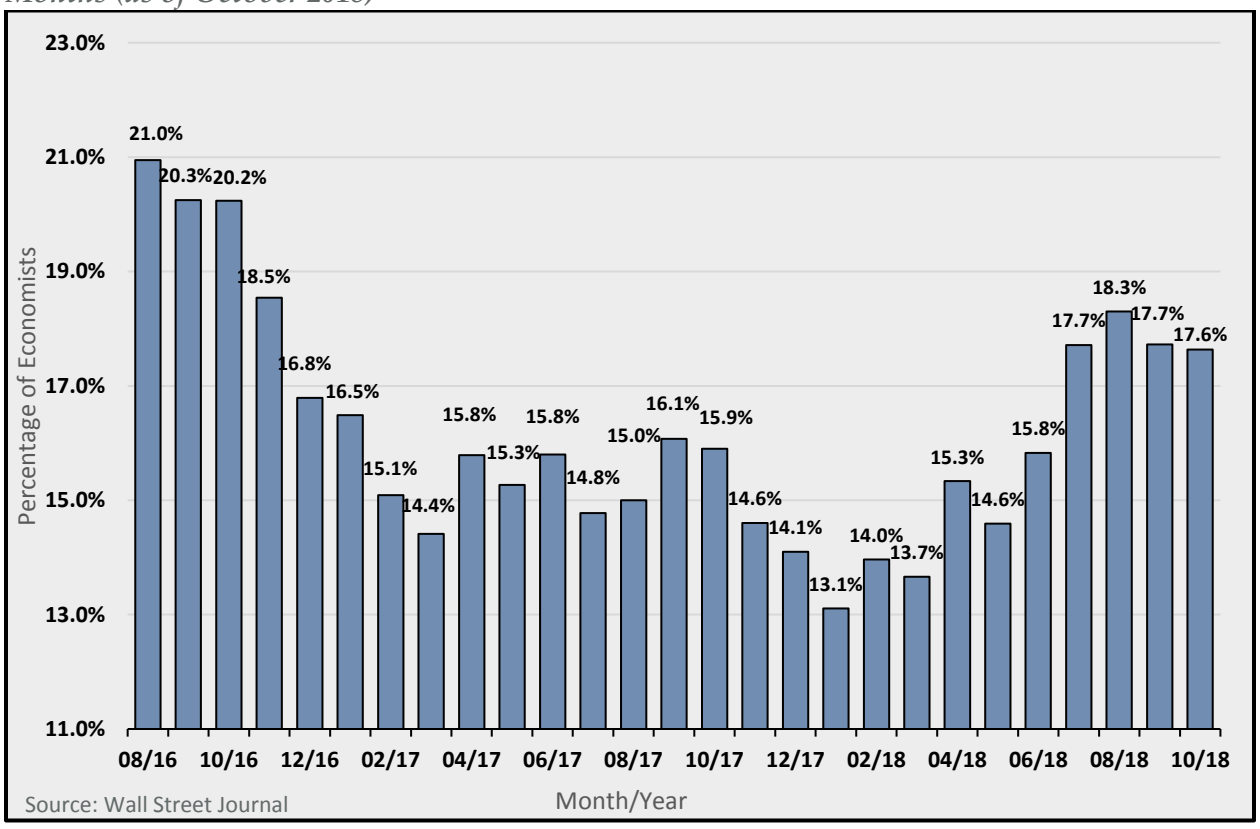
As the U.S. economic expansion ages, there are other risks that could also bring the current U.S. upturn to an end. Although there does not appear to be imbalances in the economy now that would precipitate a turning point towards a new broad-based recession in the U.S. economy, if the current acceleration in growth continues, such imbalances could develop. Because of this, the long-term macroeconomic and demographic forecast, which forms the basis for the longer term

[20] *Trump Trade War*. July 2018. Mark Zandi, Adam Kamins, Jeremy Cohn.
[21] *Trade Works. Tariffs Don't*. 2018. U.S. Chamber of Commerce.
[22] *Impact of a Global Trade War on the Economy*. 2018. Nariman Behravesh, Sara L. Johnson, John Anton.

demographic, housing unit demand, and supply forecast for this study, only calls for a slowing of U.S. growth (which will clearly have some regional implications) over the calendar year 2020 to 2021 period—corresponding to a more modestly-paced rate of economic growth over a roughly two-year "sub-cycle" but not a full-fledged economic recession (see Appendix A).

This is consistent with the prevailing view of more than 80 percent of U.S. economists surveyed each month by the Wall Street Journal (see Figure 1.6 below) who do not foresee a U.S. economic downturn within the next 12 months (from the date of this report). For this workforce housing assessment study, the above means the development, refinement, and implementation of polices to address the Town's needs will likely be occurring over a time frame when the economic environment will generally be "facilitating" in nature. Although the environment may not be consistently facilitating for each individual year over the entire 2017-27 economic forecast period, the long-term, regional economic and demographic forecast developed and used as a backdrop for this study does not expect the Town will need to deal with a deep and prolonged period of economic recession. If a period of economic recession was to occur during the 2017-27 time frame, that adverse economic performance development would clearly complicate the implementation of any adopted course of action to support workforce housing affordability in the Town.

Figure 1.6 Percent of U.S. Economists Who Believe the U.S. Will Fall Into Recession within 12 Months (as of October 2018)



Study Overview and Key Findings

This report describes the methodology and findings of a benchmark study of affordable workforce housing for the Town of Queensbury located in Warren County, New York, within the Glens Falls Metropolitan Statistical Area (hereafter the "MSA" or "Metro Area"). The Town recognizes that having a full range of affordable workforce housing choices is a critical part of a long-term strong and sustainable economy. As housing affordability pressures grow in the region and in the Town, there will be a rising regional and local need of additional affordable workforce and other housing options throughout the region. These rising housing affordability pressures will also include a rising need for affordable workforce housing, even though this study found that housing cost stress within the Town was not dramatically out of balance as of calendar year 2016—the base year for this study.

The Town's housing situation is mostly a reflection of the health of employers in the region (including a potentially growing influence of a key technology employer located just outside the MSA in Saratoga County), its aging demographics (like so many rural regions throughout the northeastern U.S.), and the impacts associated with its visitor economy. The Town's/region's visitor economy benefits from the presence of Lake George, a number of high-quality tourism attractions, its role as a southeastern gateway to the Adirondacks, and the high quality recreational assets/amenities within the Town (and region). The above factors, combined with imperative to protect the region's and Town's high environmental quality (as the so-called "Golden Goose" of the regional economy), all impact and will continue to impact the current and future demand and supply for housing in the community. More specifically to the point of the issue of affordable workforce housing, the Town requested Economic and Policy Resources Inc. of Williston VT, and Crane Associates, Inc. of Burlington, VT to provide a foundational, fact-based analysis on the regional and Town housing market; provide a long-term forecast of housing supply and demand 10-years forward; and assist in the development of a cohesive set of fact-based strategy options that could be considered by the Town to help facilitate the eventual implementation of a coordinated, strategic mosaic of polices to help ensure a full range of workforce housing options in the Town.

The study found that current affordability pressures in the Town are not unmanageable or anywhere near crisis levels as they are in many municipalities and regions throughout other areas in the northeast. However, although affordability pressures within the Town are currently significant for the very low and low household income groups for renter housing and for the very low end of the household income classes for owner units, the study found that housing cost affordability pressures are likely to mount for many households in both tenure categories in household income categories above those lower levels in the Town.[23] This is because the study found that affordability pressures are projected to grow significantly over the next decade if policies are not developed to help address them.

[23] Tenure category or tenure categories in the context of this study refers to the owner/renter status of households in the Town.

In many respects, the current workforce-housing policy environment in the Town makes developing policies to address building affordability pressures a difficult "lift." Because the level of housing cost stress in the Town has not yet risen to the level of being a crisis, there is not as much attention being paid to this issue, and the related issue of workforce housing affordability, outside of the development-construction community, and the non-profit housing affordability services-providing sector who have been working to address these issues.[24] Experienced policymakers understand that the lack of a crisis (or at least a compelling case for concerted action) in local policy matters can make discussing and implementing policies designed to address those pressures more difficult (in terms of reaching a consensus and implementation). This is especially true in the area of housing where there are long lead times between the implementation of polices and actual results, and there are nearly always significant and sometimes difficult trade-offs between policy alternatives and "no action" or maintaining the status quo.

The EPR-CA Team notes that the Town is not new to the arena for the implementation of difficult policy choices. Regional and Town economic development policy must always be careful to "thread the needle" to try to take advantage of the region's and Town's natural assets and amenities endowment without harming the quality of those very same natural assets and amenities that comprise the region's and Town's "competitive advantage" in this area. That "thread-the-needle" approach will be center stage as Town stakeholders debate the merits and disadvantages of the various policy alternatives to effectively deal with the Town's growing affordability pressures for workforce housing.

The authors intend this report to be a foundational study for the Town going forward that also builds upon the already substantial body of work within the Town on the affordable housing issue in general. This information has been memorialized in the previous affordable housing strategy effort back in the early 2000s and has been incorporated into the Town's Comprehensive Plan. The report, the associated data, and the long-term forecast is intended to provide the Town elected officials, staff, and volunteers with the full breadth of historical data of importance to this issue and the most accurate forward-looking forecast of the municipality's future using the most up-to-date data on economics, demographics, and housing available today (as of November 2018). The last section of this report includes a set of options based on the EPR-CA Team's analysis on the long-term forecast which shows the number of housing units that are estimated to be needed to supply the market today, and in the next ten years by tenure and household income level.

Finally, the various policy options presented below for further consideration, and potentially for further and full development, should be viewed as suggestions—not prescriptions. The EPR-CA Team does not pre-suppose that the data-driven suggestions directly transform themselves into specific policy prescriptions. Local decisions are driven by, and best made by, the citizens of the Town and their elected representatives with the assistance of municipal staff and volunteers.

[24] Although it could rise to that level over the 2017-27 time horizon—according to the findings of this study.

Nevertheless, we do hope that Town decision-makers find this study useful to informing future policy decisions that are made.

Summary of Key Findings

As with any study of this type, the report includes a very large amount of historical and forecasted data that at times can be overwhelming for readers. Before delving into the details of the data and forecast and all of the technical descriptions of the methods used in this study, the following section briefly describes some of what the EPR-CA Team felt were the more important findings (among many) that should be emphasized at the outset of this study. These findings are descriptive and highlight facts and trends that are particularly important to the key determinants of the Town's housing trends and the long-term economic, demographic, and housing unit demand and supply for the Town. The EPR-CA Team narrowed a much larger list of findings—which will all be presented elsewhere in this report—down to a "Top Five" list that in our opinion are likely to have significant implications for a workforce housing assessment study.

Key Finding #1—The Population is Aging and Is Likely to Continue to Grow Older.

This study found that the population of the Town has been aging and it is likely to grow older over the next ten years. The median age of the resident population in the Town in 2016 was estimated to be 46.1 years; roughly half a year higher than the Warren County population, 7.9 years higher than the median age for the State, and 8.2 years higher than the U.S. median age. Over time, the data show that the Town's age category of those residents aged 45 to 64 years and the population category aged over 65 years population has also been increasing. This has been occurring at the same time the Town's population categories of residents aged less than 19 years has been in decline over the 1990-16 time period.

The study found that this "graying" of the Town's resident population is likely to continue over the next ten years—similar to what is expected to occur in the Glens Falls MSA region as a whole and within each of the two counties that comprise the MSA. Over the 2016 to 2027 time frame, the Town's resident population aged 65 years and older is expected to increase in share from 20.1% of the total to 24.1%—an increase of 4.0 percentage points. Many within the aged 65 years and older population category are "retirees." Though much of these gains in the Town's older population groups have been due to the natural aging of the population (such as the aging of the so-called "Baby Boom" generation), there also has been a net in-migration of "retirees."[25]

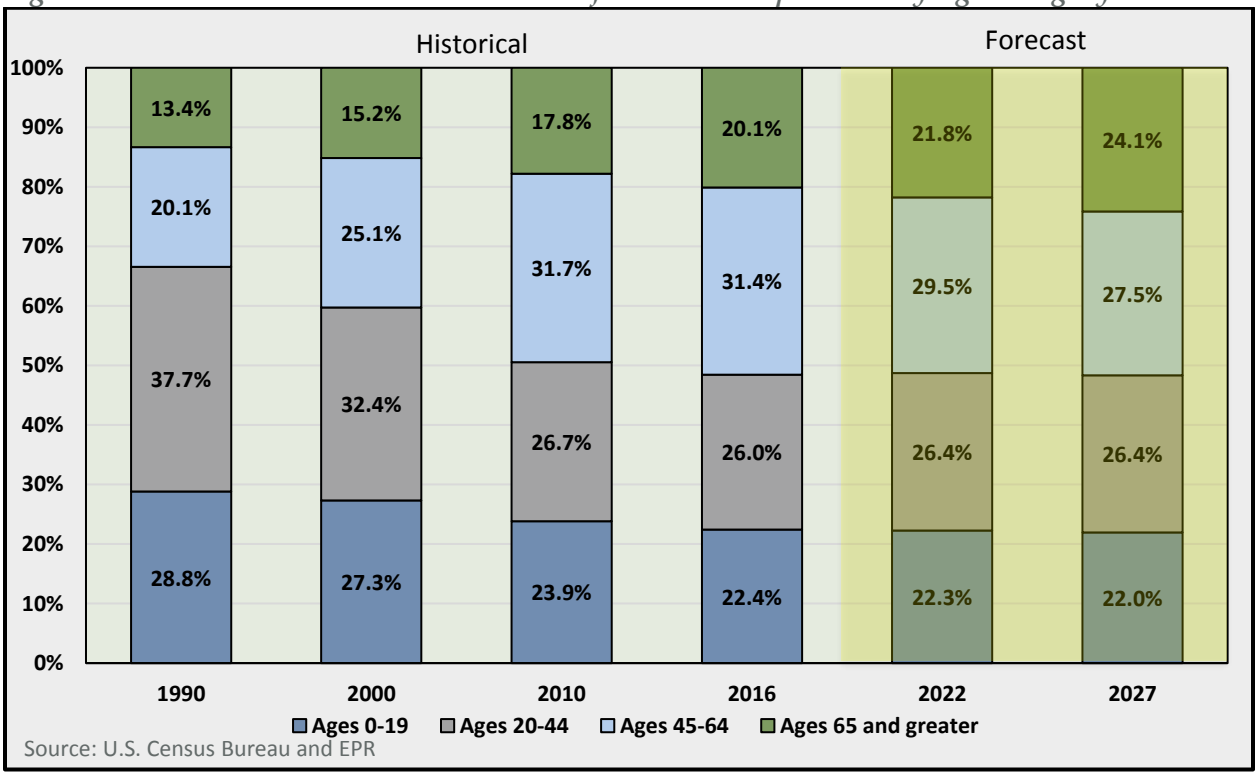
As the resident population in the Town continues to age, the rising numbers of elderly residents will have significant housing implications. For example, the aging of the population is strongly correlated with declining household size (e.g. which results in a smaller number of persons occupying each housing unit in the Town) which means there is likely to continue to be a decline in the number of persons residing in each housing unit in the Town (and region). Practically

[25] Which has contributed to a significant decline in the number or persons per household over time. This, in turn, has also contributed to, and will likely continue to contribute to, a larger increase in the number of households in the Town—with households as a fundamental building block of housing unit demand.

speaking, this means that the Town's housing inventory of units (sometimes also referred to as the Town's housing stock) will need to work harder and harder as the population ages just to house the Town's population—even if the absolute number of residents in the Town simply stays the same—much less increase as the Town's population is expected to do so through calendar year 2027. In addition, the aging of the Town's population has implications regarding the need for additional units of appropriately priced housing to support downsizing demand, demand for additional units of transitional housing, the need for additional assisted-living units suited for the needs of the elderly, and the need for additional bed capacity for nursing home care.

The aging population also can be important to driving demand and changing market preferences. For example, in some regions, an aging population means there is a developing need for additional high-quality, smaller-square-footage housing units that can be used for "down-sizing" purposes. This is particularly important for the Town if it desires its aging residents to have the opportunity to "age in place,"[26] and for the Town to have the opportunity to get younger and slow, or even reverse, its long-term "graying" trend.

Figure 1.7 Historical and Forecasted Shares of the Town Population by Age Category



[26] The ability to live in one's own home and community safely, independently, and comfortably, regardless of age, income, or disability status-level.

Key Finding #2—Future Population Growth Will be Driven by Economic Migration.

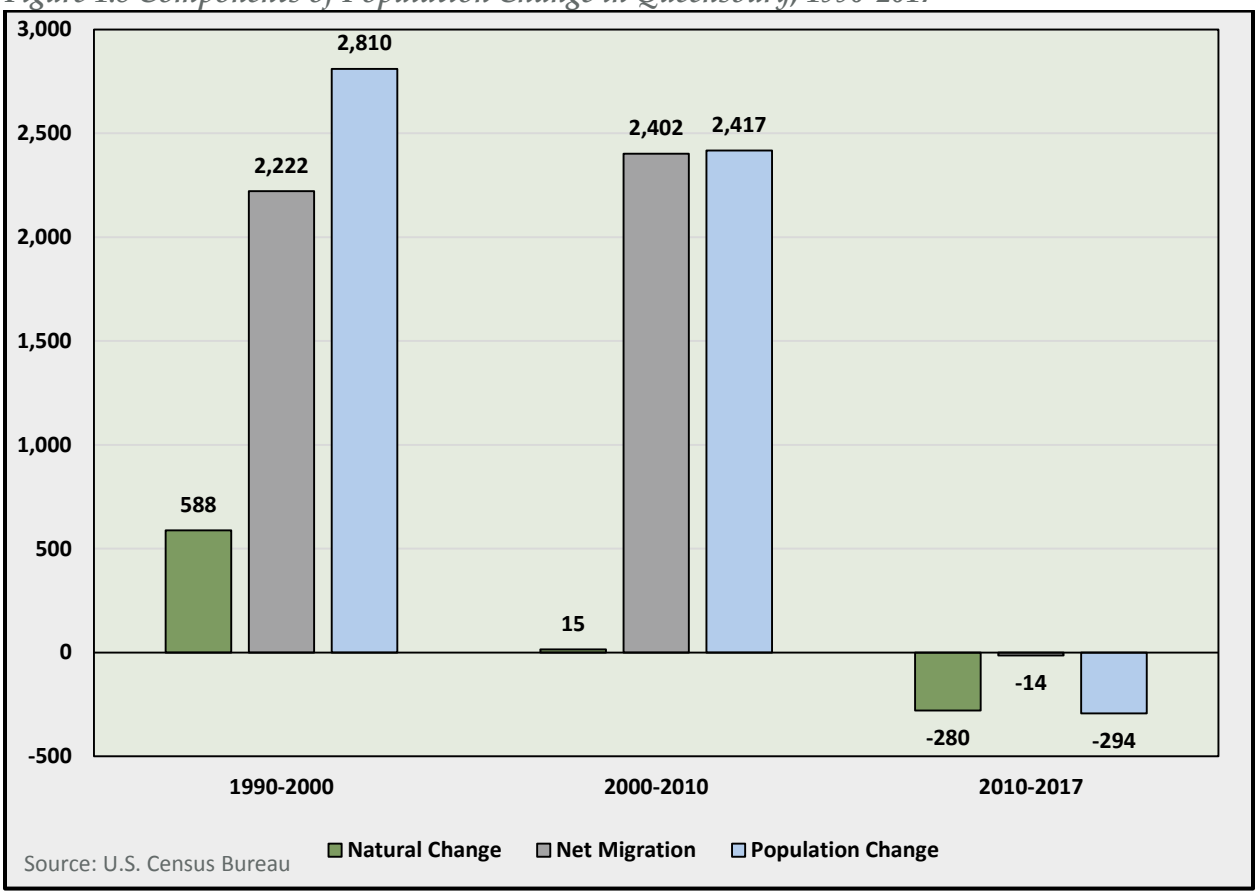
For most of the post-World War II period, the so-called "Post-War Baby-Boom" dominated the demographics of the nation as a whole—including upstate New York and other northeastern U.S. regions that are rural in character. Located in upstate New York, the Town was part of those demographic trends when post-war birth rates soared, and large families tied to a rising Middle Class were the norm. Over the last nearly three decades, the population growth in the Town during the 1990s and early 2000s, and recently the small declines in population for the Town during the 2010s, have been driven by an evolving mix of factors associated with post-Baby Boom demographics—where smaller families have become the norm and where the population, on average, has been aging.

The above in fact describes the evolving population-change experience of the Town. The last 30 years has seen the role of the natural change in resident population growth decline[27] relative to the number of new residents that move into the Town (in-migration) versus those existing residents who move away (out-migration). During the 1990s, the Town's population was driven by the combination of a natural increase in population (with 588 more births in the Town versus deaths in the Town over the decade representing 20.9% of the Town's population growth during the period), with net population in-migration providing the rest of the Town's resident population growth (at 2,222 new residents or 79.1% of the total). During the 2000s, the net contribution to the Town's natural increase began to decline, and the decade ended with a smaller positive change to the Town's population due to the natural change, with virtually all of the Town's population growth due to net in-migration (see Figure 1.8 below).

Since 2010, mid-year population estimates from the U.S. Bureau of the Census indicated that the natural change has turned slightly negative in the Town, with the number of deaths higher than the number of births. This contributed to a net loss of -280 residents over the six-year period between 2010 and 2017. Net migration, no doubt adversely impacted by the economic and demographic dynamics associated with the U.S. "Great Recession," changed from providing nearly all of the net increase in the Town's population growth during the 2000s to flipping to a small net population loss (at -14 residents in the years since 2010). Since much of a region's population in-migration is tied to the performance of its economy, the leveling of population in-migration during a period that included a long and deep period of national economic recession was found to be not at all surprising.

[27] Which is determined by the number of births in the Town versus the number of deaths of Town residents.

Figure 1.8 Components of Population Change in Queensbury, 1990-2017

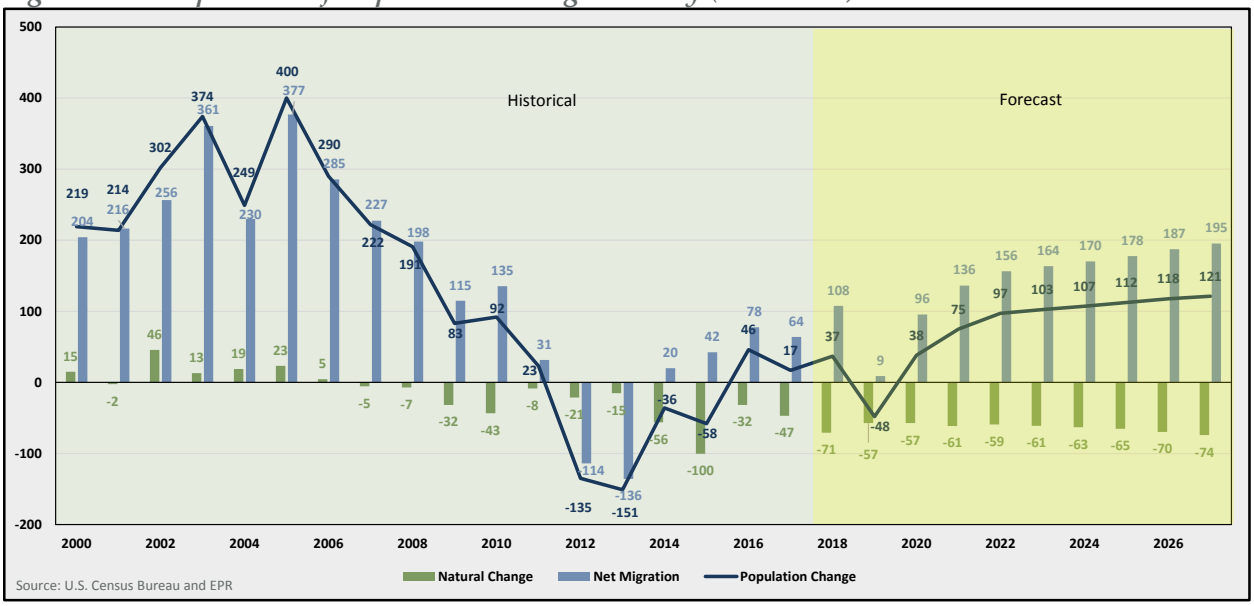


However, with the positive outlook through calendar year 2027 for the U.S. and regional economy, given the Town's ethnic make-up,[28] and considering the Town's graying population, this study expects that the overwhelming majority of the Town's future population change will be driven by economic migration. Based on the study's long-term economic and demographic forecast, we also expect that population in-migration over the calendar year 2017-calendar year 2027 period will be positive and will be enough to push overall population growth in the Town back into positive territory by calendar year 2020 (see Figure 1.9 below). This forecast has significant implications for the Town's (and the region's) future economic performance, and includes the ramifications of the attendant policy issues such as the Town's and region's labor force development needs and the workforce housing needed to support those labor market requirements. The forecast also implies there will also be environmental cross-pressures that many of these associated economic growth issues will prompt going forward.[29]

[28] With a population that was 96.1% Caucasian as of 2016—with that demographic category's very low birth rates—according to the 2016 American Community Survey.

[29] Not to mention impacts on local K-12 schools and higher education in the Town and region.

Figure 1.9 Components of Population Change History (2000-2016) and Forecasted 2017-2027



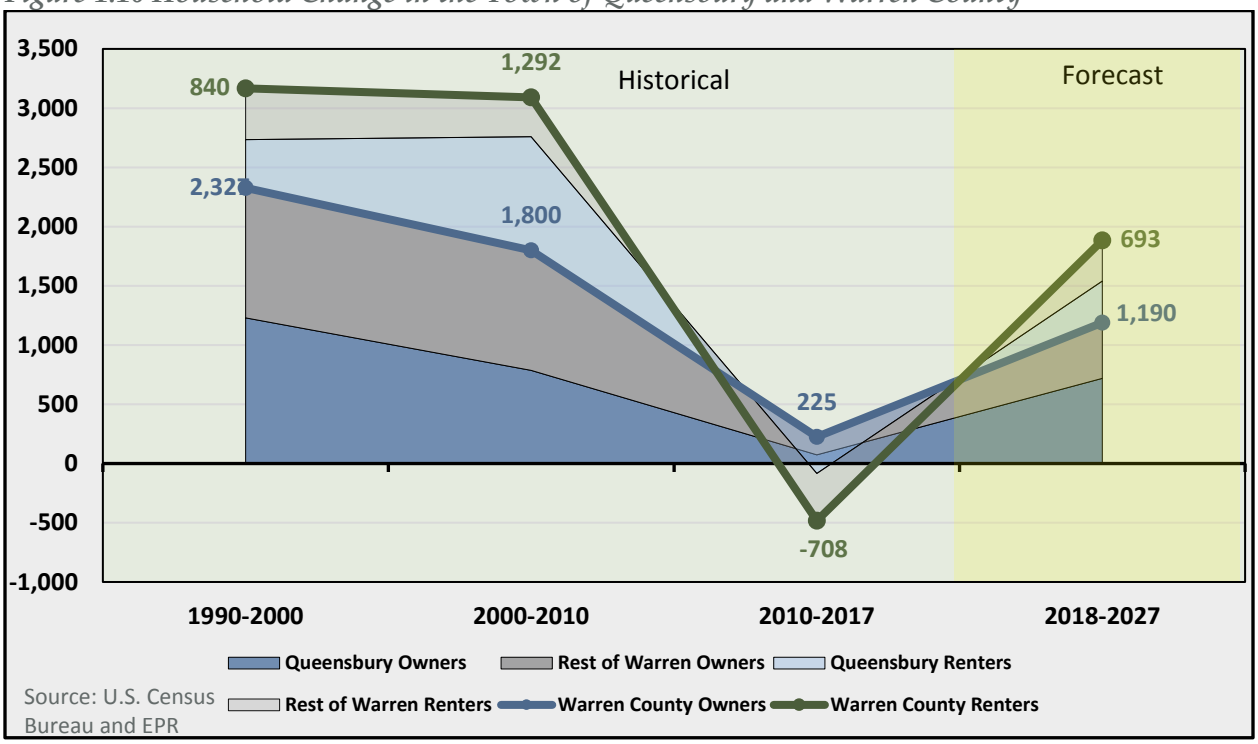
Key Finding #3—The Town's Historical Role as an Economic Center and a Provider of Regional Workforce Housing Will Continue in the Future.

Over the last nearly three decades, the Town has played a leading regional role in hosting key regional employers and for providing housing to the regional population. During the calendar year 1990-2017 time frame, a total of 54.5% of total household growth in Warren County overall (and a total of 97.7 percent of population growth for the county[30]) was in the Town. This leading role is expected to continue over the study's forecast period with over half (or 56.7 percent of the county's expected 1,883 household growth over the forecast period)[31] expected to occur within the Town (see Figure 1.10 below). Among the two principal housing tenure categories, the study's long-term forecast indicates that the Town is expected to account for a total of 60.3 percent of Warren County's forecasted owner household growth and 50.5 percent of the county's forecasted renter household growth.

[30] Largely because the Town lost less population over the calendar year 2010-17 period than the area in the county outside of the Town—which lost a significant number of residents.

[31] The reader will note that this is larger than the forecasted population growth, which may seem counterintuitive. However, this growth is supported not just by increasing population but also the aging population and decreasing household size that are and have been significant on-going changes that have been occurring below the top line population change numbers.

Figure 1.10 Household Change in the Town of Queensbury and Warren County



Key Finding #4—Current Housing Cost Stress in the Town Appears Manageable—But This Will Worsen Over the Next Decade Without Action.

The study estimated that housing cost stress[32] in the Town in the base year of calendar year 2016 (see Table 1.1 below) was limited to the lowest household income category for owners (at or below 50% of the median household income level of owner households in the Town) and the bottom three household income categories for renters (or for the household income categories at or below 100% of the median household income of renters in the Town). Compared to many other municipalities, regions, and States throughout the northeast, these calendar year 2016 housing cost stress benchmarks are relatively "manageable," and in many jurisdictions would very likely be envied. As such, these benchmarks mean the Town has the opportunity to address its workforce housing issues from a position of relative strength. That is, the Town appears to have the latitude to begin to address these growing affordability pressures before the Town's measures of housing cost stress rise. However, because many housing cost items for both owners

[32] It is important to note that this analysis is strictly about *housing* cost and as such does not include any analysis of transportation costs and its potential effects on housing affordability in the Town. Although the authors recognize that transportation costs are a significant, but not easily estimated household cost for rural households (like those in the Town), we did not include estimates of household transportation costs by household income category in the housing cost affordability calculations. As of the date of this report, these costs are not typically included in housing cost affordability calculations and they are not yet a routine part of affordability benchmarks used by the U.S. Department of Housing and Urban Development ("HUD). However, this is an area ripe for further investigation if the Town elects to pursue strategies to facilitate the development of affordable workforce housing. The prospective commission or committee that may result from this effort could identify this area of costs as important to furthering Town policies in this regard.

and renters are expected to increase at a rate that is roughly double household income growth in the Town over the calendar year 2017-27 time frame, the Town's opportunity to act is not open-ended. In fact, failure to act may result in affordability pressures rising within the Town by calendar year 2027 to a level where a large number of owner and renter households could end up experiencing a genuine housing cost stress-based crisis.

Table 1.1 Existing Housing Cost Affordability Gap in the Town of Queensbury (2016)[33]

Town of Queensbury-Estimated Affordable Gap for Owner Units, 2016					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$38,357	$61,371	$76,714	$92,057	
Affordable Price [Excludes Transportation Costs]	$99,679	$189,321	$243,646	$297,735	
Estimated Unit Demand	1,450	1,592	1,092	850	3,403
Estimated Unit Supply	865	2,393	1,620	1,440	2,069
Affordability Gap in Units (Demand minus Supply)	585	-801	-528	-590	
Cumulative Demand	**1,450**	**3,042**	**4,134**	**4,984**	**8,387**
Cumulative Supply	**865**	**3,258**	**4,878**	**6,318**	**8,387**
Cumulative Gap	**585**	**-216**	**-744**	**-1,334**	
Town of Queensbury-Estimated Affordable Gap for Renter Units, 2016					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$19,048	$30,476	$38,095	$45,714	
Affordable Rent [Excludes Transportation Costs]	$476	$762	$952	$1,143	
Estimated Unit Demand	804	190	494	284	1,212
Estimated Unit Supply	265	206	763	653	1,099
Affordability Gap in Units (Demand minus Supply)	539	-15	-268	-368	
Cumulative Demand	**804**	**995**	**1,489**	**1,773**	**2,985**
Cumulative Supply	**265**	**471**	**1,234**	**1,886**	**2,985**
Cumulative Gap	**539**	**524**	**256**	**-113**	
Source: U.S. Census Bureau, American Community Survey				Prepared by Economic & Policy Resources	

The above situation presents Town residents, policymakers, and stakeholders with both opportunities and challenges. On one side, the size of the workforce housing cost stress gap is not large, and the Town is presented with the opportunity to get out of its situation before the size of the problem grows to require decades to recover—as long as it can develop a sufficient consensus to move forward to address those relatively small, but still significant gaps. On the other side, as mentioned above, it is difficult to develop an appropriate level of urgency to take the sometimes difficult steps to address the problem among Town residents because a sufficient consensus is not present to take action. This can particularly be an obstacle for housing policy of this nature, because many best practices policy solutions of this type can be expensive and involve sometimes politically-unpopular changes within communities. As stated above, "threading the needle" to devise and implement policies will be challenging and will test the will of Town residents to thoughtfully address these workforce housing affordability issues before they have the opportunity to become a potential crisis.

This is the case because this study found that housing cost stress in the Town can be expected to increase significantly over the next ten years. This is because many categories of housing costs for both owners and renters are expected to increase at a rate that is roughly double the expected

[33] Red text in Table 1.1 above indicates the first income category that currently has an adequate or cumulative over-supply of housing units at that household income level.

increase in household income growth for both tenure categories over the calendar year 2016-2027 period. As a result, the number of housing cost stressed households are expected to increase in both tenure categories across a broader range of household income categories (see Table 1.2 below). The table shows that housing cost stress can be expected to engulf a larger number of households in an increasing number of household income categories in both tenure categories.

Table 1.2 2027 Forecasted Affordable Gaps by Tenure in Queensbury[34]

Town of Queensbury-Estimated Affordable Gap for Owner Units, 2027					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$48,999	$78,399	$97,998	$117,598	
Affordable Price [Excludes Transportation Costs]	$112,735	$201,365	$260,845	$320,081	
Estimated Unit Demand	1,585	1,726	1,220	796	3,804
Estimated Unit Supply	695	1,356	1,411	1,334	4,335
Affordability Gap in Units (Demand minus Supply)	890	370	-191	-538	
Cumulative Demand	**1,585**	**3,311**	**4,530**	**5,326**	**9,130**
Cumulative Supply	**695**	**2,051**	**3,462**	**4,795**	**9,130**
Cumulative Gap	890	1,260	1,069	531	
Town of Queensbury-Estimated Affordable Gap for Renter Units, 2027					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$24,109	$38,574	$48,217	$57,860	
Affordable Rent [Excludes Transportation Costs]	$603	$964	$1,205	$1,447	
Estimated Unit Demand	915	428	350	273	1,431
Estimated Unit Supply	283	116	500	687	1,810
Affordability Gap in Units (Demand minus Supply)	632	312	-150	-414	
Cumulative Demand	**915**	**1,343**	**1,692**	**1,965**	**3,396**
Cumulative Supply	**283**	**399**	**899**	**1,586**	**3,396**
Cumulative Gap	632	943	793	379	
Source: U.S. Census Bureau, American Community Survey				Prepared by Economic & Policy Resources	

Indeed, by calendar year 2027 both renters and owners have a unit gap at all income levels up to 120% of median income by tenure category. This shows there is likely to be a significant affordability problem for owners and renters and units affordable at or below the 30%-of-median-income threshold[35] will be largely unavailable leading to many households becoming "housing-cost burdened." This change from calendar year 2016 is largely due to a significantly faster rate of increase for rent and home prices than for incomes through the forecast period (See Figures 1.11 and 1.12 below).

[34] The reader will note that there is no red text on these tables as is there no income category that has a cumulative over-supply of units in calendar year 2027.

[35] The 30% of median income threshold is defined by the U.S. Department of Housing and Urban Development, which says that households spending more than 30% of their total household income on housing are "housing cost burdened."

Figure 1.11 Owner Household Income and Housing Cost Growth

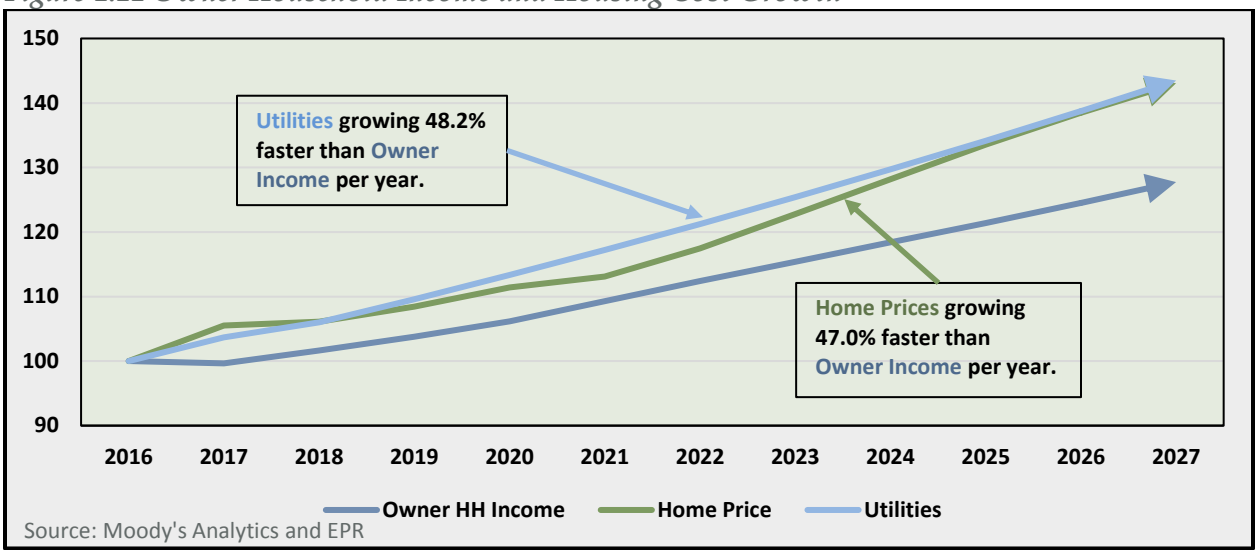
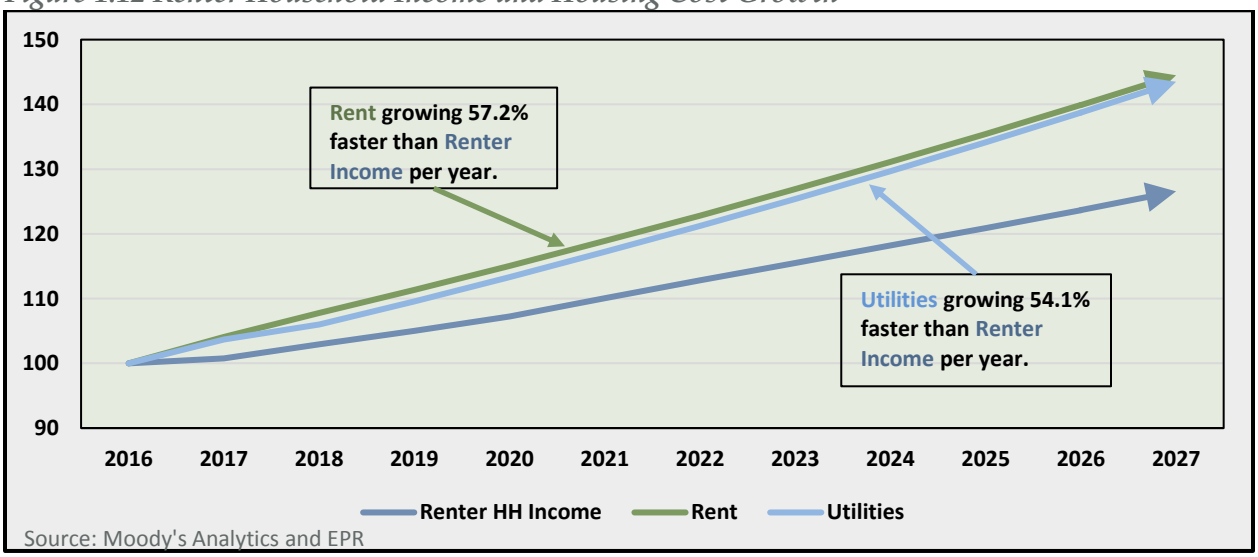


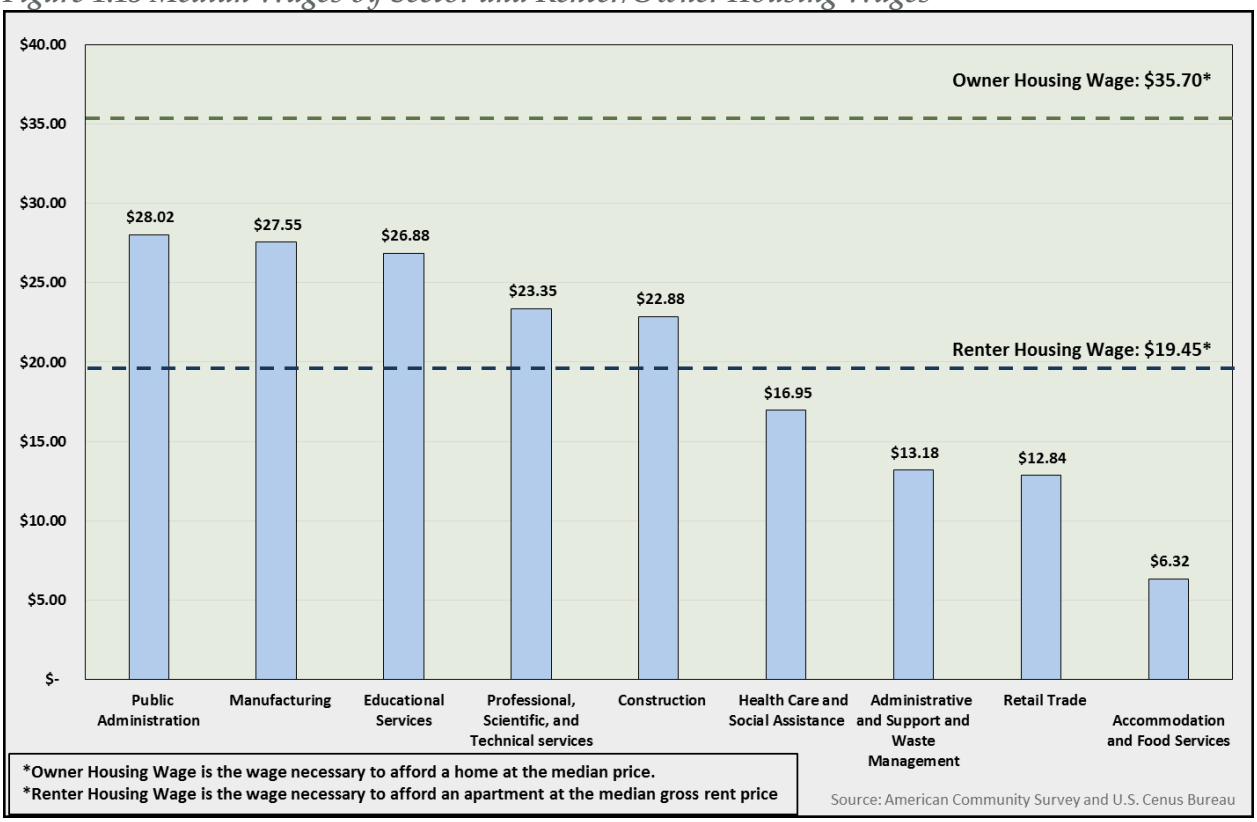
Figure 1.12 Renter Household Income and Housing Cost Growth



Key Finding #5—Many Single Wage Earner Households Are Housing Cost Stressed with Few Signs of Relief Forthcoming

Reflecting the economic realities of our times, many single-wage-earner households in the Town are housing cost stressed (See Figure 1.13 below). The chart compares hourly median wages paid during calendar year 2016 in the Town's nine largest job categories and compares that wage to the median costs of occupying an owner or renter unit on a full-time (2,080 hours per year) basis. As such, the chart presents housing cost on a per-hour basis for a full-time worker by tenure, in order to compare what a single wage-earner in a household would need to earn per hour to avoid being housing cost stressed in each tenure category.

Figure 1.13 Median Wages by Sector and Renter/Owner Housing Wages



For residents of the Town participating in the workforce, the data show that single-wage-earner households were likely experiencing significant levels of housing cost stress in calendar year 2016—the base year for the study. From the data, single-wage-earner households would have very likely been housing cost stressed in calendar year 2016 if they had occupied an owner unit and worked in any of the Town's nine largest job categories. For single-wage-earner households occupying a renter unit, renters working in five of the nine major job categories in the Town would earn a high enough hourly wage on average to pay the typical costs of occupying a renter unit without being housing cost stressed (including the job categories of Public Administration, Manufacturing, Educational Services, Professional, Scientific, and Technical Services, and Construction).

In the other four job categories, single-wage-earner households were likely to be earning an average wage that would not enable their household to avoid being housing cost stressed, unless there was a second wage earner or the household had sufficient wealth to pay those costs. In today's economy, two wage earner households are more the "norm" than the exception. This housing cost stress situation in the Town is unlikely to change over the study period as affordability pressures in both tenure categories are expected to increase over the calendar year 2017-27 time frame as housing costs are expected to increase at a rate significantly faster than household income (see Key Finding #4 above).

Why Workforce Housing?

For business advocacy groups and government officials, expanding affordable workforce housing options has recently been attracting more attention as a means to implement broader strategies working toward building healthy, livable, and sustainable communities. In the region, there are a number of competent, traditional affordable housing services-providing organizations who have been involved with providing an impressive array of services that have helped to address the often formidable affordable housing challenges throughout the region. However, these groups' activities, as they relate to the Town's workforce housing needs, have been mostly indirect in nature. As such, they have been targeted at the housing needs of households in the lowest household income categories that may happen to include assisting households that may include wage earners in the lowest wage job categories.[36]

For the Town, the workforce housing issue provides an opportunity to work proactively to devise a set of strategy options that are designed to address an underserved area of policy that exists between the more traditional, federal, state, and federal-state cooperative affordable housing programs and those which would emphasize the facilitation of the development of affordable workforce housing of both tenure types. For the most part federal, state, and federal-state cooperative programs for both renters and owners are targeted towards the lowest end of the household income scale and provide assistance to households that may or may not necessarily include wage earners. With some exceptions,[37] these programs also tend to provide assistance directly to households, and serve household income categories that may or may not be in the "sweet-spot" for work force housing initiatives. As such, while the housing affordability challenges of the lowest household income categories have a number of existing, well-developed programs providing services, the mostly higher than the lowest range of household incomes categories impacted by workforce housing affordability challenges appear to currently be underserved. In combination with the existing programs' more general focus on providing services to individual households, there may be an opening for a more coordinated, harmonized policy response; emphasizing the needs of groups of households with similar housing needs related to the dynamics of the Town/regional labor force.

For the Town, the underserved household income categories include those between the 50% of the median and 120% of the median household income levels. For those working households—many of whom would be viewed as "middle class working households"—additional program assistance to assure affordable workforce housing appears needed,[38] even though earnings levels of those working households will generally not allow them to find affordable housing within a reasonable commuting distance of their work place.

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[36] See https://www.osc.state.ny.us/reports/housing/affordable_housing_ny_2014.pdf#search=%20housing.

[37] Such as the Low-Income Housing Tax Credit Program which has had some historical program activity in the Town.

[38] Again, this is not to say there are no programs that are offered to assist these household income groups as discussed above. However, they tend to not to be organized around the needs of households with workers.

While workforce housing strategies could be devised to begin to address that situation,[39] the policy environment for workforce housing policy initiatives has largely been left to local governments on the municipal and county level to initiate, design and implement such programs. The Town should also be very concerned about that policy vacuum because it is precisely those middle household income categories—the ones that could potentially benefit from a cohesive set of affordable workforce housing policies—that are the households this study found that are likely to experience the largest increases in affordability pressures over the 2017 through 2027 study period.

Summary of Policy Options-Opportunities.

When undertaking this study, the EPR-CA Team understood that this study followed a significant body of past work in the community on a number of topics that were close to, but not always "exactly on point" when it came to the affordable workforce housing issue. Even so, it was important for this study to utilize, and when possible build upon, this past body work. As a result, we spent time reviewing the Town of Queensbury Affordable Housing Strategy that was completed back in December of 2003. Our team also consulted the Town's Comprehensive Plan (as noted above) in order to get a sense of the community's collective vision and how residents suggested that the Town realize that vision. We also reviewed the June 2015 "*Pathways to Progress: Charting a Course for the Adirondack Gateway Region*," which identified a number of affordable housing and other strategies that were thought to be important to the entire Adirondack Gateway Region's future. Throughout the study process, the EPR-CA Team sought to use every good idea, update whatever needed to be updated, and incorporate any relevant information from the past into its study.

Selecting the Right Recommendations for Queensbury

The recommended strategy options presented in this study for the Town's consideration come from the above perspective. In addition, the EPR-CA Team also made additions to the selection criteria for this study's recommended strategy options. The consulting team believes that any proposed strategy option should:

(1) Be collaborative with both existing affordable housing stakeholders and stakeholders with an interest in workforce housing[40]—who have demonstrated expertise and potential "skin-in-the-game" for workforce housing and related economic development issues;
(2) Leverage the Town's invested resources—in order to make the greatest impact possible for the Town's investment; and
(3) Emphasize incentives versus imposing mandated requirements (e.g. using a "carrot" versus a "stick" approach)—because using an incentives approach appears at this time to be the "best fit" for the facts on the ground within the Town.

[39] Sullivan, Wendy. *The Impact of Affordable Workforce Housing on Community Demographics, Economies, and Housing Prices and Options*. 2014.
[40] Such as key employers in the Town and MSA region.

With that context as background, this study recommends the following list of strategy options be considered by the Town.

Strategy Option 1: Re-focus/Re-orient the Town's Housing Rehabilitation Program to Adapt to Evolving Funding/Support Services Realities

Since the early 2000s, the Town has sponsored a popular housing rehabilitation program within the community for owner-occupied units that has completed the rehabilitation of roughly 115-120 units of housing. Over the years, the program has successfully leveraged federal and state funding programs and sources to undertake projects that were consistent with addressing the need for decent and safe housing within the Town, and particularly those parts of Town where the housing inventory is in need of rehabilitation and repairs.

The Town's program has historically focused on the rehabilitation of units' roofs, bathrooms, kitchens, electrical, plumbing, water systems and septic systems up to an allowed maximum dollar amount per project as prescribed by the requirements of whatever program (or programs) was (or were) funding the rehabilitation project. Over the years, the Town has sought to leverage its rehab projects' funding sources by combining them with other compatible programs. For example, projects were often undertaken in combined efforts with the weatherization program (which typically has been sent in first to thoroughly evaluate the condition and needs of the housing unit), and through leveraging the Town rehabilitation program's funds with funding procured from the State's HOME, the CDBG program and in conjunction with other eligible program funding from the New York State Affordable Housing Corporation. This leveraging strategy sometimes allowed the Town's program to provide funding for more challenging rehabilitation projects with funding needs that would potentially exceed the usual per unit caps available from each individual program funding source by themselves.[41] Because of the Town rehabilitation program's emphasis on supporting decent and safe housing, the program has historically steered away from homeowner requests that were primarily aesthetic in nature—such as undertake repairs of landscaping retaining walls.

Since the beginning of the Town's program, rehabilitation projects have been accomplished with the assistance of a third-party contractor (Shelter Planning & Development) with program management and oversight provided by Town Community Development Department staff. The third-party contractor provided program support services in the form of: (1) grant writing, (2) grant administration, and (3) working directly with contractors and participating households to complete the rehabilitation work on the unit. The Town was able to have a successful program by leveraging its scarce staff resources with a knowledgeable and competent partner who was willing to raise grant funds and accept the level of administrative support provided from those grants as adequate compensation for their providing the Town program's necessary support services.

[41] The Town also has a revolving loan program for funding subject to proper terms (including security).

However, over time the State has not increased the funds allowance to reimburse the Town's third party contractor for the administrative costs associated with meeting the requirements of the State funding program. Shelter Planning & Development ceased operations in 2018, and it currently appears that no other private consulting firms in the greater Capital District area provide the full level of support services that the Town has historically utilized in its housing rehabilitation program. As a result, the Town must make alternative arrangements to obtain the full scope of program support services that it had built into its program execution if the Town desires this program to continue.

The Town essentially has two options to re-direct/re-focus this program: (1) find another outside third party able to provide grant writing, grant administration and project delivery services within the financial constraints of available grant administrative cost allowances, (2) develop the in-house capacity, supported by a possible Town-sourced appropriation, to provide all of the same program support services and program administration that have historically been provided by third party providers. The second alternative does not seem consistent with the Town's historical approach to the program or the "facts-on-the-ground" within the community. While the first option may still require some additional investment of Town resources—at least to re-direct or re-focus the Town's program over the short-term—this seems more consistent with the Town's historical approach to this successful program.

As such, this Strategy Option recommends the Town undertake a two-part effort to pursue funding and reach an agreement with a strategic partner to fill the support services role with the Town that has historically worked for the program. We are aware that Town Community Development Department staff has had initial contact and conversations with at least one regional non-profit organization that would be a candidate for meeting the required support services role. The EPR-CA Team therefore recommends that such a strategic partnership be pursued and a necessary support services agreement be achieved in order that the program be continued at its past historical activity level. In addition, the Town should fully explore any and all alternatives for similar leveraged, partnerships with potential providers of support services in programs that may address only strategic parts of past rehabilitation efforts that are a part of the Town's existing program.

One option in this regard may also include the examination of opportunities for the Town and perhaps other nearby municipalities to explore the development of a CDBG program based solely on replacement of failing on-site wastewater systems for income-eligible single-family homes—even if it means the Town applies for funding to do fewer than the usual 12 units per grant request. Town staff knows of a limited number of candidate opportunities under such a program within the Town. We recommend that the Town have the Community Development Department staff work with the State to see if an appropriately-scaled program could developed to meet the Town's needs in this regard. This effort could be undertaken within the context of the development of an evolved rehabilitation program that would meet the funding and services requirements so that it could operate effectively within the changed administrative support financial landscape that the Town finds itself today.

The EPR-CA Team believes this option would be consistent with the evaluative criteria specified above for strategy options. Continuing this current rehab program (with necessary modifications for today's changed administrative, support services, and funding circumstances) builds upon an existing idea and experience-competence, would be collaborative and leveraging in nature, and would certainly be consistent with the Town's vision and goals as articulated in the comprehensive plan.

Strategy Option 2: Use the Power of the Town's Zoning—Including Planned Unit Development Zoning (PUD)—to Encourage Quality-of-Life Enhancing, Non-Intrusive Workforce Housing Development

The Town's affordable housing strategy back in December of 2003 identified a number of zoning-based strategies that could be employed by the Town to encourage the expansion of affordable housing overall within the community.[42] The zoning analysis in the Town's Affordable Housing Strategy report identified opportunities to help expand affordable housing options in the Town using in the PUD process, and opportunities for using such well-known approaches as clustering housing, in-filling of units, and even the consideration of re-zoning of vacant land with access to public water and waste water so that residential development would be allowed on parcels as small as 20,000 square feet. Although the Town ultimately did not elect to move forward with those specific ideas, our analysis indicates that at least some of those approaches could be further developed and adapted to address the Town's affordable workforce housing needs.

We recommend that the Town consider allowing increased unit densities within the parts of the Town that could accommodate such projects in an unobtrusive manner. The areas of the Town, where increased densities would be allowed, would ideally utilize existing public water and waste water systems, and would have proximity to public transit and other infrastructure capacity within the Town. One specific policy option in this area would encourage (e.g. allow) projects to have higher unit densities per project by allowing housing developers to add units through density bonuses to a project. Density bonuses, if structured properly, can encourage more affordable units by allowing projects to spread their fixed costs of development-construction[43] across larger numbers of units in a project thereby lowering per unit costs (This is analogous to a "carrot approach"). The carrot approach is in contrast to policy options in the "stick approach" category where the Town could impose requirements that a certain percentage of units be at price points or rent levels that are "affordable" without allowing projects to include additional units overall in a project. Mandating that a certain percentage of units in a project be affordable without allowing for greater unit density would not increase the financial return or lower per unit costs for a project as a natural financial outcome. In fact, requiring a certain number of units to be "affordable" by requirement without allowing for greater unit density, many times can add significant costs to the remaining units of a project that are not required to be "affordable."

[42] See Town of Queensbury Affordable Housing Strategy, December 2003, pp. 40-43.

[43] For example, including project infrastructure cost categories such as roads, paths, utilities, and landscaping.

The EPR-CA Team's suggested approach is grounded on the premise that the use of incentives is more in keeping with the current and near-term market demand and current market supply conditions within the community on the ground. Any bonus of unit density would require an assurance that the units would be reserved for households with household income at or below 80% of the median. Whether or not this will require additional administrative time from the Town will depend on the strategy chosen and the administrative process used to implement it. If the Town does elect to pursue policies in this area, there will clearly be some accompanying administrative burden. The implementation procedures of any strategy must be customized to the municipality's needs and desired outcomes and be consistent with the Town's fiscal capacity to support additional appropriations and/or the re-programing of current fiscal resources to support a credible program. There is no set formula for estimating the scale of these additional or re-programmed resources. Crafting the right procedures and recommending a resource commitment to the Town's legislative appropriators could be part of the role of the prospective Workforce Housing Advisory Committee or Commission as recommended herein.

The EPR-CA Team's review of the Town's situation indicates that the Town could benefit from the full exploration of the "pros and cons" of possible zoning changes to encourage workforce housing such as allowing for:

- The conversion of apartments to condominiums;
- For accessory dwelling units;[44]
- Smaller square footage dwelling units on smaller than currently allowed parcels; and
- Cottage Housing complexes.

We recognize that one of the more important considerations under this strategy option is a model list of criteria that a prospective project would need to meet in order to be considered as an "affordable workforce housing project." This list of eligibility criteria should reflect a consensus of a broad number of interested stakeholders in the community and be limited to only appropriate areas within the Town's many different neighborhoods and areas. One of the most important of the criteria for appropriately targeting the Town's workforce housing needs is for owner units and renter units to reflect the proper price points (for owner units) and rent levels (for renter units). This study found, based on the study's calendar year 2016 base year, that the proper price points for owner housing were between $194,255 (which is affordable at 80% of the Town median household income category) and $252,125 (which is affordable at 100% of the Town median household income category), and monthly cash rents of between $762 (which is affordable at 80% of the Town median household income category) and $957 (which is affordable at 100% of the Town median household income category). The EPR-CA Team suggests that the other workforce housing selection criteria be developed through a consensus process as part of the deliberations-research agenda of the prospective Workforce Housing Advisory Committee or Commission (see Recommended Strategy Option #7—below). We also recommend that the Workforce Housing Advisory Committee or Commission work with Town staff and other stakeholders in the housing

[44] Also known as granny flats, in-law units, and so-called backyard cottages.

community to develop a recurring schedule for establishing these price points and rent levels each year and update the study's price point and rent level calculations for the 2017 calendar year.

The EPR-CA Team recognizes that adopting zoning changes that would encourage higher housing unit densities in certain parts of the community might appear on the surface to run counter to the longstanding unit density bonuses currently provided in the Town's subdivision regulations where project applicants-sponsors make efforts to preserve open space and improve recreational amenities. However, increasing unit density above those already allowed[45] is not only key to having such workforce housing units priced or rented at affordable levels, it also is consistent with encouraging the type of higher density housing that discourages settlement patterns where units are developed on the periphery of the Town where land prices are lower and are farther away from the Town's and region's employment centers. In that way, increasing density can be a useful tool for encouraging the type of settlement patterns related to future economic and population growth that would actually help preserve the Town's open space assets and high-quality recreational assets.

At the same time, more compact development would also help in developing the type of population density that would encourage the expansion of transit options—which we believe is an approach consistent with the vision and objectives of the Town. A specific transit plan is not explicitly mentioned in the Queensbury Comprehensive Land Use Plan of 2007, mainly because transportation planning for the region is completed by the regional MPO,[46] the Adirondack/Glens Falls Transportation Council. Nonetheless, transit preferences and options that encourage workforce housing development can and should be written into the Comprehensive Plan to help guide the regional Transportation Improvement Plan (or the so-called regional "TIP"). The Town has the opportunity to utilize its membership on such regional planning entities to coordinate its workforce housing policy development efforts with complimentary projects pursued through those organizations.[47]

Within this broad strategy option is also a number of other potential zoning-based sub-strategies that are worthy of consideration by the Town. These include changing (e.g. reducing) the current size requirements for units and parcels, allowing for so-called "cottage housing" development,[48]

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[45] See sections 179-179-12-020(C) and 179-12B-020(C) of the Town's Zoning Code.

[46] The term "MPO" means Metropolitan Planning Organization, which is a federally-designated regional planning body in charge of a federally-designated region's long-term transportation planning and the federal funding used for transportation system development and maintenance-support.

[47] Such regional planning agencies also includes opportunities to support the Town's efforts with the Lake Champlain-Lake George Regional Planning Board as the regional organization that spearheads the region's Comprehensive Economic Development Strategy (or "CEDS"). The regional CEDS offers an opportunity for the Town to make sure key infrastructure projects are listed and potentially competing for federal funds to support infrastructure needs to support work force housing in the Town. For example, one potentially helpful area for federal CEDS dollars might be support for waste water infrastructure improvements to allow for higher unit densities within areas of the town served by the Town's waste water treatment plant in Glens Falls.

[48] Cottage Housing is a type of coordinated neighborhood design where a group of small, single-family housing units are clustered around a common area with shared amenities. The shared common area is typically used to allow for higher unit densities that are allowed in typical single family neighborhoods. In some municipalities, this has recently

zoning changes that would allow for apartment units to be converted to condominiums, and allowing workforce housing projects to receive expedited application consideration-review by the Town.

At this early stage of the evaluation of strategy options, the EPR/CA Team believes it remains premature to suggest specific implementation procedures or specific legislative changes for any of the above options until a broader policy consensus has been reached within the community. There are a number of possible options that could be employed to increase unit density that the Town should decide upon before evaluating specific zoning or PUD language designed to implement those options.[49]

Strategy Option 3: Modernize Zoning for a More Resilient Economy

Another strategy option recommended for further evaluation includes possible zoning changes that would allow for a wider range of residential development within the Town by permitting more housing in areas that have not traditionally been thought of for residential development. Based on site visits and the project's interviews with a broad group of informed stakeholders, it was found that the Town has an opportunity to modernize its zoning for the "new economy." A review of the Town's current zoning policies promote a land use and development pattern that promotes an economy, market demand, and lifestyle of past generations. The zoning document facilitates auto-dependent and single-use development patterns currently demonstrable throughout the Town.

Looking forward, the rise and fall of urban shopping centers will be driven by the experience that shoppers are demanding. Mobility and shopping are closely linked; in the 1970's there were far fewer cars and people on the roads. What was once convenient in our retail experience, is now a struggle as roads become clogged, wider, and more difficult to cross. Parking standards create parking lots that are an exercise to cross and an aesthetic scar on the landscape. A Credit Suisse report from 2017[50] estimated that approximately twenty to twenty-five percent[51] of America's

been employed as an "in-fill" strategy which hopes to reduce costs to households versus traditional single family housing while minimizing the impact of higher unit densities on adjacent neighborhoods.

[49] However, we have included "model language" for some of the options listed above. For example, we include sample density bonus language and other model language (in Appendix F) that we hope will be useful to facilitate policy discussions for the Town's evaluation process in this regard.

[50] See Apparel Retail & Brands—Making Sense of Softlines Following a Tumultuous Twelve Months, May 2017. Credit Suisse.

[51] Corresponding to roughly 220 to 275 of the U.S.' roughly 1,100 shopping centers.

malls will close within the next 5 years. This is because of the growing demand for a more walkable, user-friendly shopping and activity-based experience (known as "A-Center" locations[52]) and the increasing share of total retail sales accounted for by e-commerce based retail activity.

The Town's zoning that allowed for large scale surface parking, and required wider roads resulted in the land use patterns that are observed today in the NC, CI and CM zones along Routes 9, and 254 (Quaker Road). If these properties follow the fate of national trends, then their values will decrease.[53] Even if realtors, developers and owners continue to achieve their occupancy goals, the value differential between these properties and a land-use pattern more appealing to a 21st century lifestyle will grow. A more modern shopping experience is less dependent on physical shopping and more geared toward socializing and entertainment in a visually-pleasing and walkable experience. A large part of what is missing in the zoning documents for these areas of the Town is the allowance of mixing commercial and residential uses. An increase of residential development in these areas will increase supply and open more housing options for the Town's and region's workforce. In addition, the workforce could be closer to their jobs and reduce the demand on transportation infrastructure.

The Town can use the power of zoning policy to incentivize the conversion of the Town's shopping centers to a more modern and valuable urban landscape. In doing so, the conversion will open up mixed-use development opportunities and include housing units for multiple income levels. To do this will require a thorough review of the zoning documents and extensive public process. The EPR-CA Team suggests the Town undertake such a review and, if warranted, an extensive public process to implement this zoning modernization.[54]

As mentioned above, it should again be noted that the Town's Comprehensive Plan was completed in 2007, or more than 11 years ago, and is likely in need of an update. A logical vehicle for undertaking a zoning modernization effort to assist in modernizing the Town's retail economy would logically be within the context of a full update of the Town's 2007 Comprehensive. The State of New York requires that all zoning be in accordance with local comprehensive plans. Since

[52] With less retail and more eateries and entertainment offerings.

[53] Conversely, according to an August 2009 study entitled "Walking the Walk, How Walkability Raises Home Values in U.S. Cities;" Joe Cortright; Impresa, Inc.; each additional walk score point resulted in home values increasing between $500 and $3,000.

[54] As mentioned above, we note that the Town's Comprehensive Plan was approved in 2007—or more than 11 years ago. We note that a logical vehicle for undertaking a zoning modernization effort would logically be within the context of a full update of the Town's 2007 Comprehensive Plan.

Queensbury's 2007 Comprehensive Plan did not at that time envision modernizing shopping centers as discussed here, it may be difficult to simply rewrite zoning to accommodate the suggested approach. While it is possible to rewrite zoning without an updated Plan, the Town may be at risk of a legal challenge from groups opposing such conversions.

The following resources are listed here to learn more about shopping center conversions and the rewards and challenges associated with them:

- The Sprawl Repair Manual; Galina Tachieva; Island Press; (ISBN-13: 978-1597267328)
- Ten Principles for Rethinking the Mall; Urban Land Institute (April 2006); Available online at https://uli.org/wp-content/uploads/ULI-Documents/Tp_MAll.ashx_.pdf
- Retrofitting Sprawl: Addressing Seventy Years of Failed Urban Form; by Emily Talen; University of Georgia Press (April 2012)
- Walkable City Rules: 101 Steps to Making Better Places; by Jeffrey Speck; Island Press; ISBN-13: 9781610918985 (October 2018)
- Rezoning Urban Retail Strips to Create Neighborhood Centers; Tony Smith (American Planning Association Publication)

Strategy Option 4: Undertake Steps to Facilitate the Funding and Completion of a Collaborative and Detailed Housing Market Preference Study

This study suggests that the Town consider working collaboratively with the key stakeholder groups in the county (e.g. the EDC Warren County, the Adirondack Gateway Council, the Southern Adirondack Realtors Association, etc.), peer municipalities in the county, traditional affordable housing stakeholder organizations (e.g. members of the region's well-engaged housing non-profits) throughout the region, and key private sector stakeholders (e.g. key regional employers and construction firms that might be part of the constituency for this study to construct units for the housing inventory) to commission and fund a regional market preference study[55] to provide critical information on how to distribute countywide demand for housing by different market segments. It will also provide a level of housing market details that has not been generated previously for the region. While this study provided detailed analysis of future housing market demand by tenure and affordability, there are many micro-market details that are currently unknown that would be identified and quantified by the study.

The study would be an important next step to furthering the actual development of affordable workforce housing in the Town by providing private developers and potential non-profit partners with detailed market information of consumer preferences that could be used to determine product preferences by key the market segments that play a role in encouraging a smoothly functioning Town and regional housing market with an eye towards product that enables affordable workforce housing—directly and even indirectly.

[55] Including detailed market preference data by municipality, tenure and type.

Based on the EPR-CA Team's more than 25 years of experience with housing supply and demand studies, we have found that a typical housing lifecycle has five stages:

(1) The housing life cycle starts with young renters who after a few years start to earn more income and enter into their second phase;
(2) This involves the household either renting single family attached units like condos or townhouses with one or two bedrooms, or buying the same;
(3) In the third phase of the lifecycle, households create families and their demand preference for space increases, and they move again to a larger home;
(4) Fourth, when the household's children leave, and become young renters themselves, and the "empty nest" household (often a couple) starts to look for downsizing opportunities by looking into retirement communities or neighborhoods with smaller units similar to those they were in as young unmarried professional;
(5) Fifth, at this phase households tend to move yet again, either by choice or necessity, into a relative's home or accessory unit, an independent living facilities, or assisted living facilities.[56]

Within the Town and the greater Glens Falls region, aging population dynamics often mean that the last two stages, mostly the fourth, are being missed by the market. Our experience indicates that often in aging regional and municipal populations, healthy and independent seniors are not downsizing—many times because they cannot because the marketplace is just not providing the type of quality housing unit choice at price points and/or rent levels demanded in desirable locations. This, in turn, puts a greater strain on the existing stock to serve the current population. Increasing stock to serve the soon to be largest demographic group in the Town could potentially be essential to assuring a properly function regional housing market—and the ability to more efficiently provide affordable workforce housing options within the Town.[57]

A housing preference study would also ideally develop actionable market preference information regarding all other major market segments including young renters, households without children, and families by all age groups, tenures, and household incomes. By "actionable," the EPR-CA Team means sufficiently detailed and robust information that would support the use of this study as part of an application for debt financing from a local or regional lender or financial institution. Representative and appropriately detailed market segment demand-preference data might cover/include the following segments: (1) Unit types: Condominiums; townhouses; single

[56] The choice of an independent living unit or assist living facility is preferred when households have the financial means to do so and/or when living with family within the household's housing unit or in an accessory unit is not a viable or realistic option.

[57] This dynamic is also somewhat confirmed by 2016 American Community Survey data which shows a large number of households, headed by persons over sixty years of age, occupying higher than average priced owner housing units with the less than 2-person average household size. This implies there is a number of older, empty-nest households that could be looking to downsize—if they only had affordably priced and appropriate down-sizing options. This proposed market preference study could be helpful in confirming that dynamic—if it in fact is the case—and provide credible support for projects to obtain financing to develop projects designed to address this market condition.

family attached and detached, mobile homes and possibly other housing types; (2) Degree of Compactness: Number of units per building; yard sizes, density of neighborhoods; (3) Location: Proximity to the Town's high density housing neighborhoods that border with Glens Falls; proximity to services and entertainment options; (4) Public Infrastructure: importance of public transit, trails and/or sidewalks; road conditions, traffic, preferences for public sewer, private vs. public water; pedestrian mobility options; public recreation facilities; (5) Possible Interior design alternatives (e.g. including desired features by housing demand segment): such as the number of bedrooms and baths; bathroom amenities; kitchen amenities; storage; entertainment rooms; laundry; entrance way; garages, and (6) Exterior Design features: including patios, porches, decks, driveways.

This study would also ideally include a statistically robust market sampling method. Members of the Committee or Commission as recommended for consideration (see Strategy Option 5 below), members of the Town's building professionals, and Town and regional real estate agents should play a lead role in designing the market research questions. The study might include a section regarding the demand for seasonal housing units. However, at this point the EPR-CA Team believes the workforce housing emphasis of this effort means that the market preference study should primarily focus on units for year-round residents in and out of the workforce.

In short, a housing preference study is recommended to assist the Town in identifying the various direct and indirect approaches to helping expand the supply of affordable workforce housing. At times, some of the most effective strategies are those which address other short-comings-inefficiencies in the functioning of the municipal and regional housing market that then enable other actions that more directly address the target housing segment. Studies such as the one recommended, are often key to getting the industry in forward motion by supplying the type of market information developers need to design and obtain financing for such projects. The EPR-CA Team believes Town support, even possible coordination of the scope of services and grant-public-private sector funding support of such a study—would be another example of a collaborative, leveraging strategy that would facilitate a very important foundational piece of research that would accelerate the development of critically important housing supply at the right price points and rental levels in the Town.

Strategy Option 5: Consider Undertaking a Unique Collaborative Project Opportunity to Develop Affordable Student Housing to Support Full-Time Students at SUNY Adirondack Community College

The stakeholder interview process included a session with the President of SUNY Adirondack Community College and other key SUNY Adirondack staff, a Board member, and Town officials where there was discussion regarding a unique opportunity to provide an on-campus housing option for part of the roughly 3,000 students currently commuting to campus (of which over half are reported to be full-time students). SUNY Adirondack has an enrollment of roughly 3,400 degree students and currently only about 400 of those students (or less than 15% of the college's

total degree-student enrollment) are currently housed on campus. This current dynamic alone creates a strong source of demand for affordably priced housing in the Town.

From the discussion during the stakeholder session, it was reported by SUNY representatives-staff that its students often seek housing at distant locations from the campus in Queensbury in lower housing cost locales such as Fort Edward, Hudson Falls, and municipalities in Washington County that require significant levels of transportation expense for students.

In the past, SUNY Adirondack constructed and is now using the existing dormitory on campus utilizing a non-profit entity that was established specifically for the purpose of constructing student housing. During the stakeholder meeting for this project, representatives of SUNY Adirondack expressed an interest to work with the Town to develop a student housing project to house additional students on their campus. With available vacant land, a non-profit housing entity that was established for this purpose, and ample demand, indicated a willingness to go forward with the Town to build "a financially viable" project. The challenge for the school is finding the funding in times when higher education institutions are having difficulty raising cash for such projects.

Although this potential project is not exactly a workforce housing project, the EPR-CA Team believes this is an opportunity where a public/private/non-profit partnership may work well to facilitate a project in this situation. A partnership with a private sector developer can give the school the infusion of private capital that it needs. There are many issues that will need to be addressed to ensure the partnership works well for all involved. Therefore, this strategy option recommendation suggests that the Town act as a facilitator to help the parties come together in an agreement to pursue this opportunity.

The Town's participation in this potential project also could be used as a "low risk" means to establish the Town's affordable workforce housing processes and procedures, along with the policy development and staff/committee/commission resource infrastructure needed to implement the affordable workforce housing strategies contemplated by this study. It also could be helpful in further identifying all of the sometimes subtle linkages to other Town and regional initiatives that may be needed to fully support the community's affordable workforce housing initiative.

Further, the project also provides the opportunity for collaboration with a key community stakeholder, and has the potential for leveraging the Town's resource commitment that would be required for the potential project. When completed this could also be a significant contribution to smart growth. The smart growth attributes of the project include: the potential to reduce commuter traffic (and therefore congestion and transportation-related pollution in the Town through a reduction of vehicle miles traveled), the potential to provide the Town's commercial base with additional customers in an advantageous location; and the project could perhaps even add enough population density to provide further encouragement for expanded transit options within the Town. Although the proposed project may also require a zoning change, the process

for initiating such a change could be helpful in terms of a dress rehearsal for any affordable workforce housing-based zoning changes to potentially be considered in the future.

Strategy Option 6: Hold a Workforce Housing Summit

Throughout the writing and research for this Affordable Housing Strategy, numerous housing stakeholders were contacted. Their input and insight were invaluable to the completion of this study, and they all expressed an interest in staying involved in the Town's workforce housing efforts. The primary objective of this research was to: (1) identify the supply and demand for housing obtainable to households at different income levels; (2) identify the supply gap between the two; (3) forecast that gap into the future; and (4) present at set of recommended strategy options as next steps for the Town to consider in tackling the challenges posed by its workforce housing needs.

The prospective "Workforce Housing Summit" recommended here would use this report for the launching point for the summit. The stakeholders with interest in attending such a Summit are likely more savvy and know the intricate details of implementation in the Town. Collecting their group opinions is critical making recommendation viable and specific to the Town. This recommended summit is a simple first step in allowing more people to become involved. Attendance is very important to generate interest in developing solutions. Therefore, the EPR-CA Team suggests that the Summit not be advertised like most public meetings. Prospective attendees should receive personal phone calls, and be canvassed for their recommendations for the agenda and format. The date should be established well in advance with repeated follow up invitations, or even recruiting of key stakeholders' participation in the preparations for the Summit to help ensure good attendance at the event. The event should be between 4 and 7 hours long.

Strategy Option 7: Consider Creating a Workforce Housing Advisory Committee (or Commission) as the Central Coordinating Body to Oversee Affordable Workforce Housing Policies in the Town

To effectively implement any one or more of the recommended strategy options (above), the Town is going to need a policy assessment-analysis, decision, and implementation infrastructure to oversee and be a repository for the Town's policy development and implementation. The Town's continuing leading role within the county as an economic engine and as a current provider of a significant portion of the regional housing stock for the population of the greater Glens Falls region means it likewise has a leading role and responsibility in the provision of affordable workforce housing options in the region as the economy county's economy continues to grow. The Town will continue to play a similar central or leading role in the region's future growth dynamics either by default or design. As such, it is far better to actively accept a role in shaping events versus sitting back and simply accepting the outcomes of this future growth and its implications for the settlement patterns in the Town that such future growth implies.

The best way to effectively manage the implications of this potential future economic and population growth on the quality of life and the high quality recreational assets of the community

is to actively engage with stakeholders and design the full range of options necessary to assimilate this future development activity sustainably and with minimal impact of the community's "quality of life." While there are many independent private and non-profit entities operating within the region, there is no organization that coordinates these efforts for the common purpose of encouraging affordable workforce housing.[58] The Town appears positioned to fill that role and advance what looks to be a promising opportunity to fill an important municipal and regional policy vacuum.

Experience shows that the best and most impactful policy decision making on the local-municipal level is made with broad stakeholder representation, including an appropriate mix of advocates, users, and providers. It is therefore recommended that a number of credible representatives from all three of the above listed groups be represented. The Town's Community Development Department would be the ideal organization within the Town to provide staff support and resources for this effort. A new entity of this type, with a credible mix of stakeholders on the demand and supply side of the workforce housing issue, and with appropriate level of staff support would send the message that the Town is serious about effectively dealing with these issues and preserving the open spaces that its residents demand. This appears necessary to overcome a possible perception that the Town does not have a serious or emerging problem in affordable workforce housing, and to help overcome any residual public perception there will be no concrete action on the policy options listed in this study going forward, just like what happened in the Town following over the 15 year period since the 2003 study was completed—when only one strategy recommendation was actually implemented.

An initial beginning point for research and analysis for the Advisory Committee or Commission would be to fully research, analyze, and investigate the several tax incentives of the State of New York on the books that may prove useful to the Town's efforts to encourage workforce housing. Initial analysis indicated that a particularly useful resource may be the Exemption Administration Manual – Part 2 "Multiple Dwellings" Sections 4.07 for what may be available from the State to potentially help incentivize the production of workforce housing in the Town. The EPR-CA Team encourages a full and careful analysis of all potential options with applicability to the Town with the full participation of the Town Assessor.

As part of the above, a logical starting point for the prospective Committee's or Commission's work for the Town would be to work with the local-regional affordable housing stakeholder community to assure the Town efficiently and effectively is meeting the affordability challenges among its households at the lowest household income levels. To-date the majority of the Town's efforts in this regard appear to have been "more passive" in nature than what is being suggested below. The study's long-term forecast and forward-looking housing affordability estimates document that the next ten years is likely to bring intensifying housing affordability pressures across the lower and middle household-income categories. For example, this study found there

[58] During the course of this study, Town staff noted that although the Adirondack Gateway Council ("AGC") suggested back in 2015 that the AGC might play such a role regionally, the Town has not observed the AGC to-date taking on a regional role on housing issues.

is in fact a significant number of households that are currently housing cost stressed in both tenure categories among the lowest household income levels that could potentially benefit from such a collaborative project. An estimated 256 renter households at or below 100% of median household income for renters were housing cost stressed in 2016; another 585 households in the at-or-below-50%-of-median-household-income level in the owner category were also housing cost in 2016.

Currently, the region has a vibrant, well-developed and effective network of stakeholders that have a long track record of effective policies to address the housing affordability needs of households at the lowest household income levels. Based on our extensive stakeholder interviews during the study, this network has stated the desire to do more of what it is already doing and to undertake new projects designed to help address the Town's affordable housing needs within the traditional housing affordability program framework.

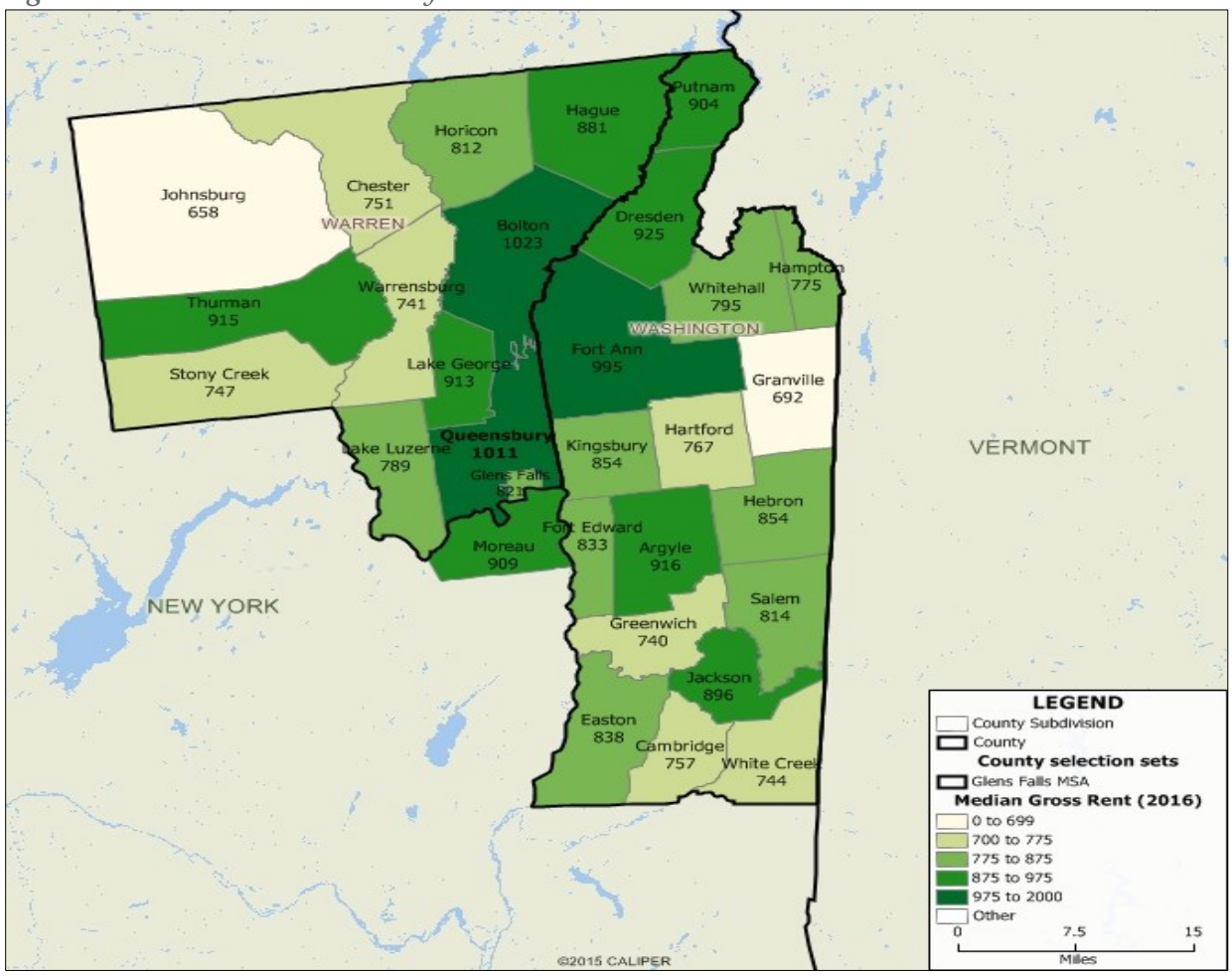
In light of the above, our final strategy option for the Town is to take a more active role in working with the regional low-income housing affordability advocacy stakeholders to more proactively and collaboratively address this worsening housing affordability situation. By collaborating with this well-established network of expertise, the Town will be able to leverage its resources, and at the same time expand capacity to take on the emerging workforce housing challenges where there is currently a policy vacuum.

Focusing some Town efforts and resources on the regional housing affordability challenges is supported by data from the 2016 American Community Survey regarding monthly gross cash rents paid by households in the Town, where Queensbury had the second highest median gross monthly rent in the entire Glens Falls Metro Area (see Figure 1.14 below). At the level of $1,011, the Town was second only to the Town of Bolton (at $1,023 in cash rent paid per month). As rental units are expected to continue to be an important and growing part of the Town's housing supply through calendar year 2027, taking a more proactive role in supporting the efforts of the existing affordable housing regional stakeholder network to continue to work on solutions to address these renter unit affordability issues is recommended. A more active approach to encouraging affordable housing (versus the current more passive approach) can be viewed as an important part of the strategic mosaic of policies that could be employed to address the Town's growing affordable workforce challenges.

This approach is recommended for a number of reasons. First, working with and encouraging these on-going efforts by the broader, non-profit affordable housing stakeholder infrastructure is consistent with the Town's regional role in hosting economic and population growth (and receiving the benefits of that growth). As such, this approach would help the Town meet its corresponding responsibility to participate in addressing the region's overall housing affordability challenges. Further, a participatory effort in this regard would enable the Town to utilize the competencies and leverage existing resources without having to develop duplicative expertise and programs on its own. This would be consistent with the proactive, collaborative, and leveraging type of approach to the strategy options this study recommends be fully explored.

Utilizing such an approach would enable the Town to more appropriately focus on the workforce housing issue where there is a significant policy void.

Figure 1.14 Median Gross Rent by Town in 2016



In addition, the stakeholder interview process found that there is in fact interest among more than one regional non-profit group to work collaboratively with the Town to build more affordable units within the Town. This interest seems to be a legitimate opportunity worth exploring with these groups and should be followed up on by appropriate Town representatives and staff. Any such project (or projects), after further specification and development, should move through the Town review process like any other residential project and should likely be sited in keeping with the character of existing neighborhoods so as to minimize potential negative sentiment that can complicate the actual development of such projects. Active Town participation in an affordable project (or perhaps even a few over the next 10 years) need not be neighborhood altering or detrimental. Active involvement can help assure that any and all such projects become an asset to the Town—which is far easier to do when it is a partner "at the table" in siting and developing such project opportunities—than if its role is more passive in nature.

A Final Word

The consulting team that undertook this workforce housing needs assessment study is just the beginning of the next phase of a long-term, living process within the Town to help make the community a sustainable, livable community consistent with the vision and goals as set forth by its Comprehensive Plan (discussed previously). As such, the investigative process started by the publication of this report is not yet finished. The data collection, analysis, and long-term forecast is completed. There are many interrelated development issues, policies, and history that brought the Town to its current housing status. The strategy options are based on the consultant's best interpretation of the findings combined with professional experience. We believe the Town would benefit with additional discussions and additional information coordinated though the Workforce Housing Advisory Committee (or Commission) as recommended above.

During this project, the EPR-CA Team held more than twenty hours of meetings and interviews with more than 20 stakeholders and groups operating within and knowledgeable about the broader affordable housing situation and the homelessness situation in the Town and region. One of the most prominent outcomes of the policy session was the need to continue this dialogue. Continuing those discussions and using the data and findings of this report is key to ensuring that future policy discussions use the best information and facts available to address these matters effectively.

2. Socioeconomic Trends

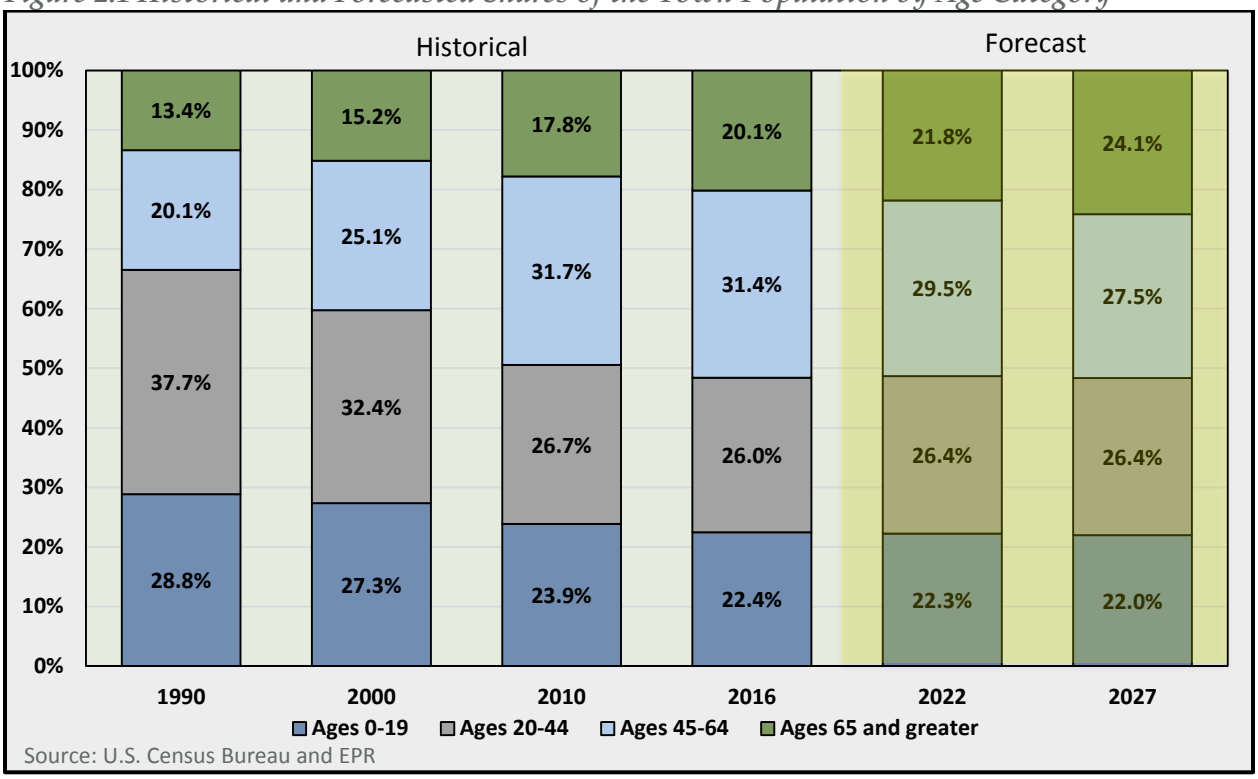
This study found that the population of the Town is aging, and it is likely to grow older over the next ten years. The median age of the resident population in the Town in calendar year 2016 was estimated to be 46.1 years, roughly half a year older than the whole of Warren County, 7.9 years older than the median age for the State, and 8.2 years older than the U.S. median age. Over time, the age category of the Town's residents aged 45 to 64 years and those aged over 65 years has been increasing. Meanwhile the Town's population aged less than 19 years has been declining.

The study found that this "graying" of the Town's resident population is likely to continue over the next ten years—similar to what is expected to occur in the Metro Area as a whole and within each of the two counties that comprise the MSA. Over the calendar year 2016 to 2027 time frame, the Town's resident population aged 65 years and older is expected to increase in share from 20.1% of the total to 24.1% over the calendar year 2016 to 2027 period—an increase of 4.0 percentage points. Many within the aged 65 years and older population category are "retirees." Though much of these gains in the Town's older population groups have been due to natural aging of the population, there also has been a net in-migration of "retirees."

As the resident population in the Town continues to age, the rising numbers of elderly residents will have significant housing implications. For example, the aging of the population is strongly correlated with declining household size which means there is likely to continue to be a decline in the number of persons residing in each housing unit in the Town (and Metro Area). Practically speaking, this means that the Town's housing stock will need to work harder and harder as the population ages to house the Town's population—even if the number of residents in the Town simply stays the same, much less increases as it is expected to do through calendar year 2027. In addition, the aging of the Town's population has implications regarding the need for additional units of transitional housing, the need for additional assisted living units suited for the needs of the elderly, and the need for additional bed capacity for nursing home care.

The aging population also can be important to driving demand and changing market preferences. For example, in some regions, an aging population means there is a developing need for additional high-quality, smaller square footage housing units that can be used for "down-sizing" purposes. This is particularly important for the Town if it desires its aging residents to have the opportunity to "age in place," and for the Town to have the opportunity to slow, or even reverse, its long-term "graying" trend.

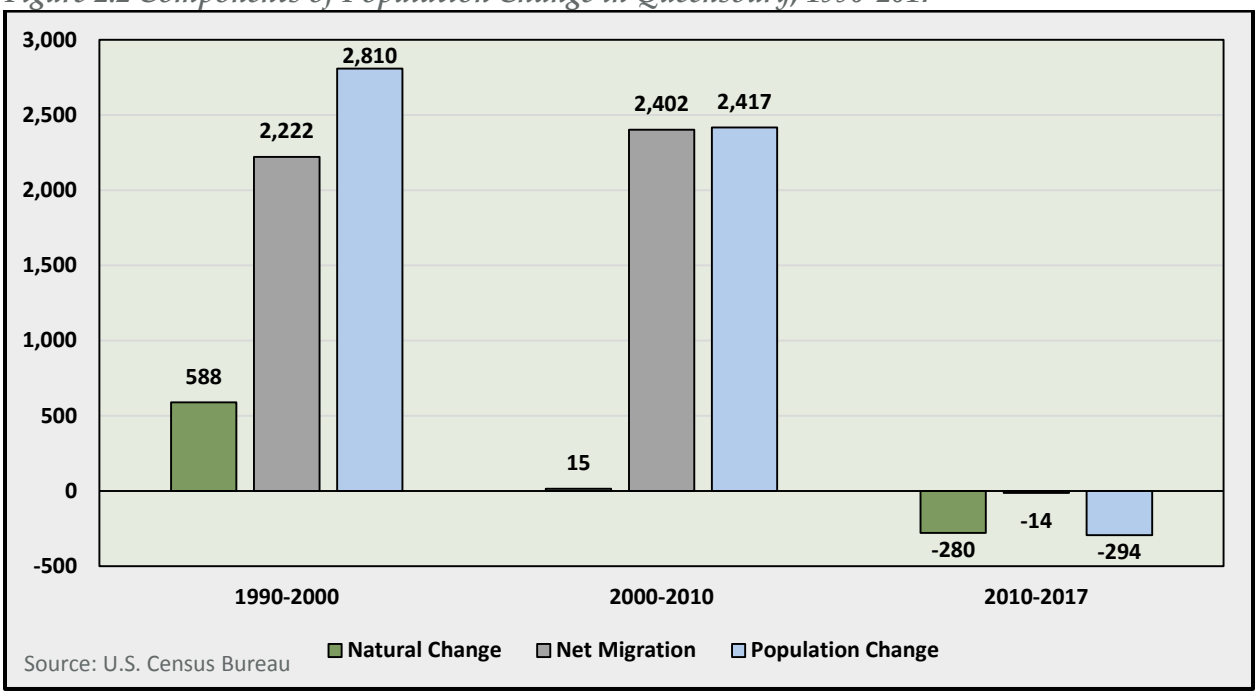
Figure 2.1 Historical and Forecasted Shares of the Town Population by Age Category



For most of the post-World War II period, the so-called "Post-War Baby-Boom" dominated the demographics of the nation as a whole—including upstate New York and other rural regions throughout the northeastern region. The Town was part of those demographic trends when post-war birth rates soared, and large families tied to a rising Middle Class were the norm. Over the last three decades, the population growth and recently the small declines in population for the Town during the 2010s, have been driven by an evolving mix of post-Baby Boom demographics—where smaller families have become the norm and when the population has been aging (see above). This clearly describes the evolving population change experience of the Town, when over the last 30 years the role of natural change in the resident population (which is determined by the number of births in the Town minus the number of deaths of Town residents) has shifted from growing the population to decreasing it.

The other element of population to consider is in- and out-migration. During the 1990s, the Town's population was driven by the combination of a natural increase in population (with 588 more births in the Town than deaths in the Town over the decade) with in-migration providing the rest of the Town's resident population growth (2,222 new residents or 79.1% of the total). During the 2000s, the net contribution to the Town's natural increase began to decline, and the decade ended with a smaller positive change to the Town's population due to the natural change, with virtually all of the Town's population growth due to net in-migration (see Figure 2.2 below).

Figure 2.2 Components of Population Change in Queensbury, 1990-2017



Since 2010, mid-year population estimates from the U.S. Census Bureau indicated that the natural change has turned slightly negative in the Town, with the number of deaths higher than the number of births. This has contributed to a net loss of -280 residents over the seven-year period between 2010 and 2017. Net migration, no doubt adversely impacted by the "Great Recession," changed from providing nearly all of the net increase in the Town's population growth during the 2000s to flipping to a small net population loss of -14 residents in the years since 2010. Since much of a region's population in-migration is tied to the performance of its economy, the leveling of population in-migration during a period that included a long and deep recession was not at all surprising.

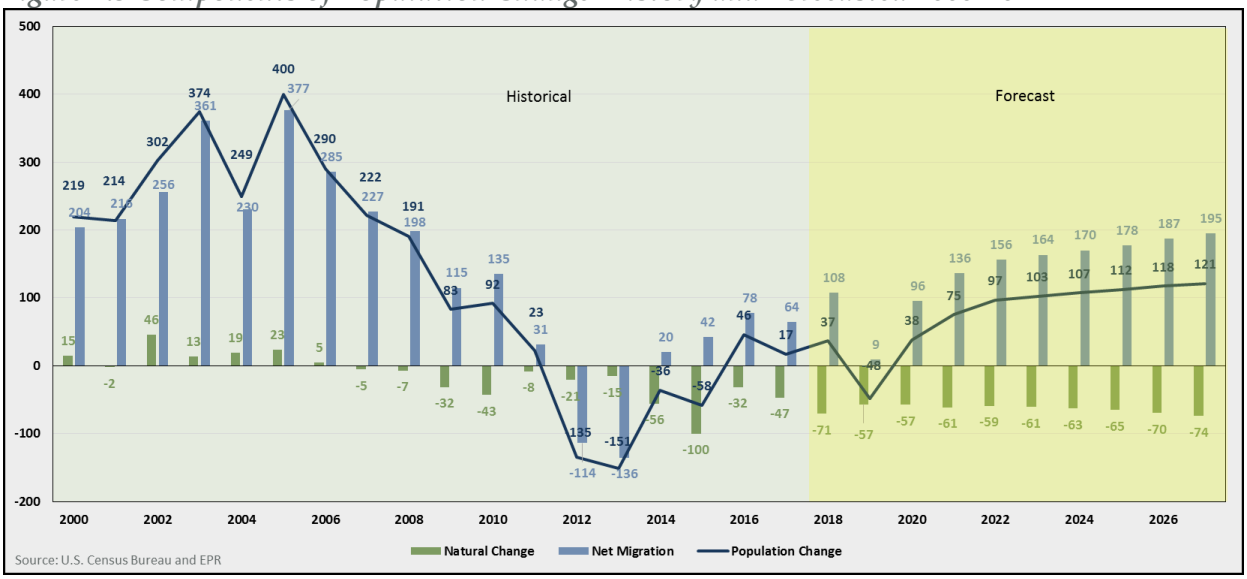
However, with the positive outlook through calendar year 2027 for the U.S.-regional economy, given the Town's ethnic make-up,[59] and considering the Town's graying population (see above), this study expects that the overwhelming majority of the Town's future population change will be driven by economic migration. Based on the study's long-term economic and demographic forecast (see Appendix B), we also expect that population in-migration over the calendar year 2017-2027 period will be positive and will be enough to push overall population growth in the Town back into positive territory by calendar year 2020 (see Figure 2.3 below).

This forecast has significant implications for the Town's (and region's) future economic performance, and all of the attendant policy issues (including labor force development needs and the workforce housing needed to support those labor market requirements along with impacts

[59] With a population that was 96.1% Caucasian as of 2016—with that demographic category's very low birth rates—according to the 2016 American Community Survey.

on local K-12 schools and higher education), and the environmental cross-pressures that many of these associated issues will prompt going forward.

Figure 2.3 Components of Population Change-History and Forecasted 2000-2027

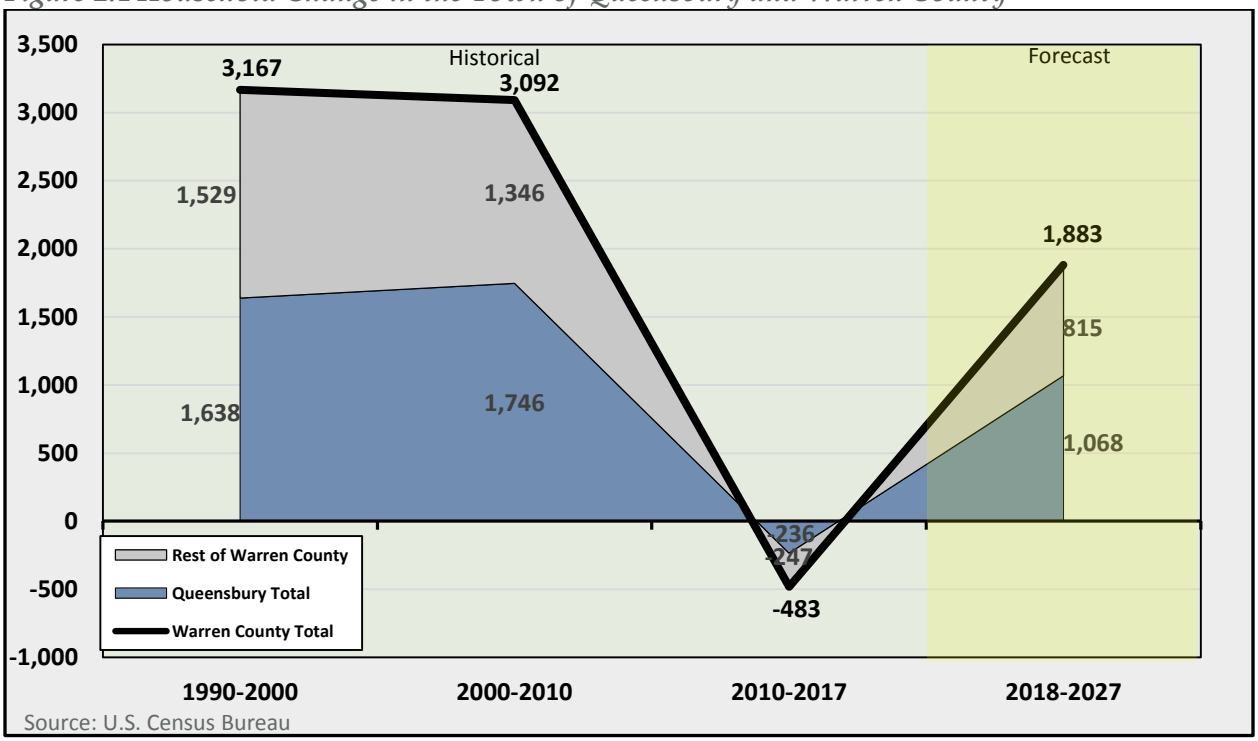


Over the last nearly three decades, the Town has played a leading regional role in hosting key regional employers and for providing housing to the regional population. During the 1990-2017 time frame, a total of 54.5% of total household growth in Warren County overall (and a total of 97.7 percent of population growth for the county[60]) was in in the Town.

This leading role is expected to continue over the study's forecast period with over half (or 56.7 percent of the county's expected 1,883 household growth over the forecast period) expected to occur within the Town (see Figure 2.4 below). Among the two principal housing tenure categories, the study's long-term forecast indicates that the Town is expected to account for 60.3 percent of the county's total owner household growth and 50.5 percent of the county's renter household growth over the 2018-2027 period.

[60] Largely because the Town lost less population over the 2010-17 period than the area in the county outside of the Town—which lost a significant number of residents.

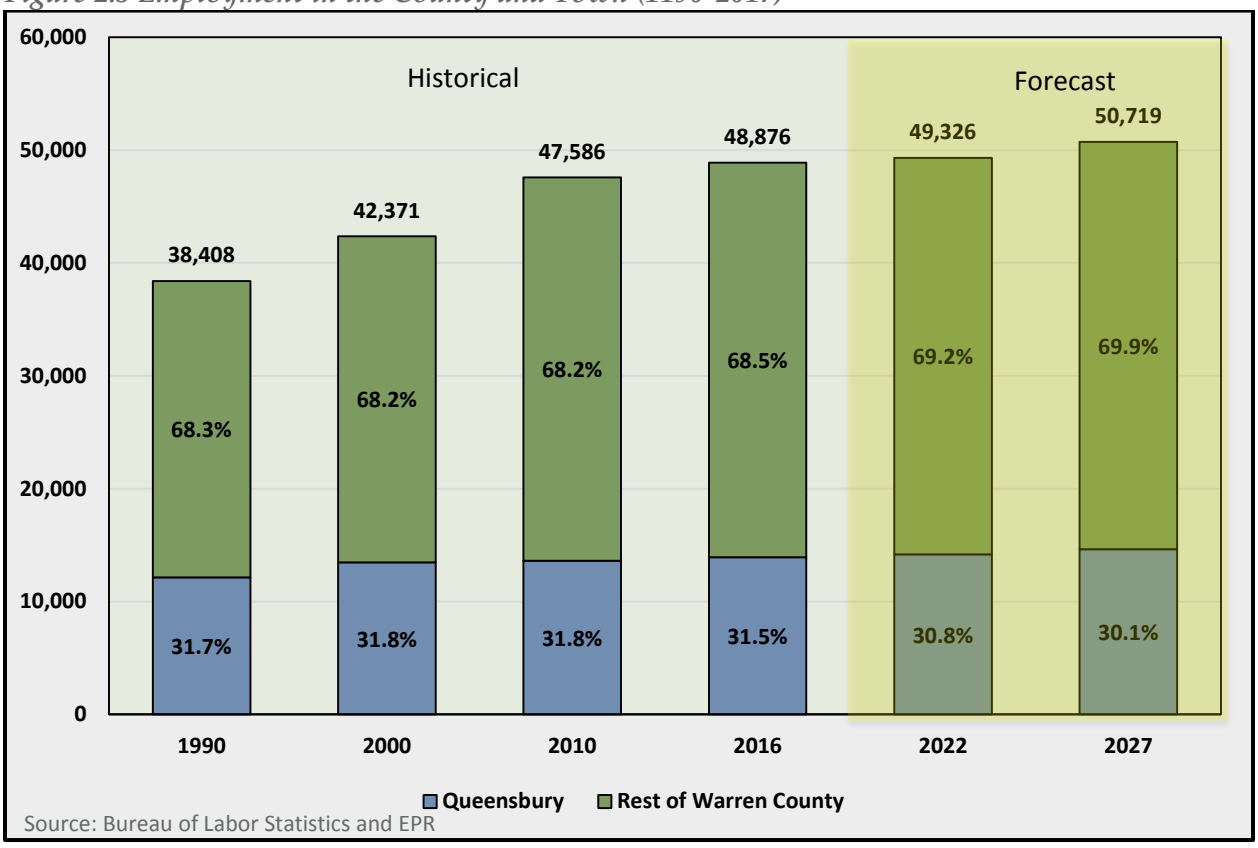
Figure 2.4 Household Change in the Town of Queensbury and Warren County



In the 1990s, total employment[61] in the town has remained relatively stable, then grew rapidly in the 2000s with peak employment over the period reached in 2008, with 15,388. Much of the region's employment growth occurred during the early 2000s, however the start of the next decade signaled actual losses in employment as the region experienced then recovered from the "Great Recession." Thus far during the latter half of the 2010s, employment growth in the town has plateaued at the same levels first observed in the early 2000s. The Town has also historically been a very large part of the total county employment though more jobs were added to the rest of the county in the late 2000's through 2010's. Our forecast calls for Queensbury to remain the largest employer in the County and to grow slightly in share over the forecast period as shown in Figure 2.5 below.

[61] Total employment used in this report is consistent with the Bureau of Economic Analysis ("BEA") series of full- and part-time employment. In addition to wage and salary employment, the BEA includes employment of proprietors; as well as farm workers and military.

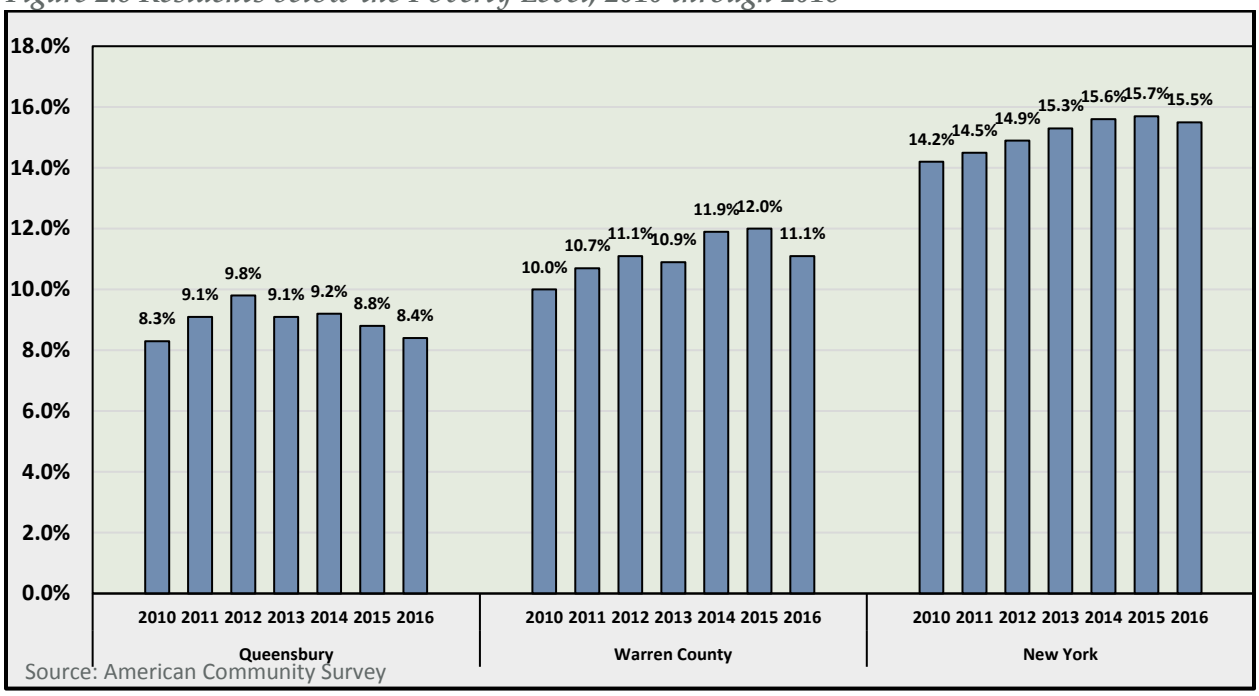
Figure 2.5 Employment in the County and Town (1190-2017)



Overall, the Town has played, and will likely continue to play, a key role in the region's population and employment growth over the coming decade. A stronger economic outlook is expected to draw more in-migration than has been observed in the wake of the "Great Recession". This economic in-migration together with the "graying" of the resident population will expand the need for transitional housing options and the need for additional high-quality, smaller square footage housing units that can be used for "down-sizing" purposes.

Figure 2.6 (below) sets forth the recent historical poverty data for the Town in comparison to the County and the State for selected years from calendar years 2010 through 2016. The statistics indicate that 2016 poverty levels for resident individuals range from a low of 8.4 percent in the Town, compared to the New York State poverty level of 15.5 percent. For resident children (under 18 years old), 11.6% in the Town fall below the threshold, compared to 21.9% statewide. Poverty levels have worsened somewhat for all three geographic areas since the end of the "Great Recession." Even so, the generally lower than the County average and State average levels of poverty in the Town appear to be a significant economic advantage for the Town—although no community wants to see even the Town's generally lower poverty rates sustained over time.

Figure 2.6 Residents below the Poverty Level, 2010 through 2016



Turning to the housing inventory for the Town, Glens Falls City, and the County, the majority of housing units within the Town has historically been single-family units, with over 78% being single-family units in 2000. When compared to other nearby communities, the Town over time has had a much higher concentration of single-family units.

In contrast, the City of Glens Falls over time has had one of the lowest percentages of single family units at just 50% of units. Over the past 16 years, more multi-family units have been added than single-family units, leading to the share of multi-family units in the Town growing significantly over that time frame. As of the 2016 base year for this study, there were approximately 9,802 single-family units in the Town along with 2,881 multi-family units and 520 mobile home/other units (see Figures 2.7 through 2.9 below).

Figure 2.7 Housing Supply in Queensbury in 2000, 2005, 2010, and 2016

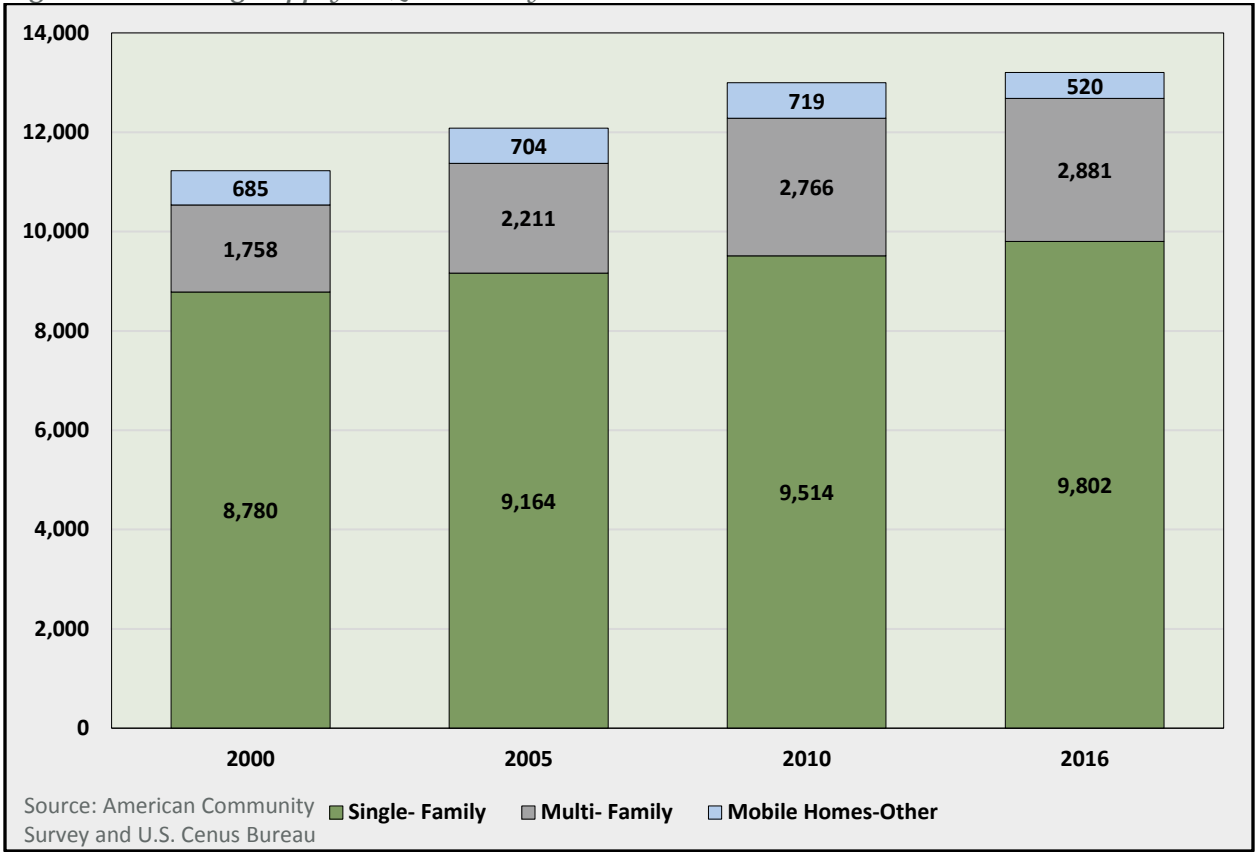


Table 2.1 Housing Supply in Queensbury, Glens Falls City and Warren County: 1990, 2000-2016

Year	Queensbury				Glens Falls City				Warren County			
	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other
1990	9,632	7,263	1,570	799	6,569	3,200	3,293	76	31,737	22,668	4,999	2,911
2000	11,223	8,780	1,758	685	6,811	3,373	3,421	17	34,852	25,703	6,687	2,462
2001	11,389	8,859	1,842	689	6,840	3,408	3,413	19	35,346	25,981	6,881	2,484
2002	11,558	8,937	1,928	693	6,870	3,444	3,406	20	35,648	26,117	7,040	2,492
2003	11,729	9,014	2,018	697	6,899	3,479	3,398	22	36,116	26,369	7,235	2,511
2004	11,902	9,089	2,113	700	6,929	3,515	3,389	25	36,625	26,649	7,443	2,533
2005	12,078	9,164	2,211	704	6,958	3,550	3,381	27	37,159	26,943	7,660	2,557
2006	12,257	9,236	2,314	707	6,988	3,586	3,373	29	37,692	27,233	7,880	2,579
2007	12,439	9,309	2,420	710	7,018	3,622	3,364	32	38,159	27,470	8,092	2,597
2008	12,623	9,378	2,531	713	7,048	3,658	3,355	35	38,414	27,553	8,261	2,600
2009	12,809	9,447	2,646	716	7,079	3,695	3,345	39	38,592	27,579	8,417	2,597
2010	12,999	9,514	2,766	719	7,109	3,730	3,336	43	38,726	27,569	8,565	2,592
2011	13,123	9,596	2,729	798	7,387	3,780	3,559	48	38,890	28,071	8,295	2,524
2012	13,170	9,622	2,758	790	7,595	3,920	3,669	6	39,004	28,442	8,355	2,207
2013	13,147	9,681	2,755	711	7,406	3,900	3,500	6	39,122	29,054	7,986	2,082
2014	12,964	9,603	2,682	679	7,507	3,708	3,795	4	39,265	28,986	8,228	2,051
2015	13,048	9,702	2,761	585	7,301	3,617	3,652	32	39,515	29,328	8,125	2,062
2016	13,203	9,802	2,881	520	7,230	3,613	3,605	12	39,793	29,388	8,399	2,006

Sources: US Census Bureau; American Community Survey *Prepared by Economic & Policy Resources, Inc.*

Table 2.2 Housing Supply in Kingsbury, Washington County, and Glens Falls Metropolitan Area: 1990, 2000-2016

Year	Kingsbury				Washington County				Glens Falls Metropolitan Area			
	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other
1990	4,673	2,922	1,805	256	24,216	17,310	4,445	2,461	55,953	39,978	9,444	5,372
2000	4,823	3,030	1,591	202	26,794	19,729	4,615	2,450	61,646	45,432	11,302	4,912
2001	4,902	3,085	1,621	196	26,970	19,950	4,648	2,372	62,316	45,839	11,508	4,855
2002	4,982	3,142	1,650	190	27,100	20,134	4,673	2,293	62,748	46,249	11,717	4,799
2003	5,063	3,198	1,681	184	27,332	20,393	4,715	2,224	63,448	46,662	11,930	4,743
2004	5,146	3,256	1,712	178	27,573	20,658	4,757	2,158	64,198	47,080	12,147	4,688
2005	5,230	3,314	1,743	173	27,806	20,917	4,798	2,092	64,965	47,501	12,368	4,634
2006	5,315	3,373	1,774	168	28,379	21,430	4,897	2,052	66,071	47,926	12,593	4,580
2007	5,402	3,433	1,806	163	28,543	21,635	4,923	1,985	66,702	48,355	12,822	4,527
2008	5,490	3,493	1,839	158	28,694	21,828	4,949	1,917	67,108	48,788	13,055	4,474
2009	5,580	3,555	1,872	153	28,790	21,979	4,963	1,848	67,382	49,224	13,293	4,422
2010	5,671	3,618	1,905	148	28,844	22,095	4,970	1,779	67,570	49,665	13,534	4,371
2011	5,751	3,651	1,957	143	28,994	22,108	5,021	1,865	67,884	50,179	13,316	4,389
2012	5,679	3,641	1,868	170	29,089	22,219	4,958	1,912	68,093	50,661	13,313	4,119
2013	5,572	3,573	1,803	196	29,233	22,421	5,022	1,790	68,355	51,474	13,008	3,872
2014	5,539	3,512	1,837	190	29,303	22,290	5,117	1,896	68,568	51,275	13,345	3,948
2015	5,458	3,377	1,894	187	29,377	22,066	5,201	2,110	68,892	51,395	13,325	4,171
2016	5,604	3,541	1,923	140	29,444	22,438	5,069	1,937	69,237	51,826	13,468	3,943

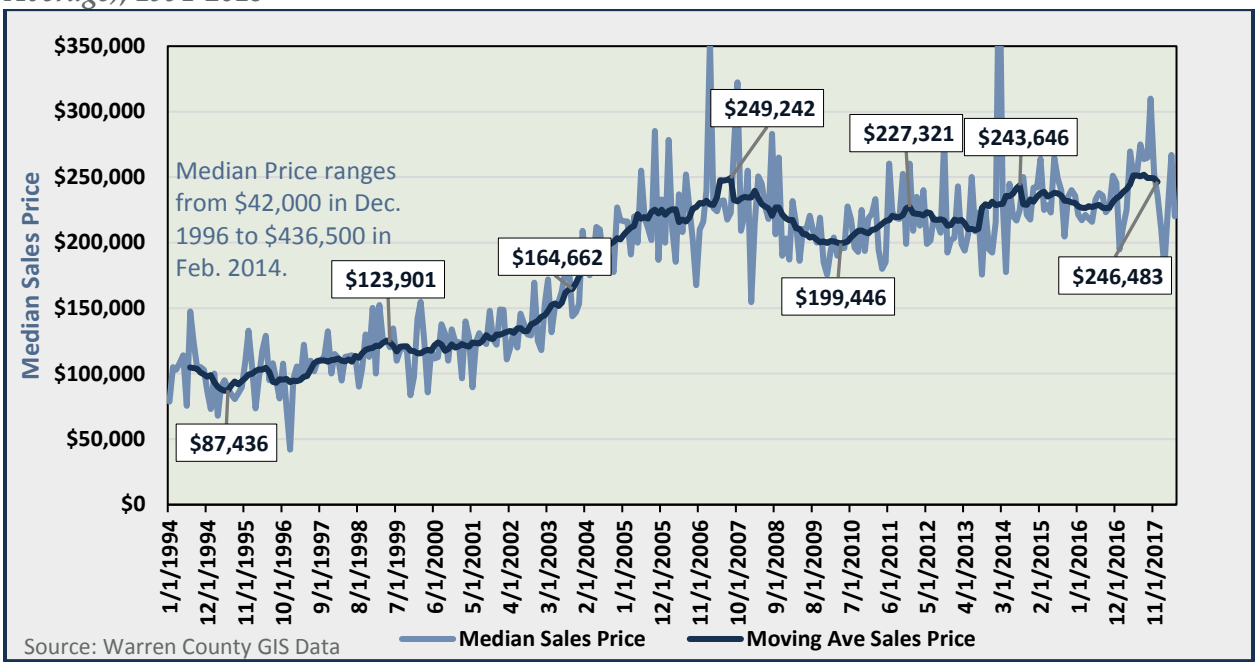
Sources: US Census Bureau; American Community Survey *Prepared by Economic & Policy Resources, Inc.*

The following figure shows the monthly median sales price and the number of sold single-family houses (as well as the 12-month moving average of each) in the Town from January 1994 to May 2018 based on Warren County GIS parcel data.[62] The data show the Queensbury housing market has experienced substantial change over the last twenty-five years. The 1990s were characterized by moderately increasing house prices. With the advent of increased incentives for homeownership and more relaxed financing requirements (including attractive sub-prime mortgage rates in some areas), the Town experienced rapidly increasing house prices as was the case for much of the nation through this period.

During the period that involved the "Great Recession," house prices experienced a significant, and in many respects, protracted decline. During the subsequent period of recovery through part of this calendar year, house prices have finally rebounded to the earlier 2006-07 peak. The chart below also shows significant seasonality in the housing market which is typical of most housing markets especially for highly localized markets similar to the Town's.

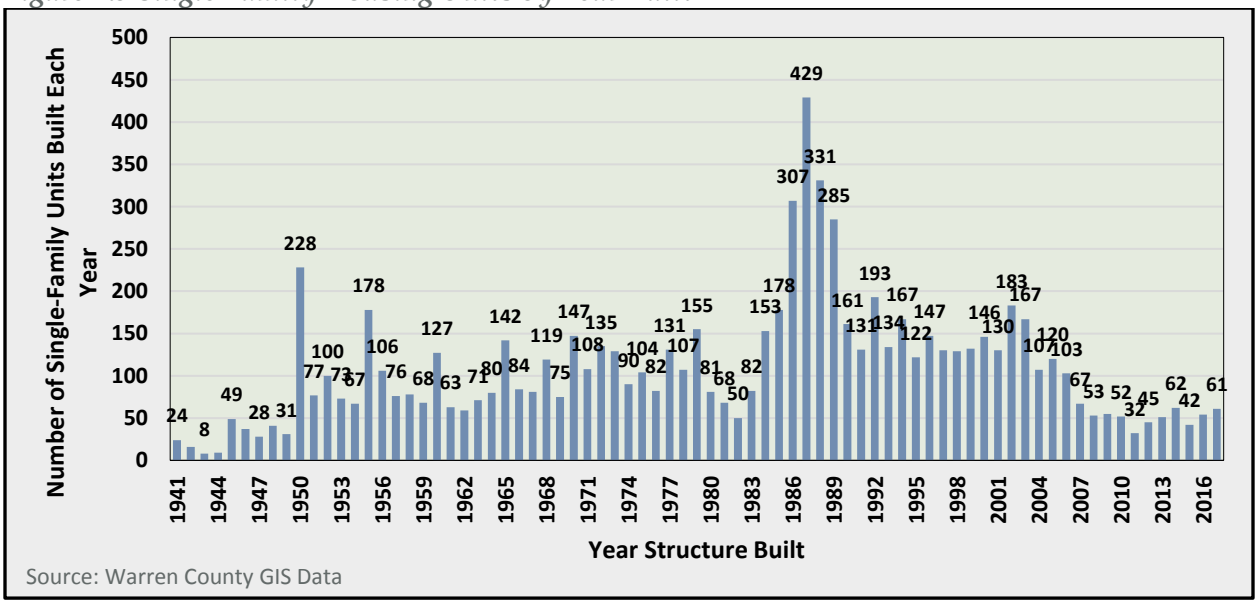
[62] An important caveat for this parcel data is a single-frequency rule; meaning if a house was sold more than once over this 1994-2018 period, only the most recent sale is reflected in the chart above. This rule results in underestimation of the number of homes sold as well as altering the median sales price in earlier years.

Figure 2.8 Monthly Median Sales Prices of Single Family Homes (and 12-Month Moving Average), 1994-2018



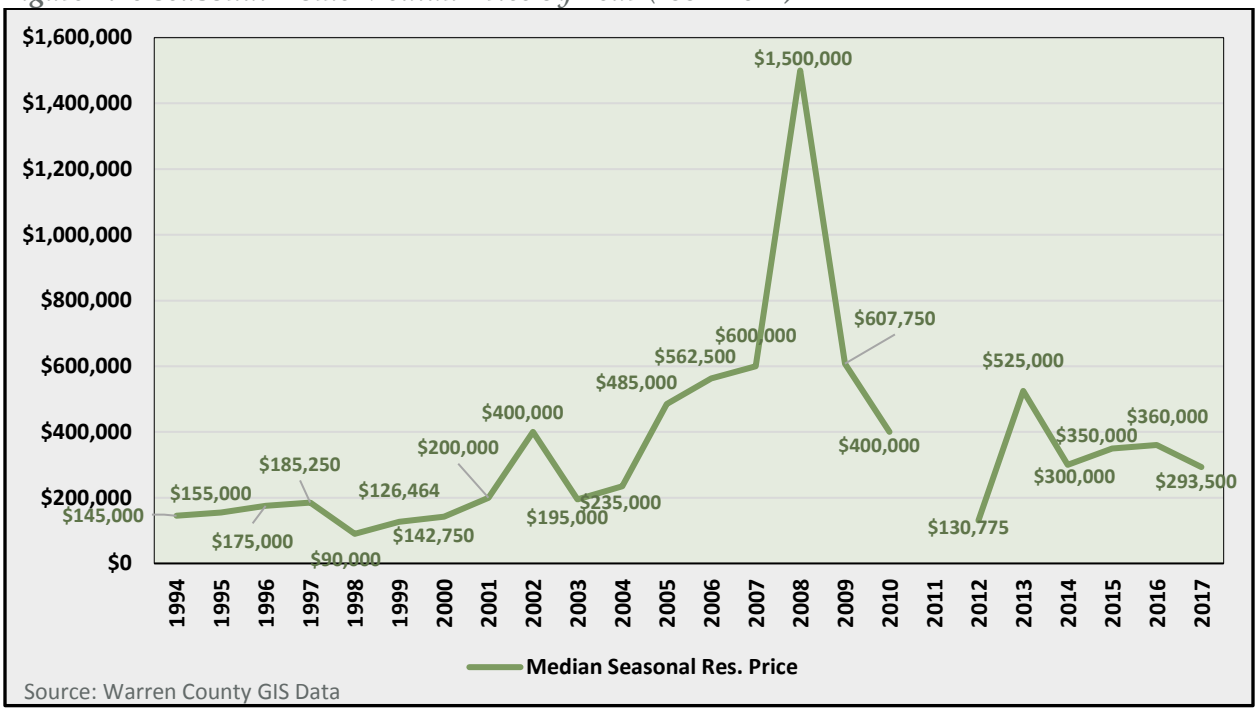
An analysis of single-family housing stock by year built shows a wide range of ages with some houses dating back to the late 1700s. The majority of existing single family housing units in the Town (more than 90%) have been built since 1941 (see figure 2.11 below). Following slower housing unit construction in the 1940s, the pace of construction quickened in the Town from 1950-1979, where the housing inventory grew on average by about 100 houses per year. During the mid-late 1980s, housing construction spiked in the Town with nearly 300 single family housing units added each year.

Figure 2.9 Single Family Housing Units by Year Built



During the 1990s and early 2000s, new single family housing units were added at a rate of 140 new units per year; following the "Great Recession", housing construction fell to its lowest levels since the 1940s. Overall, the data show that a total of 82.0% of the Town's total single family housing unit inventory was constructed prior to calendar year 1998. That metric indicates that more than 8 of every 10 housing units in the Town is at least 20 years old. A still very high percentage of housing units are currently more than 30 years old—at 64.6% (or nearly two-thirds) of the total single family housing unit inventory having been built over the period prior to calendar year 1988.

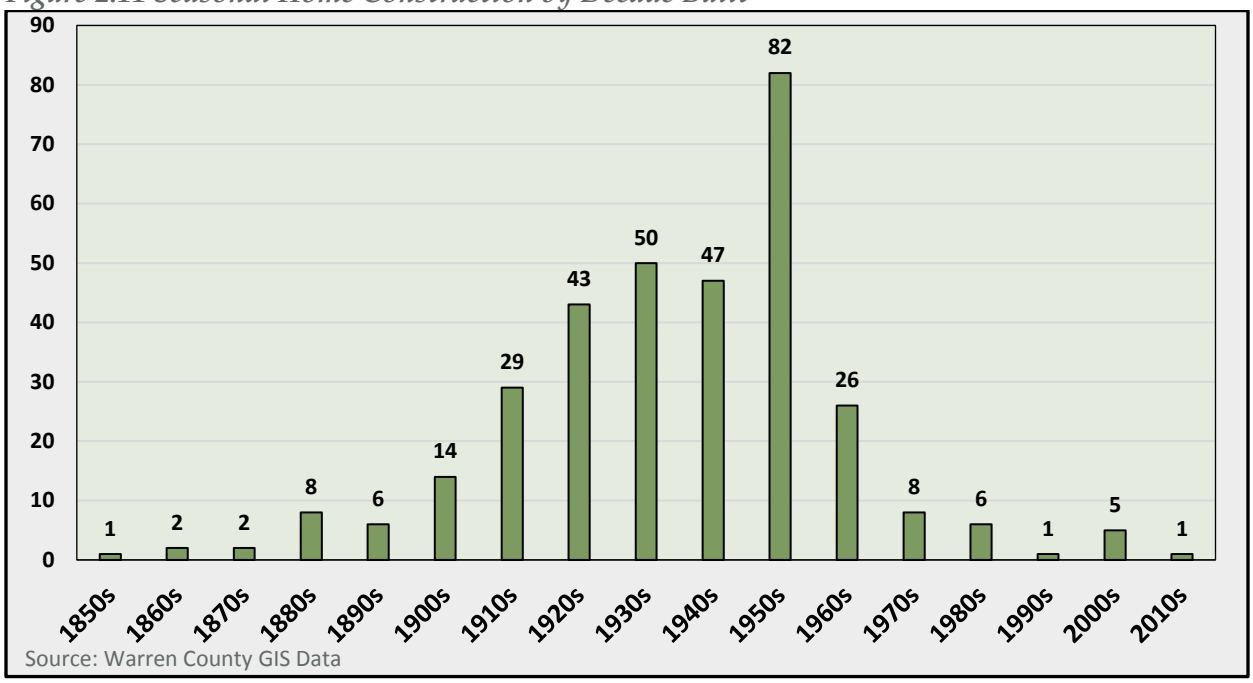
Figure 2.10 Seasonal Home Median Price by Year (1994-2017)



While seasonal homes figure more prominently in other areas of Warren County, the vast majority of the Town's residences are year-round. The chart above shows the median sales price by year and the number of seasonal homes sold by year.[63] Clearly, there is a lot of variation in both selling price and the number sold in any given year. Compared to the year-round residential homes, seasonal homes in the Town represent a much smaller portion of the overall housing market. Unlike year-round residences, very little construction of seasonal homes have taken place over the last 50 years. Most of the seasonal homes were built between from the 1910s to the 1960s. Furthermore, only 25% of the seasonal homes have been sold since 1994 (compared to 60% of single-family residences). A number of factors could be driving the differences such as differing zoning restrictions and requirements.

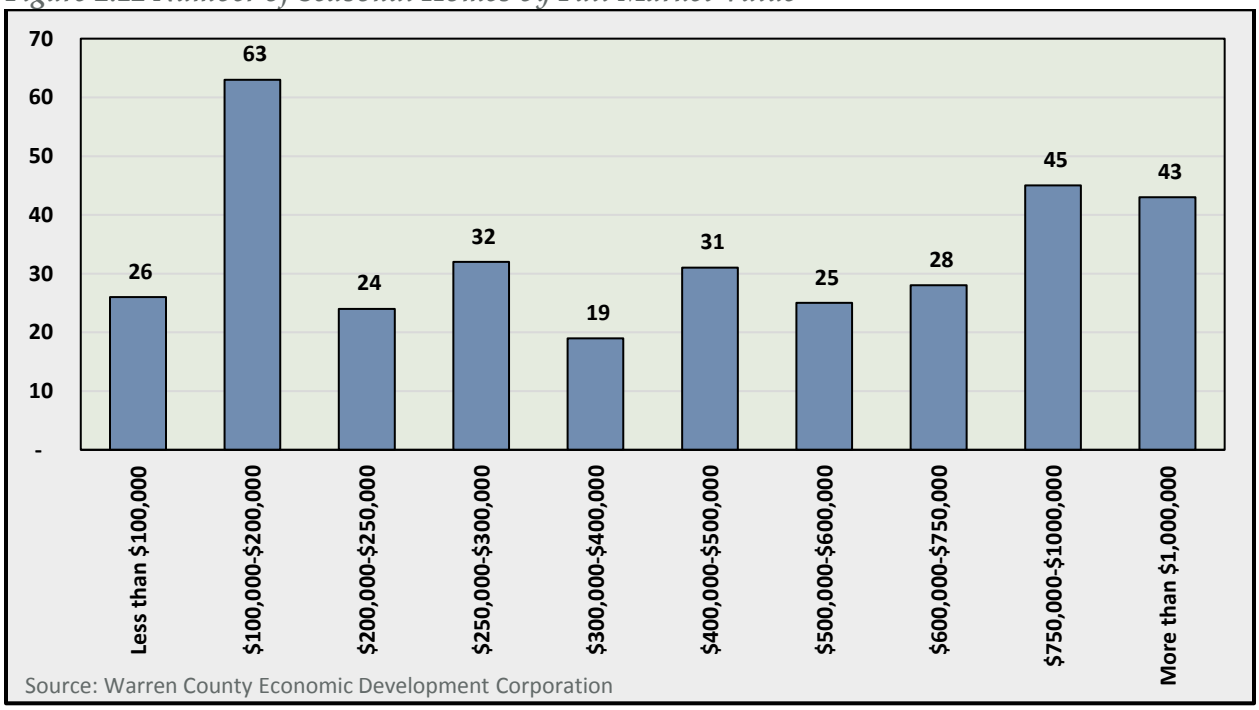
[63] The noted caveat above applies; given the smaller counts in sales, the single-frequency rule would result in reporting bias.

Figure 2.11 Seasonal Home Construction by Decade Built



The chart below shows the number of seasonal homes by their assessed full market value. From the data, there is a disproportionate number of seasonal homes in the upper value ranges with the third largest number being valued at over $1,000,000 and more than 50% of these parcels valued at over $400,000.

Figure 2.12 Number of Seasonal Homes by Full Market Value



3. HOUSING SUPPLY AND DEMAND

A housing market is typically sub-divided into renter-occupied and owner-occupied housing markets. The key demographic utilized in assessing trends within these housing markets is households, specifically year-round resident households. A household represents the basic demographic unit and is defined (according to the U.S. Census Bureau) as including all the people who occupy a housing unit (such as a house or apartment) as their usual place of residence. A household includes related family members and all unrelated people, if any (such as lodgers, foster children) who share the housing unit. A person living alone in a housing unit, or a group of unrelated persons sharing a housing unit such as partners or roomers, also qualifies as a household. Households are subdivided into two categories: family and non-family. Household counts exclude those persons residing in group quarters.

The housing unit supply forecast methodology followed the theory that the number of future housing units in the Town would be correlated and predicted by the number of forecasted housing completions in the MSA, as set forth in the long-term May-June 2018 Moody's Forecast for the MSA, and adjusted to the Town by the EPR-CA Team—within the context of the broader long-term economic forecast for the U.S. economy as a whole.

Housing unit demand is closely associated with the number of households headed by a year-round resident residing in a particular locale (in this case, a year-round resident of Queensbury). These households reside in housing units that are either owner-occupied or rental-occupied. Historical housing unit demand and owner-occupied/rental-occupied/vacant units are reported by jurisdiction in decennial years by the U.S. Census Bureau and intercensal years by the American Community Survey (or "ACS"). Housing unit demand is generally synonymous with the number of households. Housing unit demand using variables such as households, owner-occupied units, rental-occupied units for each peer community were forecasted from calendar year 2017 through calendar year 2027 for this study based on historical population-demographic data obtained through the May-June 2018 forecast from Moody's Analytics.

The housing unit projections resulted in a lower rate of housing unit demand growth than was the case during 1990s through the mid-2000s when the housing market peaked in the Town and for the greater region as a whole. The housing projections also included a shift slightly away from the housing market dynamics associated with the absolute declines in the population of the region and Town during the 2010-2016 period. The housing unit demand projections indicate there will be a slight uptick in owner unit demand during the calendar year 2016 to 2022 time frame (but owner unit demand is expected to increase by less than one percent per year over the period), as the resident population ends its recent decline and begins a slow rebound. Unit demand for renter units is expected to experience a more substantial turnaround during the calendar year 2016 to 2022 period, but unit demand also is expected to increase at almost 1.4 percent per year. Both owner and renter unit demand will expand over the 2022 to 2027 period to increase at an average annual rate of more than one percent per year. Detailed results are shown in Table 3.1 below.

Table 3.1 Queensbury Housing Unites

				Change in Units/Households			Average Annual Growth		
Queensbury	2016	2022	2027	2016-2022	2022-2027	2016-2027	2016-2022	2022-2027	2016-2027
Total Housing Units	13,203	13,642	14,015	439	373	812	0.55%	0.54%	0.54%
Single-family	9,802	9,971	10,135	169	164	333	0.29%	0.33%	0.30%
Multi-family	2,881	3,103	3,307	222	204	426	1.24%	1.28%	1.26%
Other-mobile	520	568	573	48	5	53	1.48%	0.18%	0.89%
Tenure, owner	8,247	8,684	9,130	437	446	883	0.86%	1.01%	0.93%
Tenure, renter	2,956	3,212	3,396	256	184	440	1.39%	1.12%	1.27%
Households	11,203	11,896	12,526	693	630	1,323	1.01%	1.04%	1.02%

Source: U.S. Census Bureau; Moody's Analytics; EPR

4. AFFORDABILITY GAP ANALYSIS SUMMARY

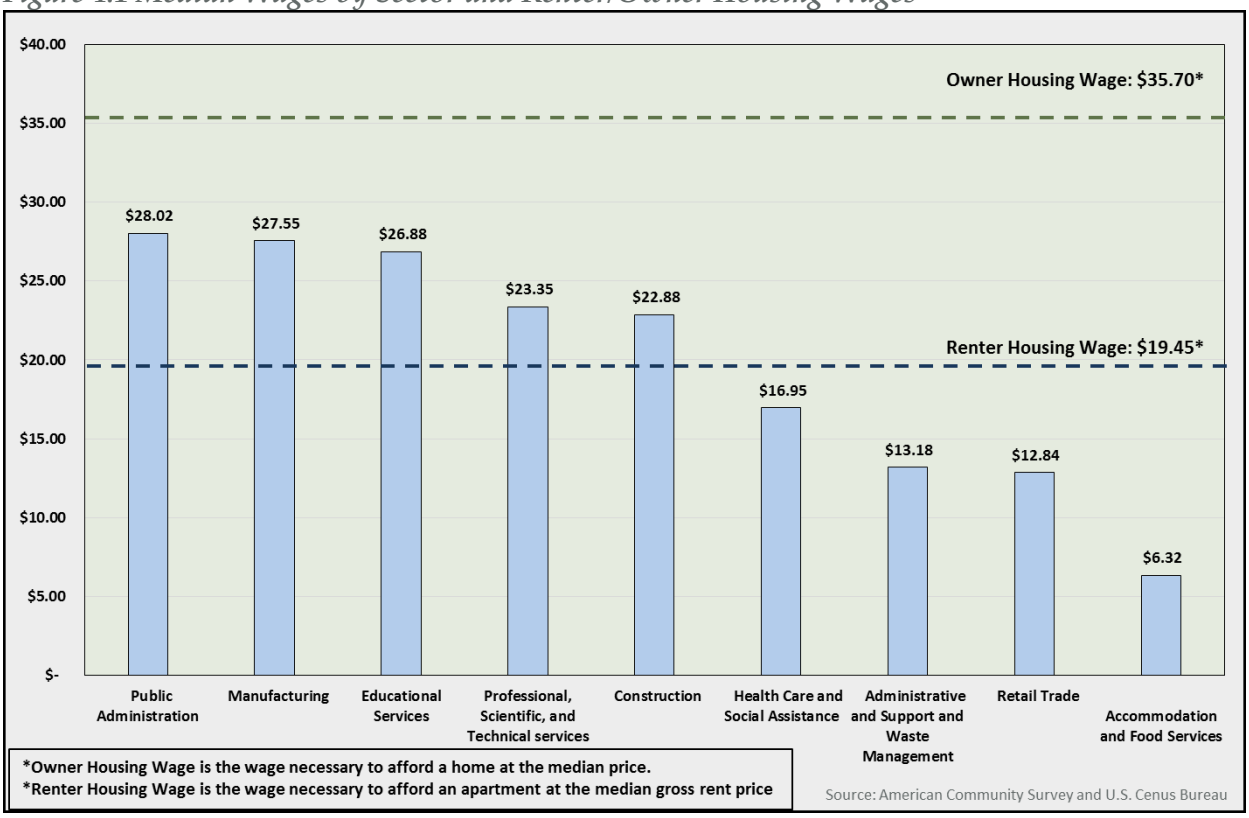
The affordability calculations used in this study conform to the generally accepted approach employed by HUD to identify housing cost stress in a housing market. According to HUD, a household that is not "housing cost stressed," is one that expends less than 30% of its household income on housing costs. If a household spends more than 30% of its income on housing costs, the household is considered housing-cost stressed.[64]

This study's approach builds on the HUD theory to determine: (1) "how much house" a household can affordably purchase from household income after paying the costs of utilities and home owner's insurance, property taxes, and debt service costs on a conventional 30 year-5% down payment mortgage for an owner unit in the town, and (2) "how much house" can be affordably rented from net household income after paying the costs of utilities associated with a rental housing unit in the town.

Reflecting the economic realities of our times, many single wage earner households in the Town are housing cost stressed (See Figure 4.1 below). The chart compares hourly median wages paid during calendar year 2016 in the Town's nine largest job categories and compares those wages to the median costs of affordably occupying an owner or renter unit on a full-time or 2,080 hours per year basis. As such, the chart presents the required wage by tenure that would need to be earned by a full-time worker in the Town on a per hour basis in order to avoid being housing cost stressed.

[64] It should be noted that there is a developing, but not yet widely accepted, housing affordability calculation that also includes household transportation costs in the housing affordability calculations. In housing affordability calculations that include estimated household transportation costs, the applicable percentage for indicating the threshold for housing cost stress rises to between 45% and 50% of household income. Critical to including transportation costs in the household "housing cost" expenditures is a valid and sufficiently geographically detailed estimate of disparate transportation cost expenditures on a very small areas of geographic space (such as municipalities and zip codes).

Figure 4.1 Median Wages by Sector and Renter/Owner Housing Wages



For residents of the Town participating in the workforce, the data show that single wage earner households were likely experiencing significant levels of housing cost stress in calendar year 2016—the base year for the study. From the data, single wage earner households would have very likely been housing cost stressed in 2016 if they had occupied an owner unit and worked in any of the Town's nine largest job categories. For single wage earner households occupying a renter unit, renters are more likely than not to earn a high enough hourly wage working in five of the nine major job categories in the Town to pay the typical costs of occupying a renter unit without being housing cost stressed (including the job categories of Public Administration, Manufacturing, Educational Services, Professional, Scientific, and Technical Services, and Construction). In the other four job categories, single wage earner households were less likely than not to be earning a high enough hourly wage to enable their household to avoid being housing cost stressed, unless there was a second wage earner or the household had sufficient wealth to pay those costs. In today's economy, two wage earner households are more the "norm" than the exception, but even many of this type of household have trouble reaching a combined income to afford owning a housing unit "cost-stress free." This housing cost stress situation in the Town is likely to worsen over the study period as affordability pressures in both tenure categories are expected to increase over the calendar year 2017-27 time frame.

The table below contains an example of the final owner affordability analysis for the town for calendar year 2016. All of the elements are laid out in this table. Included at the bottom of the table are estimates showing the number of housing units available at the calculated affordable

price point for a given income category at or below the 30% of the estimated housing cost threshold. The market supply price points use two concepts: (1) the affordability profile of single-family housing unit sales for calendar year 2016 from the town assessor sales data, and (2) an estimate of the single-family housing units by assessed value.

Table 4.1 2016 Affordable House Price for Owners: Town of Queensbury, NY

Owners					
2016 Affordable House Price: Town of Queensbury, NY					
	Median Household Income:				
@ Percent of Median Household Income	$76,714	@50%	@80%	@100%	@120%
Annual Household Income		$38,357	$61,371	$76,714	$92,057
Monthly Household Income		$3,196	$5,114	$6,393	$7,671
% of Income for Housing		30%	30%	30%	30%
Affordable Housing Expenses Per Month (@30% of Monthly Household Income)		**$959**	**$1,534**	**$1,918**	**$2,301**
Property Tax & Insurance Payments Per Month		**$337**	**$520**	**$642**	**$764**
Insurance	$108.23	$108	$108	$108	$108
Private Mortgage Insurance (1% of Loan Amount)	0.06%	$62	$112	$146	$179
Town, County, and School District Property Taxes (per $1,000)	$1.54	$166	$299	$388	$477
Utilities		**$152**	**$171**	**$180**	**$191**
Affordable Mortgage Payment (@3.65%)		$470	$844	$1,096	$1,346
Affordable Mortgage Amount (95% of Price, Assuming 5% Down)		$102,652	$184,542	$239,519	$294,258
Affordable House Price		**$108,055**	**$194,255**	**$252,125**	**$309,745**
Median House Price (2016)		$230,000	$230,000	$230,000	$230,000
Affordable Price-Difference from Median		**($121,945)**	**($35,745)**	**$22,125**	**$79,745**
Affordable Single-Family Year-Round Residential, FY 2017 Assessed Values	**Total**	**674**	**4,035**	**6,241**	**7,511**
% of Total Parcels	**9,146**	7.4%	44.1%	68.2%	82.1%

In addition to the above-described owner housing price affordability calculations, a separate set of affordability calculations was completed using the same general approach for renter housing units. This renter affordability analysis was undertaken in order to determine the distribution of affordable rents for the town. The estimated household income level in calendar year 2016 among renters, like the owner unit calculations, was the starting point for this analysis. Estimated rents and expenditures for utilities for renter households were then calculated specifically for the town. Data for the town was then analyzed to determine the number of households in each income category that were estimated to be experiencing housing cost stress—defined as households that were estimated to be paying more than 30% of their household income for housing costs in their renter unit. The affordability gap for renters for each household income level for the town was then calculated based on the difference between the affordable gross rent and the monthly gross rent. The exhibit below presents this data for Queensbury.

Table 4.2 2016 Affordable House Price for Renters: Town of Queensbury, NY

Renters					
2016 Affordable Rent: Queensbury, NY					
	Median Household Income:				
@ Percent of Median Household Income	$38,095	@50%	@80%	@100%	@120%
Annual Household Income		$19,048	$30,476	$38,095	$45,714
Monthly Household Income		$1,587	$2,540	$3,175	$3,810
% of Income for Housing		30%	30%	30%	30%
Monthly Utilities		$122	$143	$152	$160
Affordable Asked Rent		$354	$619	$800	$983
Affordable Gross Rent		**$476**	**$762**	**$952**	**$1,143**
Monthly Gross Rent (Includes Utilities)		$1,011	$1,011	$1,011	$1,011
Affordability Gap		**($535)**	**($249)**	**($59)**	**$132**

The study estimated that housing cost stress in the Town in the base year of 2016 (see Table 4.4 below) was limited to the lowest household income category (at or below 50% of the median) for owners and the bottom three household income categories for renters (or for the household income categories at or below 100% of the median). Compared to many other municipalities and States throughout the northeast, these 2016 housing cost stress benchmarks are relatively "manageable," and would very likely be envied. These benchmarks mean the Town has the opportunity to address its workforce housing issues from a position of relative strength, before the measures of housing cost stress rise to a genuine housing cost stress-based crisis.

Table 4.3 Existing Housing Cost Affordability Gap in the Town of Queensbury (2016)

Town of Queensbury-Estimated Affordable Gap for Owner Units, 2016					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$38,357	$61,371	$76,714	$92,057	
Affordable Price [Excludes Transportation Costs]	$99,679	$189,321	$243,646	$297,735	
Estimated Unit Demand	1,450	1,592	1,092	850	3,403
Estimated Unit Supply	865	2,393	1,620	1,440	2,069
Affordability Gap in Units (Demand minus Supply)	585	-801	-528	-590	
Cumulative Demand	**1,450**	**3,042**	**4,134**	**4,984**	**8,387**
Cumulative Supply	**865**	**3,258**	**4,878**	**6,318**	**8,387**
Cumulative Gap	**585**	**-216**	**-744**	**-1,334**	
Town of Queensbury-Estimated Affordable Gap for Renter Units, 2016					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$19,048	$30,476	$38,095	$45,714	
Affordable Rent [Excludes Transportation Costs]	$476	$762	$952	$1,143	
Estimated Unit Demand	804	190	494	284	1,212
Estimated Unit Supply	265	206	763	653	1,099
Affordability Gap in Units (Demand minus Supply)	539	-15	-268	-368	
Cumulative Demand	**804**	**995**	**1,489**	**1,773**	**2,985**
Cumulative Supply	**265**	**471**	**1,234**	**1,886**	**2,985**
Cumulative Gap	**539**	**524**	**256**	**-113**	
Source: U.S. Census Bureau, American Community Survey				Prepared by Economic & Policy Resources	

The above situation presents Town residents, policymakers, and stakeholders with both opportunities and challenges. On one side, the size of the workforce housing cost stress "gap" is not large, and the Town is presented with the opportunity to get out of its situation before the size of the problem grows to require decades to recover from—as long as it can develop a "sufficient consensus" to move forward to address those relatively small, but still significant gaps. On the other side, as mentioned above, it is difficult to develop an appropriate level of urgency to take the sometimes difficult steps to address the problem among Town residents because a "sufficient consensus" is not present to take action. This can particularly be an obstacle for housing policy of this nature, because many "best practices" policy solutions of this type can be expensive and involve sometimes politically unpopular changes within communities. As stated above, "threading the needle" to devise and implement policies will be challenging and will test the will of Town residents to thoughtfully address these workforce housing affordability issues before they become a potential crisis.

This is the case because this study found that housing cost stress in the Town can be expected to increase significantly over the next ten years. This is because many categories of housing costs for both owners and renters are expected to increase at a rate that is roughly double the expected increase in household income growth for both tenure categories over the calendar year 2016-2027 period. As a result, the number of housing cost stressed households are expected to increase in both tenure categories across a broader range of household income categories (see Table 4.5 below). The table shows that housing cost stress can be expected to engulf a larger number of households in an increasing number of household income categories in both tenure categories.

Table 4.4 2017 Forecasted Affordability Gaps by Tenure in Queensbury [65]

Town of Queensbury-Estimated Affordable Gap for Owner Units, 2027					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$48,999	$78,399	$97,998	$117,598	
Affordable Price [Excludes Transportation Costs]	$112,735	$201,365	$260,845	$320,081	
Estimated Unit Demand	1,585	1,726	1,220	796	3,804
Estimated Unit Supply	695	1,356	1,411	1,334	4,335
Affordability Gap in Units (Demand minus Supply)	890	370	-191	-538	
Cumulative Demand	**1,585**	**3,311**	**4,530**	**5,326**	**9,130**
Cumulative Supply	**695**	**2,051**	**3,462**	**4,795**	**9,130**
Cumulative Gap	890	1,260	1,069	531	
Town of Queensbury-Estimated Affordable Gap for Renter Units, 2027					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$24,109	$38,574	$48,217	$57,860	
Affordable Rent [Excludes Transportation Costs]	$603	$964	$1,205	$1,447	
Estimated Unit Demand	915	428	350	273	1,431
Estimated Unit Supply	283	116	500	687	1,810
Affordability Gap in Units (Demand minus Supply)	632	312	-150	-414	
Cumulative Demand	**915**	**1,343**	**1,692**	**1,965**	**3,396**
Cumulative Supply	**283**	**399**	**899**	**1,586**	**3,396**
Cumulative Gap	632	943	793	379	
Source: U.S. Census Bureau, American Community Survey				Prepared by Economic & Policy Resources	

[65] The reader will note that there is no red text on these tables as is there no income category that has a cumulative over-supply of units in calendar year 2027.

Indeed, by calendar year 2027 both renters and owners have a unit gap at all income levels up to 120% of median income by tenure category. This shows there is likely to be a significant affordability problem for owners and renters and units affordable at below the 30% threshold will be largely unavailable leading to many households becoming "housing-cost burdened". This change from calendar year 2016 is largely due to a significantly faster rate of increase for rent and home prices than for incomes through the forecast period.

5. Population Forecast Methodology

The methodology used to create the economic and demographic forecast for Queensbury draws from an integrated macroeconomic forecast for the U.S. economy, and another integrated macro forecast specific to the Glens Falls Metropolitan Statistical Area (the "MSA")[66] region, both purchased from Moody's Analytics.[67] These forecasts were conducted in May-June 2018. The U.S. forecast, along with estimates of the Town's annual, mid-year population and net migration from the U.S. Census Bureau, laid the groundwork for the short-term and long-term forecast of Town economic activity and the resulting Town demographic forecast. This approach was determined by the EPR-Crane Associates Team to be the most credible approach employed in light of the advanced age of the current national, state, and regional economic expansion, and the growing level of uncertainty in play beyond the median term (3-5 years).

The Moody's Analytics forecasts used in this study were selected given the EPR-CA consulting team's successful experience in utilizing the Moody's Analytics national and regional economic forecast as a starting point for analysis and customization in several past housing supply and demand studies we've conducted throughout the northeastern U.S. region. Each time the Moody's Analytics macroeconomic forecast was used, it was found that the long-term economic and demographic forecasts were proven as critically important to the initial analytical and technical foundation for the regional economic and demographic forecast used in each previous study.

In addition, Moody's Analytics also had a sound approach for incorporating recent global events into the U.S. economic outlook. For example, Moody's Analytics thoroughly researched the risks

[66] The U.S. Office of Management and Budget (OMB) delineates metropolitan statistical areas according to standards applied to Census Bureau data. The general concept of a metropolitan statistical area ("MSA") is that of a core area containing a substantial population nucleus, together with adjacent communities having a high degree of economic and social integration with that core. Each metropolitan statistical area must have at least one urbanized area or central county with a population of 50,000 or more inhabitants. Glens Falls MSA consists of (1) Warren County ("central county") and (2) adjoining county of Washington County; and its principal city of Glens Falls.

[67] Economic & Policy Resources, Inc. ("EPR") of the EPR-Crane Associates Team has been a regular subscriber to Moody's Analytics economic analysis and forecasting services for over thirty years through its various associations, such as with the New England Economic Partnership (known throughout the New England region as "NEEP"), and through its more than 35 years of experience in applied economics throughout the U.S. and in three U.S. territories. In addition, EPR has used U.S. macro and regional forecasting economic and demographic services from Moody's Analytics (or its forerunner companies) through the years for specific research projects—including several housing and demand studies throughout the northeastern United States.

associated with the imposition of U.S. tariffs on Chinese goods. The Moody's Analytics U.S. forecast also fully considers and incorporates the expected impacts on the U.S. resulting from the economic instability among many of the countries in the less developed world, and the growing economic imbalances in China, which is the second largest economy in the world and the primary economic and trade partner/rival of the U.S. Moody's has also incorporated economic and political developments in key regions such as the Middle East (e.g. their impacts on U.S. energy prices) and the rapidly evolving economies in Asia (in addition to developments in China). All of these extremely complex and evolving external forces require a sound and integrated, forward-looking macroeconomic and demographic foundation on which to build the economic outlook for the Town's long term economic and demographic forecast, if the forecast is to remain relevant and useful to town stakeholders through calendar year 2027.

The Moody's regional economic and demographic forecast for Queensbury is a step-down forecast procedure based on a separate forecast from the Glens Falls Metropolitan Statistical Area ("MSA") which covers the Warren and Washington County region. The regional economic and demographic forecast utilizes the national forecast as a basis for the forecasted local variables. Because the Moody's Analytics U.S. Macro Model is a closed system, the independently-forecasted variables for the region are part of a system where all regional forecasts are forced to accumulate to the national total as determined by the U.S. Macro Model. The model includes more than 1,800 published and unpublished intermediate variables that fall into either the short or long term. The difference between short and long term variables in their analysis is how supply variables are treated. Supply variables represent the capacity of the economy such as expansions in labor and capital and changes in technology. In the short-term these variables are fixed whereas in the long-term these variables are allowed to fluctuate.

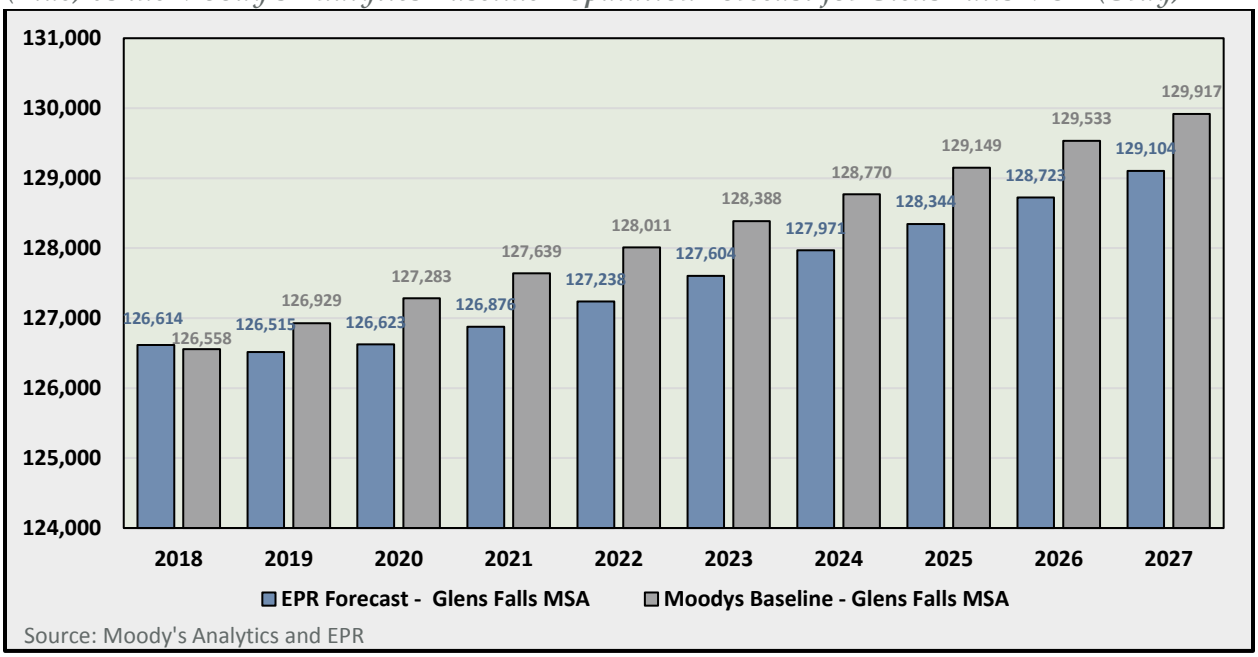
The first step in the EPR-CA Team creating the economic and demographic forecast (including the detailed population forecast) for the region, and subsequently the Town, is derived from the Moody's Forecast, and more geographically-specific economic and demographic data from a special baseline forecast that was commissioned by the EPR-Crane Associates Team. More specifically, the EPR-Crane Associates Team in March 2018 developed a comprehensive regional economic and demographic forecast through calendar year 2027 for the Glens Falls Metropolitan Statistical Area (or the "MSA") derived from Moody's regional model for the MSA, whose two-county area (Warren and Washington Counties) includes the entire Town of Queensbury.

The baseline Moody's forecast for the MSA region includes the expectation that the region's population will actually increase in the future, despite the actual population decline experienced over the recent period. The Moody's forecast incorporates economic drivers of population and demographic change, rather than exclusively historical data. Population is only one variable in Moody's regional economic and demographic structural model for the MSA region. The initial adjusted forecast had a large increase in population in the first forecasted year. This was likely caused by the Moody's forecast not incorporating certain important characteristics of the MSA (it is impossible to know which ones), and it reflected a typical "forecast launching" issue—where historical values are matched to forecasted future values as estimated by the quantitative model.

In order to properly address this issue—in terms of the change in population from 2017 (last year of region historical data) to 2018 (first year of forecasted region data) a statistical adjustment to the Moody's forecast was made to weight the previous years' demographic trends a little more heavily.

To accomplish this, a 5-year moving average was applied to the Moody's Analytics baseline data, where the value in 2018 was the 5-year average of the total population in the MSA from 2014 through 2018. Instead of 2027's population forecasted to be 129,917 in the original Moody's forecast, the adjusted population would now be 129,104. This approach resolves the forecast's launching problem. To further revise, again based on the inclination to give consideration to demographic trends, we took into account the forecasted natural change of population by Moody's Analytics for years 2017 through 2027. We subtracted the forecasted number of deaths (net of births) in the MSA during these years from the results obtained from the forecast. This lowered the EPR forecast for population even further away from the Moody's Analytics forecast. Figure 5.1 below shows the difference between EPR's revised forecast and Moody's regional baseline forecast.

Figure 5.1 Glens Falls MSA Population Forecast—EPR Adjusted Forecast for Glens Falls MSA (Blue) vs the Moody's Analytics Baseline Population Forecast for Glens Falls MSA (Gray)



6. Policy Perspective on Affordable Workforce Housing.

Within the context of the broader affordable housing issue, the economy's recovery from the housing market and financial crisis of the last decade has begun to direct increasing levels of interest among businesses and business advocacy groups, planners, and elected/appointed government officials to what specifically can be done to expand options for affordable workforce housing. Interest in the concept of affordable workforce housing also has attracted rising levels of attention among the long-engaged and highly-experienced constituencies and stakeholder groups that have historically been involved with more traditional affordable housing policy. New and rising interest in workforce housing efforts has network and broader effects to expand affordable housing choice through the myriad of existing federal and federal-state-local cooperative programs that have evolved over the period since such efforts began back in the 1960s.

For business advocacy groups and government officials (and in particular for local government officials), expanding affordable workforce housing options has been attracting more attention as a means to assist in the implementation of broader strategies working towards building healthy, livable, and sustainable communities. Among the more traditional organizations and groups who are concerned with the existing affordable housing programs framework, interest in workforce housing seems to center on the ability of the issue to draw even more attention and additional resources to meet the region's or a municipality's overall affordable housing challenges. Although there are likely some households with wage earners in the Town that could benefit from those broader federal- and state-assistance programs, workforce housing strategies are designed to address the affordable housing needs of those lower household income levels that are above the lowest levels of the household income strata that typically qualify for those existing government- and non-profit-sponsored affordable housing programs and/or for whatever reasons do not participate in housing-assistance programs.[68] Moreover, these households tend to be those with at least one wage earner, whose requirements are not the same as the profile of households that might qualify for more traditional affordable housing program assistance. It just happens that the earnings level of members of the household are insufficient to secure affordable, quality housing within a reasonable geographic proximity to their regional and/or municipal employers and workforce housing strategies would begin to address that situation.[69]

In the beginning, the public policy reasoning behind workforce housing initiatives was to target initiatives toward providing affordable options to what are known as "essential workers" in a community. "Essential workers" were defined as occupations such as police officers, firemen,

[68] Although many times these broader federal and state affordable housing programs target, and are more effective for, addressing needs of only very low household income households.

[69] Sullivan, Wendy. *The Impact of Affordable Workforce Housing on Community Demographics, Economies, and Housing Prices and Options*. 2014.

teachers, nurses, and other similar medical personnel. In resort communities/regions, the definition of essential workers was somewhat more expanded to include lower-paid workers in the various services job categories that were vital to the region's visitor industry. The public policy reasoning underpinning those workers involved the labor force-housing market dynamic where resort workers in lower-paying occupations were faced with trying to find affordable housing in areas where the resort industry's business model-operating dynamics (including the need for lodging for the industry's overnight visitors in close proximity to the resort facilities where employees worked) resulted in high real estate costs (for owners) and high rent levels (for renters) if the worker householders desired to live in the same close proximity to the resort. Still others define workforce housing more generally to include wage-earner households at certain household income levels regardless of type of employment, with definitions typically covering the lower- to mid- household income ranges.

The history of workforce housing dates back to the mid-1970s in prominent resort communities in Colorado, where local residents working in the region's heavily visitor-based Winter tourism economy, had difficulties affording decent housing due to the disparity between the low level of wages earned by industry workers and the high and rising cost of houses and rents that comprised the overwhelming majority of their housing options in the geographic area where they worked. The areas' rising housing costs had been driven by out-of-the-area buyers and the need for enough nearby renter units to accommodate the lodging requirements of region's visitors. For the most part, the challenges of workforce housing since the 1970s seemed to mostly be a concern of the housing market conditions and the pay levels of jobs in areas that largely surrounded major resorts.[70] There was little public sympathy for these "gold towns" that could export their tax burdens to wealthy visitors and there were few federal programs or polices put into place that were designed to assist these areas with their challenges.

However, actual experience with workforce housing since that time has shown that the issue has had more far-reaching implications. The ability of earners in those households to find affordable housing within a reasonable proximity to where they work has become a broader and more far-reaching quality of life issue for many households beyond that which was historically experienced in resort communities at that time. Lower and moderate-income households have sought housing on the periphery of employment sheds because of the mismatch between the economic fruits of gainful employment and the costs of housing options made affordable by that employment.[71] The periphery or outer areas of settlements have been more attractive for such housing because that has been where land prices have been typically lower and housing can be constructed at lower price points for owners and at lower rent levels for renters. The phenomenon is known as "driving for affordability." As housing costs have risen and household income has not kept pace, this phenomenon has become more widespread. This "driving for affordability" dynamic has been identified as a contributor to more scattered, lower density settlement patterns commonly known as "sprawl"—along with this type of development's attendant higher costs, traffic congestion, more lengthy commutes, and the need to expand

[70] Ibid.

[71] Moore, Samuel R. *Successful Strategies for the Private Development of Workforce Housing in New York City*. 2011.

infrastructure in the places where it is most expensive to operate (such as in lower population density areas).[72]

Against those trends, the overall policy response on the policy front to the affordable workforce housing challenge has generally been muted and for the most part has been indirect over time. For the most part, federal programs and cooperative federal-state programs have historically focused on: (1) providing housing subsidies or vouchers, (2) building and maintaining public housing projects that serve only the most disadvantaged households at the lowest end of the household income spectrum, and/or (3) encouraging the development of affordable units through programs like the Low-Income Housing Tax Credit Program. Housing affordability for worker households for the most part have historically been supported mainly through programs to support homebuyers (such as Federal Housing Administration or FHA loans), which used subsidies or incentives mostly through the financial tool of mortgage financing. As a result, programs to support the expansion of affordable workforce housing for households with household incomes above the lower levels, but who have still been struggling to afford decent workforce housing, have been underserved. Federal and State programs historically have apparently largely defaulted to the regional (e.g. county) and local (e.g. municipal) levels of government to take on those challenges.[73]

As a result, there is a likely policy gap in terms of what is required to address and fund the emerging workforce housing challenge in the Town. Since 2003, when the previous housing affordability study was completed, the Town has enacted only one of that study's recommendations. Aside from encouraging use of federal and state programs to encourage the rehabilitation of housing (largely in the West Glens Fall area), the town has not undertaken the policy recommendations from the previous study such as extending water and sewer systems, expanded use of PUDs, density bonuses, or affordable housing mandates.

Even so, the Town has pursued using the Brownfield Opportunity Area (BOA) program through New York State to develop the Queensbury South BOA, completing a pre-nomination study in 2013 and securing funding to complete a nomination study in early 2018, which will need to be completed before starting an implementation strategy. The Queensbury South BOA is a 540 acre area including 18 potential brownfield or underutilized sites. "*The shared vision for the Queensbury South BOA includes a strong and vibrant residential neighborhood that has safe and strong pedestrian connections to local businesses and recreational amenities. This vision includes continuation of the Town's affordable housing strategies, promotion of new homeownership opportunities, and new recreational facilities.*"[74] While this vision is aligned with affordable workforce housing goals, it will likely not be fully realized until well into the future.

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[72] Buki, Charles. "Affordable Housing and Growth Management and Sprawl" Equity for Some versus Affordability for Others. 2001.

[73] Haughey, Richard M. *Workforce Housing: Barriers, Solutions, and Model Programs*. 2002; "*As Affordable Housing Crisis Grows, HUD Sits on the Sidelines*; New York Times, July 27, 2018.

[74] Queensbury South Brownfield Opportunity Area Pre-Nomination Study.

This study recommends consideration of the Town taking more immediate steps to address the Town's upcoming workforce housing challenge. Maintaining the status quo likely means that the underlying housing cost pressures will increase affordability pressures for wage earner households in the Town over the calendar year 2016 through calendar year 2027 period. Over the next ten years home prices and rent costs are expected to grow at twice the rate of renter and owner household incomes. This disparity will likely lead to a much more serious affordability deficit in the available supply of affordable workforce housing in the Town unless policies are developed and implemented to effectively address these challenges.

APPENDIX A: METHODOLOGY

Introduction:

This Appendix explains the methodology used to create the economic and demographic forecast for the Town, which forms the basis of the housing demand portion of the housing market study and future needs assessment. The forecast model is composed of an integrated macroeconomic forecast for the U.S. economy, and another integrated macro forecast specific to the Glens Falls Metropolitan Statistical Area (the "MSA")[1] region, both purchased from Moody's Analytics.[2]

The undertaking of this housing study for Queensbury comes within a global and national context of solid economic expansion. The national economy continues to expand at a solid pace, making this a nearly nine-year sustained economic expansion which is the second longest in U.S. history. Job gains have remained solid, even as the economy is at full employment. The unemployment rate has fallen to below 4 percent, the lowest in several decades. From a business cycle perspective, the length of this expansionary period has entered rarefied and risky territory. While there is no limit on how long economic expansions will last, only one in recorded U.S. economic history has lasted longer without recessionary or corrective periods in between. The near-term outlook is for continued but slowing economic expansion.

As of December 2018, the historically low unemployment rate is being driven by a combination of socio-demographic trends and a massive fiscal stimulus by way of temporary deficit-financed tax cuts and increased federal government spending. The current presidential administration, with its pledges to change the previous trajectory of the nation's economic and foreign policies, represents a deliberate departure from those federal policies which characterized the previous eight years. Because the underlying, long-term economic and demographic forecast for the Town is a foundational part of this housing market and needs assessment/study, the EPR-Crane Associates Team devoted significant attention to the long-term economic and demographic forecast, meant to ensure that the results of this study will be reasonable and useful for the town's stakeholders into the future.

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[1] The U.S. Office of Management and Budget (OMB) delineates metropolitan statistical areas according to standards applied to Census Bureau data. The general concept of a metropolitan statistical area ("MSA") is that of a core area containing a substantial population nucleus, together with adjacent communities having a high degree of economic and social integration with that core. Each metropolitan statistical area must have at least one urbanized area or central county with a population of 50,000 or more inhabitants. Glens Falls MSA consists of (1) Warren County ("central county") and (2) adjoining county of Washington County; and its principal city of Glens Falls.

[2] Economic & Policy Resources, Inc. ("EPR") of the EPR-Crane Associates Team has been a regular subscriber to Moody's Analytics economic analysis and forecasting services for over thirty years through its various associations, such as with the New England Economic Partnership (known throughout the New England region as "NEEP"), and through its more than 35 years of experience in applied economics throughout the U.S. and in three U.S. territories. In addition, EPR has used U.S. macro and regional forecasting economic and demographic services from Moody's Analytics (or its forerunner companies) through the years for specific research projects—including several housing and demand studies throughout the northeastern United States.

Components and Methodology

Following this detailed review and analysis by EPR, the EPR-Crane Associates Team made the decision to utilize the Moody's Analytics May-June 2018 U.S. macroeconomic forecast as the basis for the Town's short-term and longer-term demographic and economic forecast through calendar year 2027. This U.S. forecast, along with estimates of the Town's annual mid-year population and net migration from the U.S. Census Bureau, laid the groundwork for the short-term and long-term forecast of Town economic activity and the resulting Town demographic forecast. This approach was determined by the EPR-Crane Associates Team to be the most credible approach employed in light of the advanced age of the current national, state, and regional economic expansion, and the growing level of uncertainty in play beyond the median term (3-5 years).

In addition, Moody's Analytics maintains a sound approach for incorporating recent global events into their U.S. economic outlook. For example, Moody's Analytics thoroughly researched the risks associated with imposing U.S. tariffs on Chinese goods. The Moody's Analytics U.S. forecast also fully considers and incorporates the expected impacts on the U.S. resulting from the economic instability among many of the countries in the less developed world, and the growing economic imbalances in China, which is the second largest economy in the world and the primary economic and trade partner/rival of the U.S. Moody's has also incorporated economic and political developments in key regions such as the Middle East (e.g. their impacts on U.S. energy prices) and the rapidly evolving economies in Asia (in addition to developments in China). All of these extremely complex and evolving external forces require a sound and integrated, forward-looking macroeconomic and demographic foundation on which to build the outlook for the Town's long-term economic and demographic forecast, if the forecast is to remain relevant and useful to town stakeholders through calendar year 2027. Based on the EPR-Crane Associates Team's research and review, it was decided to use the May-June 2018 Moody's Analytics U.S. Macroeconomic forecast as the starting point of the Town economic and demographic forecast. Part of this selection process included the knowledge that the May-June 2018 macroeconomic forecast was the first forecast that attempted to fully incorporate the current and expected economic implications of the current federal administration's trade, taxation, and fiscal policies.

The Moody's Analytics forecasts used in this study also were selected given the Crane Associates/EPR consulting team's successful experience in utilizing the Moody's Analytics national and regional economic forecast as a starting point for several past housing supply and demand studies we've conducted throughout the northeastern U.S. region. Each time the Moody's Analytics macroeconomic forecast was used, it was found that the long-term economic and demographic forecasts were proven as critically important to the initial analytical and technical foundation for the regional economic and demographic forecast used in each previous study. One such assignment was completed during the very uncertain economic times just after the turn of the century and just as the 2005-07 housing market bubble was forming-deflating. We expect that the selection of the May-June 2018 Moody's Analytics U.S. macroeconomic and regional forecasts for this study will again prove to be a sound analytical and technical decision.

Overview of the Moody's May-June 2018 Forecast for the U.S. Economy: The Moody's Analytics May-June 2018 macro forecast (hereafter the "Moody's Forecast") serves as the basis for the regional baseline economic and demographic forecast that was calculated in May-June 2018 from Moody's Analytics as the starting point for this housing study. The Moody's regional economic and demographic forecast for Queensbury is a step-down forecast based on a separate forecast from the Glens Falls Metropolitan

Statistical Area ("MSA") which covers the Warren and Washington County region that utilizes the national forecast as a basis for the forecasted variables. Because the Moody's Analytics U.S. Macro Model is a closed system, the independently-forecasted variables for the region are part of a system where all regional forecasts are forced to accumulate to the national total as determined by the U.S. Macro Model. As such, although the regional and town forecasts are developed independently based on their identified quantitative relationships to the U.S. economy, the sum of all of the independent regional forecasts are also influenced by the results of the U.S. forecast and the sum of all of the regions do not exceed the forecasted variables of the U.S. as a whole.

As mentioned above, the Moody's U.S. Forecast incorporates the most recent trade, fiscal, and monetary policy changes under the current administration and their initial and projected impacts. These included the tax legislative overhaul for individuals and businesses, the ongoing international trade negotiations and tariff-related brinksmanship between the U.S. and its trading partners, current labor market dynamics concerning wage growth and extraordinarily low unemployment, and tightening monetary policy moves by the Federal Reserve, all of which have far-reaching national and regional economic implications into the conceivable future. The Moody's Forecast accommodates these policy shifts by employing a series of assumptions of how these broad policy shifts will reverberate throughout the national economy as well as the regional economy of the MSA.

More specifically, the May-June Moody's Forecast incorporates the growth trajectory the economy has enjoyed for the past several months, but predicts that the labor market currently does not contain the "slack," or number of workers labeled "underemployed,"[3] that are necessary to fill all of the open jobs. Moody's predicts that this will become a primary weakness in the near future, suppressing economic activity to some extent, as labor markets tighten further, wages and inflation increase, and business become more unable to fill an increasing number of job openings at higher wages.

The Moody's Forecast includes the caution that the full-employment status of the U.S. economy currently would eventually limit the positive macroeconomic effects of the administration's policy-induced economic stimulus during the forecast period. This was because the magnitude of the tax cuts and government expenditure multipliers generate a smaller effect on job and income growth when economic activity is near or at the full capacity. With little or no idle land, labor, or capital available to take advantage of those stimuli in the short term, less growth occurs than would otherwise be expected at a given level of stimulus. Conversely, the stimulative impact on the economy associated with the administration's actions would likely have a greater impact were the U.S. economy now experiencing economic conditions like those during the "Great Recession" of 2009, when unemployment and large amounts of unused industrial and business capacity were present. However, the current conditions within the U.S. economy are markedly different than in 2009, when economic recovery legislation was passed as the U.S. and regional economies were emerging from the last recession. Instead, it is noteworthy that the positive effects of expansionary, or deficit spending, fiscal policy is often crowded out by off-setting actions associated with a less accommodative Federal Reserve and the actions of global investors, who have a demonstrated tendency to act to push up long-term interest rates in anticipation of higher inflation and larger federal budget deficits when the economy is operating close to "full capacity.".

[3] Underemployed includes the unemployed, part-timers who want more hours, and those not looking for work and thus are not counted as unemployed but who say they would take a suitable job.

In the Moody's Forecast, higher inflation rates and higher interest rates are built-in—including core[4] consumer price inflation pushing through the two to two-and-half percent level on a sustained basis. A persistent two-and-half percent rate of core inflation would be well above the Federal Reserve's rumored inflation target. During periods when the inflation rate exceeds the target of the Federal Reserve, the Federal Reserve often responds by increasing short–term interest rates—the federal funds rate. The Moody's Forecast expects the federal funds rate to increase to over three and one half percent by early 2020, and the long-term, 10-year Treasury yield to reach as high as four percent. Moody's Analytics notes in its May-June 2018 macroeconomic forecast that this is a "classic symptom" of an overheating U.S. economy, which has historically ended in an economic recession or downturn.

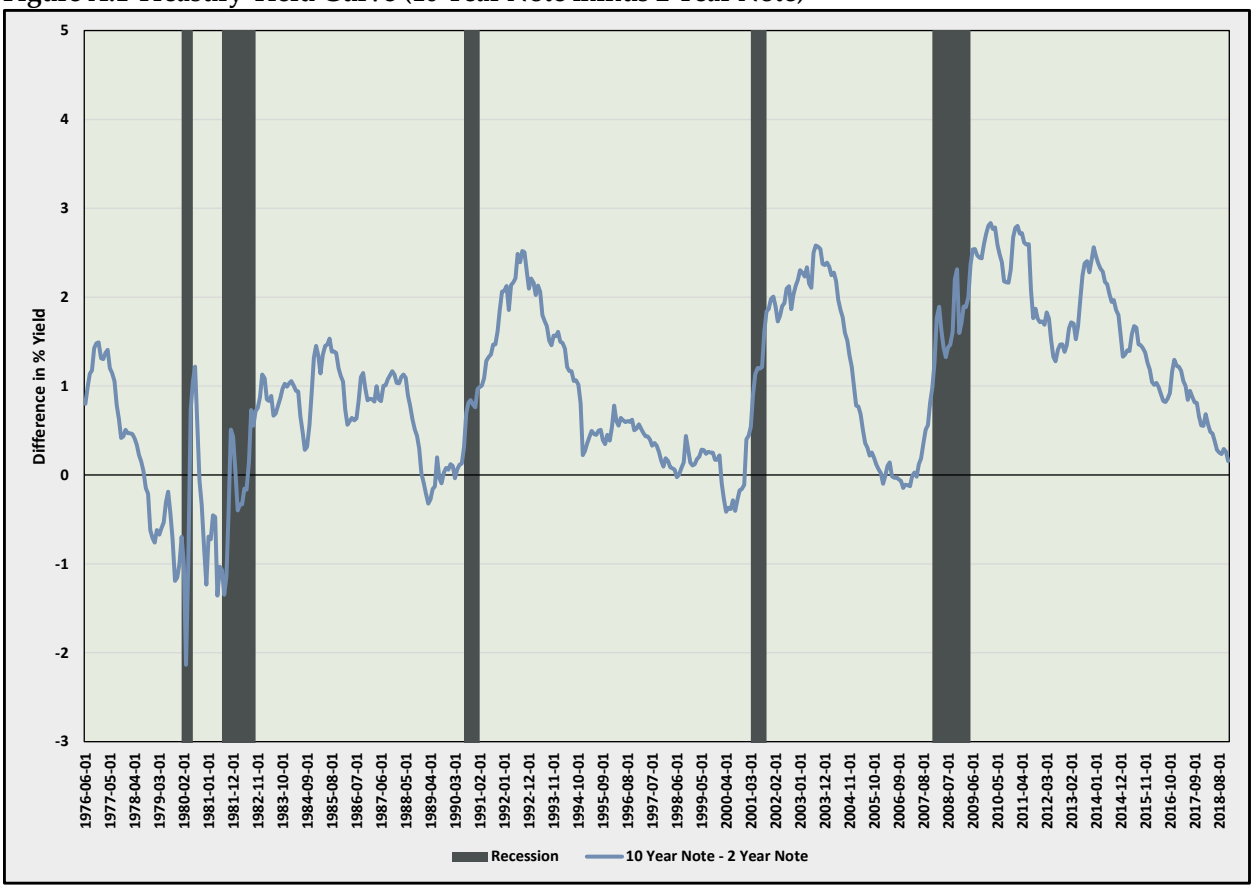
Beyond the initial four years to five years of the forecast time frame, the Moody's Forecast does not expect the Administration's actions to materially alter the long-run growth potential of the U.S. or MSA regional economy. Moody's Analytics expects the long-run growth potential of the U.S. economy as measured by real U.S. GDP[5]—the output growth potential that is consistent with stable unemployment—to remain the same. In effect, Moody's Analytics expects that the policy proposals of the new administration will not alter the two percent per annum long-term growth potential of the U.S. economy. Moody's Analytics notes in the May-June 2018 forecast that the corporate tax reform should provide a meaningful boost to the economy's growth potential. The lower marginal rates and the adoption of a territorial tax system will likely lower the cost of capital for many U.S. businesses and, as a result, encourage increased capital investment activity. Moody's Analytics also notes that more investment and a larger capital stock, in turn, will act to lift labor productivity growth and the U.S. economy's growth potential.

However, the Moody's Forecast also includes the expectation that the positive effect on the U.S. and regional economy's growth potential will require time to develop, and this "development" time frame is assumed under the Moody's Forecast to extend beyond the current administration. While the administration's policy initiatives could meaningfully add to the U.S. economy's growth potential during the near term, these initiatives are not expected to be "game changers." While the initial period under this policy regime has shown a boost to economic activity, there are significant barriers to long-term sustained annual GDP growth of 4.0%. As a result, the Moody's Forecast predicts a possible correction, or the downward portion of the current business cycle, to be apparent by the Summer of 2020.

Among the primary indicators which Moody's cites to back up this prediction are the natural rate of unemployment and the inversion of the yield curve (The difference between long-term and short-term Treasury yields, seen below).

[4] That is the inflation rate excluding volatile food and energy prices.
[5] GDP means Gross Domestic Product.

Figure A.1 Treasury Yield Curve (10 Year Note minus 2 Year Note)



While the specific number associated with the "natural" unemployment rate can be debated due to its very complex interplay of determinants, Moody's reports that its estimate at 4.5% mirrors most alternative estimates by analysts. This national unemployment rate was achieved during the summer of 2017, and the indicator has continued to decline since, reaching 3.7% during September 2018. Drawing on historical evidence that, on average, recessions have occurred approximately three years after the economy has moved beyond full employment, leads Moody's forecasters to their assumption of a recession in Summer of 2020. Similarly, an inverted yield curve is also a leading indicator of a recession. Citing the so-called "policy yield curve," Moody's measures the difference between the 10-year Treasury bond yield and the federal funds rate. If the curve inverts in the later stages of a business cycle, it shows that investors are anticipating lower yields from long-term bonds from a sluggish economy. Moody's predicts an inversion to the yield curve occurring in summer 2019, and citing the historical length of time between the inversion of the yield curve and the next recession, averaging one year, this again leads Moody's to assume a Summer 2020 recession in its forecasting.

The Moody's Forecast does not expect that the net effect of these policy changes, when implemented and integrated into the U.S. economy's supply side, will achieve the administration's stated objective of sustained four percent annual growth rates for the U.S. economy over the long term. Moody's predicts that the stimulative effect of tax reform or other government spending and investment may to a large degree be off-set by trade goals currently under pursuit. Those trade agreement re-negotiations and tariff impositions may hamper the U.S. economy's future performance by leading to higher prices for commodities and intermediate goods. Such policy changes could be expected to impede competition and productivity

growth over the longer term in the U.S. economy. Overall, these negative and positive policy shifts within the U.S. economy are expected to result in little net change over the longer term due to the expected cross-cutting policy changes.

Forecast Model Details:

Since the Moody's Analytics U.S. Macroeconomic Model is a foundational part of this study, this section is intended to describe this sophisticated tool and to provide the reader with a road map to the model's construction. The Moody's Analytics U.S. Macroeconomic Model (hereafter the "Moody's U.S. Macro Model") is a large scale, multi-equation structural econometric model of the U.S. economy that is designed to produce a conjoined short-term and long-term forecast of the U.S. economy. The model includes more than 1,800 published and unpublished intermediate variables that split the difference between the theoretical "short" and "long" term time boundaries, defined by a family of quantitative models which employ pure time series methods. The analytical priority is to obtain the purest "statistical fit" for the time series data while employing few, if any, assumptions about empirical or theoretical underpinning of how the economy operates. This is combined with a family of quantitative models which are used to forecast the economy by heavily relying on theoretical applications of microeconomic theory, based on a carefully crafted set of theory-based assumptions, which is alternative to the first technical approach. The U.S. macroeconomic and accompanying regional forecasting models maintained by Moody's Analytics reflect a blending of the two types of model theory presented above. The Moody's U.S. Macro Model relies on the approach of "specifying, estimating, and then solving simultaneously" a large set of empirically-based equations that are intended to "mirror the structural workings" and inter-relationships of the U.S. economy.

The theory behind the Moody's U.S. Macro Model can be summarized as an intersection of the U.S. economy's aggregate demand and aggregate supply. Over the shorter term time horizon, the Moody's U.S. Macro Model assumes that "ups and downs" in economic activity are a function of changes in aggregate demand. This assumes that aggregate supply—or the growth potential of the U.S. economy—remains "unchanged" during that theoretical "short-term" time horizon, or in other words, the level of resources and technology that are available for output growth do not change. Over the longer term, Moody's U.S. Macro Model does incorporate changes in supply into the economy's growth potential. By incorporating the supply side changes, such as expansions in labor and capital and changes in technology which allow the economy's inputs to be transformed into higher levels of output at higher levels of efficiency, the longer-term Moody's Analytics macroeconomic forecast therefore reflects the Moody's U.S. Macro Model interaction between aggregate supply and aggregate demand. According to Moody's Analytics, this interaction is captured mathematically in the relationship between three key macroeconomic variables for the U.S. economy. These include:

- GDP depends on aggregate spending, which in turn depends on the expected real rate of interest, or the nominal rate less future inflation;
- Nominal interest rates are determined both by monetary policy and by private demand for credit, both of which are influenced by GDP;
- Inflation is determined by firm price-setting choices, which depend on the level of real activity and inflation expectations.

In its technical documentation of the Moody's U.S. Macro Model,[6] Moody's Analytics points out that the above mathematically describes a system of three equations that can be solved for the three unknowns—real or inflation-adjusted GDP, nominal-dollar interest rates, and inflation—conditional on given expectations of future income and inflation for the U.S. economy. Drs. Zandi and Hoyt further elaborate that the classical long-run equilibrium for the economy is achieved at the point where expectations are consistent with reality. When this occurs in the economy, the level of real output, interest rates and inflation remain stable at equilibrium values governed entirely by the supply side of the economy. However, they note that in the short run, a shock to any part of this system can cause spending and inflation to depart from expectations. If that occurs; it causes departures in current growth, interest, and inflation rates from their long-run equilibrium values, giving rise to business cycles—the recurring ups and downs in economic activity that have characterized the U.S. economy that have been documented by the National Bureau of Economic Research ("NBER") since the middle of the 1800s.

Within the context of the above, the Moody's U.S. Macro Model includes a system of equations covering all aspects of the U.S. economy typically expected in classical macroeconomic theory. Aggregate demand in the Moody's U.S. Macro Model is disaggregated into consumption, business investment, international trade, and government expenditures. The key categories of macro activity included in the model include: (1) consumer spending, (2) gross private domestic investment, (3) international trade, (4) government spending and fiscal policy, (5) aggregate supply, (6) inflation, (8) monetary policy and financial markets, (9) personal income and corporate profits, (10) labor markets, and (11) housing. The Moody's U.S. Macro Model also includes break outs of key variables in the consumer sector, components of personal income, and output-jobs by industry. The detail for each of the eleven activity areas is summarized below.

Consumer Spending: Consumer spending is a key part of the economy and is disaggregated into spending on motor vehicles and parts, durable goods excluding motor vehicles, nondurable goods, and services as the key components of spending. Within the Moody's U.S. Macro Model, each of these consumption components is modeled on a per capita basis to account for population growth. These categories are modeled as a function of real or inflation-adjusted income and real or inflation-adjusted household net worth. Energy prices, as they impact the consumption of vehicles, nondurable goods and services are also factored in to the consumer spending's system of equations. The Moody's U.S. Macro Model treats vehicle spending as an intermediate step—since it is a key part of consumer spending as a durable or "big-ticket" good. Factors particular to the automobile market also have a significant influence on automobile purchases, so Moody's treats them separately within the broader framework of consumer durable purchases. The components of durable goods excluding motor vehicles, nondurable goods and services are modeled separately but forced to sum to the appropriate aggregate expenditure category. Other variables including unemployment, consumer sentiment, demographic trends, home sales, and the price of the particular good or service relative to the prices of all consumer goods and services are included in the models that support this macro activity area of the Moody's U.S. Macro Model.

Gross Private Domestic Investment: Gross private domestic investment is divided in the Moody's U.S. Macro Model into three different categories: residential construction, fixed business investment, and inventory investment. Each category of investment is determined by different factors which reflect their differing cyclical patterns and macroeconomic basis. Estimates of residential construction activity are

[6] See U.S. Macro Model Methodology, April 2015; Dr. Mark Zandi and Dr. Scott Hoyt, Moody's Analytics; Economic & Consumer Credit Analytics, pp. 1-15. The description herein draws heavily from the above model documentation which was published as part of Moody's Analytics' work regarding "stress-testing" analyses for U.S. financial institutions. The technical information regarding the Moody's U.S. Macro Model's theoretical construction is also useful for understanding why and how this tool was employed in this housing study for the town.

impacted by household formation growth (i.e. number of new households being started) and housing affordability. Housing affordability, in turn, is determined by mortgage rates, house prices, and income growth; tax law changes; consumer sentiment; and lending standards established by mortgage lenders. Measures of residential construction activity included in the Moody's U.S. Macro Model include single- and multifamily housing starts, existing-home sales, and several measures of house prices—including the FHFA-HPI[7]. The FHFA HPI is thought to be a good proxy for housing prices because it includes all sale and re-financing transactions within a geographic area where an appraisal is used to establish housing value or price. The FHFA HPI excludes house transactions involving "jumbo" mortgages.[8]

Fixed business investment in the Moody's U.S. Macro Model is divided into four categories of equipment and software, three categories of intellectual property, and five categories of nonresidential structures. Moody's Analytics explains that business investment plays an important role in both the demand and supply sides of the economy. On the demand side, investment is a critical determinant of the business cycle because it responds to, and therefore amplifies, shifts in output. In the traditional accelerator/multiplier theory, the level of investment depends on the change in expected output; investment changes will in turn stimulate further movements in output through the multiplier effects. Investment influences the supply side of the economy since it is the principal determinant of potential output and labor productivity. Investment spending, under the Moody's U.S. Macro Model construct, adds to both the stock of capital available per worker and also determines the extent to which the capital stock embodies the latest and most efficient technology. The Moody's U.S. Macro Model specification of the investment equations is based on the neoclassical investment theory of individual firms. Following this approach, net investment is modeled as a function of changes in expected output and the cost of capital. The cost of capital is equal to the implicit cost of leasing a capital asset—per economic theory.

Although most theoretical analyses assume that businesses do not face constraints on investment funds, in practice there are limits to the availability of credit. Corporate cash flow and debt levels are therefore also important determinants in the investment equations in the Moody's U.S. Macro Model. Investment in intellectual property is dependent on technology spending and profits. Investment in different types of nonresidential structures is driven in the Moody's U.S. Macro Model by construction put in place, which is in turn determined by measures that proxy for absorption of space, vacancy rates, and government spending. Investment in mining structures is closely linked to changes in oil prices. Inventory investment is divided into farm and nonfarm inventories. Nonfarm inventory change is further divided into construction and mining, manufacturing, and wholesale and retail inventories. Inventory investment is dependent on final sales and production which is "proxied" by capacity utilization—a commonly reported level of asset utilization by industry category.

International Trade: World trade has been growing rapidly and has become more important to the U.S. economy in recent decades. This trend is expected to continue, despite the campaign rhetoric attributable to representatives of the new administration. The Moody's U.S. Macro Model includes an international trade sector that captures the interactions between foreign and domestic prices, interest rates, exchange rates, and estimated product flows. Within the model, export prices and volumes are determined by what are called stochastic equations, while nominal trade flows are calculated as identities. Merchandise trade

[7] FHFA refers to Federal Housing Finance Agency Housing Price Index.

[8] A jumbo mortgage is a house loan for an amount that exceeds conforming loan limits established by regulation. The jumbo loan limit is $417,000 in most regions of the United States. The limit on jumbo loans is $625,500 in the nation's highest-priced areas.

flows are disaggregated between goods and services with imports of automobiles and parts also modeled separately within the Moody's U.S. Macro Model.

The key determinants of export volumes are global GDP growth and both the real and nominal trade-weighted value of the U.S. dollar. The structural equations in the Moody's U.S. Macro Model for imports allow a richer specification than do the corresponding export equations. Real imports are determined by specific domestic spending categories and relative prices. Projections of international economic activity are determined using the Moody's Analytics international economic model system and are provided exogenously[9] to the Moody's U.S. Macro Model and regional economic model system.

Government Spending and Fiscal Policy: Federal government spending and fiscal policies are treated in the Moody's U.S. Macro Model as partially exogenous to the U.S. economy, since legislative and administrative decisions are not tied with enough predictability to changes in macroeconomic conditions. At its most basic macroeconomic level, federal government spending is the sum of federal consumption and investment expenditures. These two expenditure categories are, in turn, divided into defense and nondefense categories. Federal defense and nondefense expenditures are each the sum of compensation and non-compensation federal purchases. Total federal government outlays in the Moody's U.S. Macro Model include the sum of defense and nondefense consumption expenditures plus transfer payments, net interest payments, subsidies less current surplus of government enterprises, federal grants-in-aid to state and local governments, less wage accruals net of disbursements. All outlays are exogenous except for transfer payments, which are a function of unemployment insurance payments, net interest payments (which are a function of interest rates and the publicly held Treasury debt), and government consumption (which is included in the Moody's U.S. Macro Model as a component of GDP and assumed to grow in a trend-like manner). Total federal government receipts are the sum of personal tax receipts, social insurance contributions, corporate profits tax receipts, and indirect tax receipts. Personal taxes account for the bulk of federal tax collections—accounting for nearly one-half of total receipts. Personal tax receipts are equal to the product of the average effective income tax rate times the tax base. The tax base is defined as personal income less nontaxable components of income (which include other labor income and government transfers). Most average effective tax rates are exogenous and actually comprise key policy levers in the model. The personal income tax rate is modeled based on high, low and middle marginal tax rate and changes in real stock and home prices. This allows for more policy levers in the Moody's U.S. Macro Model and account for capital gains tax receipts.

The federal budget deficit is measured both on a National Income and Product Accounts (or "NIPA") basis and on a unified basis. Differences between the two measures depend on accounting methods, coverage, and timing. For example, the unified budget counts receipts on a cash collections basis; the NIPA records corporate profit receipts on a liability basis (as is done in the so-called GDP accounts), and personal income taxes and Social Security payments on a "when paid" basis. Thus, unified outlays are counted when funds are disbursed. In contrast, NIPA outlays are recorded at the time of delivery. The state and local government sector of the Moody's U.S. Macro Model is modeled similarly to the federal sector. Revenues are a function of exogenous average effective tax rates and their corresponding national income categories, plus federal grants-in-aid. Expenditures for all but net interest costs are exogenously determined. Government spending in the NIPA calculations of GDP includes government consumption and adds

[9] The term "exogenous" means that this variable is estimated using quantitative tools other than the U.S. Macro Model. Separate values are inputted into the Moody's U.S. Macro Model that have been determined elsewhere (e.g. through other models) that are not run jointly with the Moody's U.S. Macro Model and are therefore outside or "exogenous" to the model.

government investment spending. Other components are considered transfers rather than economic output. One unique feature of the government sector of the NIPA accounts is that, unlike most modeling of expenditures, government spending is forecast in nominal terms, with price deflators for each category of expenditures forecasted as well. Real values are then derived as identities within the Moody's U.S. Macro Model.

Aggregate Supply: The supply side of the Moody's U.S. Macro Model describes the U.S. economy's capabilities for producing output. By extension, the Glens Falls MSA regional economic model, which provided the baseline economic and demographic forecast for this study, describes the same capacity for producing output for the MSA. In the Moody's U.S. Macro model, aggregate supply or potential GDP is estimated by a Cobb-Douglas production function that combines factor input growth and improvements in productivity (e.g. through advances in technology that improve output efficiency). Factor inputs include labor and business fixed capital, and are defined by an estimate of the full-employment labor force and by the existing capital stock of private nonresidential equipment and structures. Population is estimated based on Census Bureau birth and death rates and immigration rates that are determined by the economic performance of the United States relative to the rest of the world. The baseline population forecast for the MSA was determined in a similar way, except the relative performance is for the MSA relative to the closed system for the U.S. economy—with the MSA's forecast part of an algorithm where the totals for the parts (e.g. all regional forecasts) are relationally forced to sum to the national total. Total factor productivity is calculated as the residual from the Cobb-Douglas production function estimated at full employment. A key unknown in estimating aggregate supply is what the full employment level of labor actually is. This level is derived from a measure of potential labor supply and a measure of the long-run equilibrium unemployment rate for the U.S. economy. This rate, often referred to as NAIRU or the **N**on-**A**ccelerating **I**nflation **R**ate of **U**nemployment, is the unemployment rate consistent with steady price (and wage) inflation. It is also the unemployment rate at which actual GDP equals potential GDP.

Estimation of the NAIRU proceeds with the estimation of an expectations augmented Phillips curve relationship between inflation and unemployment. The inflation measure used is the chain price index for personal consumption expenditures excluding food and energy. The NAIRU estimated in this Phillips curve is the "married male" NAIRU. This group is chosen for the Moody's U.S. Macro Model because "married males" are expected to have the greatest attachment to the labor market, and thus be less susceptible to changes in labor force participation than other groups that may be affected more by changing demographic composition, changed work habits, or reduced discrimination (which are typical possible factors that drive labor force participation). This stability allows the Moody's U.S. Macro Model to more accurately estimate a married male (MM) NAIRU that is constant over time. Married female and unmarried NAIRUs are derived via statistical techniques such as regression from the married male NAIRU. These individual NAIRUs are demographically weighted to arrive at an overall NAIRU.

The growth of aggregate supply in the Moody's U.S. macro Model is the fundamental constraint on the long-term growth of aggregate demand. When actual GDP is above or below potential GDP, there is an output gap. Given currently high unemployment relative to NAIRU, the current output gap is large. Inflation created by demand that approaches or surpasses potential GDP (a positive output gap) raises credit costs and weakens consumer confidence, thus constraining aggregate demand when the economy is overheating. Conversely, lower inflation and easier credit stimulate demand when economic conditions are slack. Thus, output and employment gaps form the key determinants of prices in the Moody's U.S. Macro Model, as price movements become the mechanism for restoring the full-employment level of output. An increase in government spending, for example, narrows the output gap, driving up output prices and lowering the unemployment rate. Higher prices and a tighter labor market, in turn, tend to force

up wage rates, further putting upward pressures on prices- inflation, although this effect is partially offset by an increase in labor productivity. Higher inflation and a stronger real economy drive up interest rates and reduce real income gains. The net effect is a dampening of aggregate demand to bring it back in line with aggregate supply over the long-term.

Inflation: Decisions about prices are made by individual firms. Firms adjust their prices in response to conditions in their markets. If demand has been strong and they are producing more than they think is appropriate given their current prices, they will raise their prices. If demand has been weak and the firms are producing less than appropriate, they will lower their prices. When the Moody's U.S. Macro Model handles this process in terms of aggregate variables—GDP and the price level—prices will tend to rise whenever GDP has been above potential and will tend to fall when it has been below potential. Firms make their price decisions with the prices of their inputs in mind. The most important input is labor. Therefore, the behavior of the wage rate is a major determinant of the price adjustment process. Wages and demand pressures on prices determine a relationship between the deviation of GDP from potential and inflation. This is embodied in the wage equations of the Moody's U.S. Macro Model through an expectations augmented Phillips curve, where wages react to expected inflation and unemployment. The fundamental wage equation in the model is the wage component of the Bureau of Labor Statistics' quarterly "Productivity & Costs" release. The explanatory variables include the difference between the actual unemployment rate and the NAIRU, private nonfarm labor productivity growth, and consumer prices. Within the Moody's U.S. Macro Model, the impact of prices takes three years to fully play out in the model. In addition to labor, energy is another important determinant of business costs.

In the specification of the Moody's U.S. Macro Model, firms are expected to be quicker to pass through energy price increases to consumers on goods that are especially sensitive to oil prices such as gasoline and agricultural commodities. Firms also pass through price increases on services such as airfare, train fare and wholesale trade after material and persistent rises in their energy costs. Electricity and natural gas consumer prices are slower to rise, since utilities must seek the permission of policymakers in order to raise prices in the regulated utilities industry. Energy is an input cost to virtually every firm in every industry. As such, rising energy prices boost the prices for all goods and services to the extent that firms pass through price increases.

More than 60 producer price index components are included and forecasted in the Moody's U.S. Macro Model. Most are forecast based on historical performance relative to demand and other relevant drivers. More aggregate producer price indexes are determined by a weighted average of other producer prices and labor costs. The weights reflect the composition of each producer price's factor inputs. The consumer price indexes in the Moody's U.S. Macro Model are driven by producer prices, labor costs, and import prices. Import price deflators, for example, are direct determinants of many of the indexes for consumption goods. The core components of consumer prices are determined by the appropriate price deflators. Oil and food prices are determined exogenously. Consumer expenditure deflators are primarily determined by related consumer price indexes, although in some cases more fundamental drivers are utilized. The aggregate PCE deflator is determined stochastically and component deflators are constrained to be consistent.

Monetary Policy and Financial Markets: The conduct of U.S. monetary policy by the Federal Open Market Committee (or "FOMC") of the Federal Reserve is a very important part of the financial environment surrounding U.S. and regional housing markets. The key benchmark short-term rate in the Moody's U.S.

Macro Model is the federal funds rate. The federal funds rate[10] is determined within the model over the period including when former Fed Chair Paul Volker became chair of the Federal Reserve Board in 1979 through the end of the forecast period. This period includes a number of very different approaches to the conduct of monetary policy by the Federal Reserve, including former Chair Volker's implementation of monetarist theories, former Chair Alan Greenspan's policy of opportunistic disinflation, and former Chair Ben Bernanke's use of unconventional monetary policy tools to combat the "Great Recession" and financial crisis, and subsequent slower than desired recovery.

Despite the differences in approach, monetary policy as represented by the federal funds rate is included in the Moody's U.S. Macro Model with a so-called "Taylor Rule" specification—reflecting the Federal Reserve's dual objectives of fostering economic growth and maintaining long-term price stability. Developed by Stanford economist John Taylor, the Taylor Rule has been used as an important reference point for policymakers as they craft monetary policy as the economy has changed over time. The Taylor Rule is a central bank reaction function that computes an optimal federal funds rate from the equilibrium funds rate—that rate consistent with an economy operating at full-employment, growing at its potential with inflation at the Federal Reserve's target. Stock market volatility is also included in the reaction function to proxy for the impact of financial market stress on policymakers' views of the appropriate funds rate target. When the economy is operating at full employment and inflation is at the rate consistent with the Federal Reserve's definition of price stability, the federal funds rate should be equal to its equilibrium rate.

In addition, the Taylor Rule prescribes the central bank to lower interest rates when either inflation or the economy is operating below its respective target, and vice versa. The Taylor Rule has done a reasonable job in tracking actions by the FOMC since the late 1970s. As the Taylor Rule was vetted by accurately predicting Federal Reserve's actions, it provided financial markets a good metric to ascertain the path of monetary policy. For much of the period after the "Great Recession," the Taylor Rule called for a negative federal funds rate. Since a negative interest rate of any kind, much less a benchmark interest rate like the federal funds rate, is extremely unlikely in reality (not to mention a negative interest rate would also create major issues in the specification of any U.S. macro model), at a certain point close to "zero," a minimum, positive federal funds rate is imposed within the model.

For the remainder of the financial sector, money demand equations are derived from portfolio theory; the demand for cash depends on the level of income, the expected level of transactions, and the opportunity cost of holding liquid assets as opposed to other interest-earning instruments. Money in the Moody's U.S. Macro Model is not a single asset, but rather a group of asset categories with varying degrees of liquidity. At one end of the spectrum is currency, which can be exchanged directly for assets; money also includes savings and time accounts, and, at the other end of the spectrum, certificates of deposit. Required reserves—determined by the components of money demand and the monetary policy lever specifying the required ratio—define the demand for reserves in the banking system. Free reserves, defined as non-borrowed reserves less required reserves, are a measure of disequilibrium in the Moody's U.S. Macro Model. Total, borrowed, and excess reserves are included for completeness of U.S. financial markets within the Moody's U.S. Macro Model.

[10] The federal funds rate is the interest rate at which depository institutions (banks and credit unions) lend reserve balances to other depository institutions overnight, on an uncollateralized basis. It is a benchmark rate that lays the groundwork for other consumer rates (like mortgage interest rates) that are charged in retail banking and other non-bank retail lending markets.

Personal Income and Corporate Profits: While the income side of the NIPA accounts is not as carefully followed as the demand side of the accounts, it is the income sector that makes macroeconomic models truly general equilibrium models. One household's spending is income to another household, while income generated by production is a constraint on final demand. Moreover, the distribution of income among households, businesses, and government has significant effects on the composition of output and on the dynamics of the business cycle. National income is defined as the sum of the payments to the factors of production. The Moody's U.S. Macro Model has behavioral equations for all nonprofit income flows including compensation of employees (wages and benefits), other labor income, employer contributions for social insurance, farm and nonfarm proprietors' income, and net interest paid by business.

Corporate profits with inventory valuation adjustment and capital consumption adjustment are estimated by quantitative methods such as regression on output, labor costs, and prices. Corporate cash flow is determined by subtracting dividends and corporate taxes from corporate profits and adding depreciation allowances. A key stock price variable in the U.S. Macro Model has been the S&P 500 Composite Stock Price Index. This is modeled as a function of after-tax profits, stock price volatility, and a distributed lag on the 10- year government bond rate. In 2015, a new variable, the Dow Jones total stock market index, has been added to the model in order to meet Comprehensive Capital Analysis and Review reporting requirements. Over history, the two series have shown very similar behavior. Consequently, the S&P variable is the primary driver for the Dow Jones Index.

Labor Markets: The labor market sector in the Moody's U.S. Macro Model uses labor/employment concepts of two major types as defined by the U.S. Bureau of Labor Statistics: (1) payroll jobs (which is a full-time position by place of work), and (2) household labor/employment-unemployment (which is a count of job holder residents or unemployed based on where they live—and each individual is counted as one employed or unemployed if they meet the required criteria for "participating in the labor force," even if an employed resident holds more than one position or job).[11] Within the household data set, the labor force, the number of unemployed, and the rate of unemployment are all calculated for the household data series. Private payroll jobs is modeled within the Moody's U.S. Macro Model from both a top-down and bottom-up approach. Total private jobs are derived as a function of labor hours demanded, which in turn is a function of output. Labor hours are modeled based on lagged growth in output and labor productivity. Total payroll jobs are also modeled separately at the one-digit and two-digit NAICS level.

To properly examine industry specific employment impacts attributed to changes in consumer spending, business investment, trade and federal and state government spending, the Moody's U.S. Macro Model has incorporated data from the 1997 benchmark of the Bureau of Economic Analysis' U.S. Input-Output Accounts. In the Moody's Analytics U.S. Macro Model technical specifications, Moody's indicates that these data are used to generate quarterly estimates of gross product originating (GPO) by industry as follows:

[11] It should be noted that this housing study uses both of these two employment concepts. In addition, this housing study uses a broader job concept as defined by the Bureau of Economic Analysis as part of its national income and product accounts program. The BEA definition of jobs is a broader employment-job concept than either of the series discussed above and was used (particularly in the Regional and Town models) because it presents a more complete employment-jobs picture that affects housing demand—including self-employed (proprietors), and farm and military jobs which are not a part of the Current Employment Survey (or CES) series from U.S. Bureau of Labor Statistics that counts nonfarm payroll jobs. The nonfarm payroll job concept which includes only non-agricultural jobs and does not include self-employed and proprietors. However, Moody's job-employment series are both important macro variables that provide important information on economic performance. As such, they remain key macro variables in the Moody's U.S. Macro Model and regional forecast model employed in this study.

> GPO by industry *equals* the industry's share of total consumption *times* Real personal consumption expenditures; *plus* the industry's share of investment *times* Real investment *plus* the industry's share of exports *times* Real exports *plus* the industry's share of imports *times* Real imports *plus* the industry's share of federal spending *times* Real federal gross investment and consumption *plus* the industry's share of state and local spending *times* Real state and local gross investment and consumption.

Industry payroll jobs depend on the industry specific gross product originating and productivity terms in some cases for construction jobs. This intermediate value of construction payroll jobs is then divided by the sum of all the intermediate estimates of job categories. This share is then applied to total private jobs estimated separately. Thus, relative industry payroll job shifts occur, even though the actual industry payroll job levels are "forced" to equal the change in top-line, total private payroll jobs.

Household employment (which again is the count of employed residents by where they live) is modeled as a function of total payroll jobs by place of work. The two measures of jobs-employment can vary over the business cycle given changes in the number of people holding multiple jobs and the number of self-employed. These differences should be captured in the national level variable. The labor force is determined by the working age population, real hourly compensation and the share of the population of prime working age. The rate of labor force participation is determined through an identity. The number of unemployed and the unemployment rate are determined as identities from the household employment and labor force projections.

The Personal Income sector of the Moody's U.S. Macro Model is further broken down into eight different components. Wages and salaries, the largest income category, are divided into manufacturing, private service producing, and construction and mining categories. In the same spirit as jobs-employment, wages and salaries are modeled from a top-down and bottom-up approach. Total wages and salaries are modeled as a function of average weekly earnings. Individual wage and salary categories are modeled as a function of industry employment, industry average hourly earnings, and a broad measure of hours worked. Outside of the wages and salaries category, the other non-wages and salaries income categories including supplements to wages and salaries, basically benefits, are estimated as a function of wages and salaries. The sizable constant term for this category of Personal Income in the Moody's U.S. Macro Model reflects the rapid growth in this category of income over the past two decades due to rising medical costs and nonwage benefits. Contributions for social insurance are also a function of wages and salaries and tax rates.

Interest income in the Moody's U.S. Macro Model is estimated from a regression on a weighted average of short- and long-term interest rates. Dividend income is a function of corporate dividend payments. Rental income is exogenous, and proprietors' income is derived from output and profits. Transfer payments in the Moody's U.S. Macro Model are a function primarily of the share of the population over 65 since Social Security benefits are the largest component. The unemployment rate and the rate of consumer price inflation also play a role in the Moody's U.S. Macro Model for this component.

Housing: The housing sector determines the number of single-family and multifamily housing permits, starts, completions, new- and existing-home sales, house prices, mortgage originations for purchase and refinancing, and mortgage delinquency and foreclosure rates. Over the long run, demographic factors such as household formation and income growth drive growth of the housing market. Business cycles and construction cycles, as represented by the jobless rate and the availability and cost of labor and building materials, will create disequilibrium between housing demand and supply in the short run. The Moody's

U.S. Macro Model of housing measures includes both these long-term and short-term forces, and provides important background for the MSA housing unit demand and unit supply estimates.

In the Moody's U.S. Macro Model, the demand for homes as expressed by new- and existing-home sales is related to household formation over the long term. Real, or inflation-adjusted, per household income growth is also an important determinant of housing demand as higher incomes make it possible for more households to buy a housing unit. The user cost of housing, or the after tax interest cost of owning a home less the expected return to buying a home, is a short-term driver of housing sales. The higher the user cost, the lower the housing unit sales. The expected return to buying a house is expected house price appreciation. The housing sales equations also include a measure of credit availability: with looser lending standards helping drive sales over the near term.

Similarly, the level of housing permits issued is largely determined by the number of household formations over the long term. Over time, the level of housing permits issued will closely follow the number of new household formations, after considering demolitions. However, permits and household formations are not equal in each period, given changes in the business cycle and building activity. Within the Moody's U.S. Macro Model, also affecting starts and sales are the general economic conditions as represented by employment or income growth, the user cost of housing, and the availability of credit. Credit availability has become a particularly important factor influencing the level of housing unit construction given recent changes in bank capital standards and the emphasis of bank regulators on credit quality. In the Moody's U.S. Macro Model, single-family housing permits are modeled based on relationships of the 30-year fixed mortgage rates to a four-quarter moving average of single family housing prices, the loan to housing price ratio, the ratio of fixed 30-year mortgage rates to 30-year adjustable mortgage rates, and real disposable income growth per household in the economy over time.

House prices within the Moody's U.S. Macro Model are specified as a function of factors that influence both the demand and supply of housing. The demand for housing depends on income per household, the jobless rate, after-tax borrowing costs, credit availability, and the distress sale share of total existing-housing sales. Income per household measures both the ability and willingness of households to purchase a home. Rising income levels in the Moody's U.S. Macro Model will result in increased house buying activity. The jobless rate also impacts consumers' willingness to buy. If consumer confidence is low, house purchases will remain lackluster even if income levels are growing. Finally, the distress sale share of total existing-house sales has had a significant impact on house prices during the recent housing boom-bust cycle, representing discounted excess supply of housing. House price appreciation and changes in the distress share are inversely correlated. As such, the Moody's U.S. Macro Model treat distress share as an explanatory variable in the house price model.

Purchase mortgage originations are modeled as a function of the value of new- and existing-home sales and the loan-to-value ratio. To account for the changing share of home sales that are for cash, the Moody's U.S. Macro Model includes the mortgage foreclosure rate. The cash share of home sales tends to be greater when there are more distress sales that are purchased by investors with cash. Refinance originations as a share of mortgage debt outstanding are determined by the difference between the current 30-year fixed mortgage interest rate and the average rate over the last five years (the average duration of a mortgage loan). The spread between interest rates on fixed and adjustable rate mortgages is also included in the model to capture the desire of ARM borrowers to refinance and lock in fixed rates when those rates are low.

Mortgage delinquency rates are determined by employment growth, house price changes, household financial obligations, and loan-to-value ratios. Job-employment growth reflects the ability of homeowners to meet their mortgage payments, while the change in house prices captures changes in the level of homeowners' equity. Significant declines in equity values are necessary before homeowners will stop making their mortgage payments altogether. Mortgage foreclosures are also included in the Moody's U.S. Macro Model as a function of lagged mortgage delinquencies, real house price movements, household financial obligations, and employment growth. The housing sector has been expanded substantially since the housing boom and bust cycle of the mid-2000s. Some notable additions to the Moody's U.S. Macro Model in the housing activity sector include the CoreLogic Case-Shiller® 20-City Single-Family House Price Index, single-family months of supply at current sales rate, and new single-family houses for sale.

Table A.1 U.S. Macro Forecast Variables from Moody's Analytics

U.S. Economic Forecast Summary							Average Annual Percent Change			Average Annual Percent Change		
	1990	2001	2007	2017	2022	2027	1990-01	2001-07	2007-17	2017-22	2022-27	2017-27
Indicators	History				Forecast		History			Forecast		
Real National Income Accounts (Billions of Chained 2009 Dollars)												
Real Gross Domestic Product	8,955	12,682	14,874	17,096	19,238	21,168	3.2%	2.7%	1.4%	2.4%	1.9%	2.2%
Real Personal Income	7,275	10,611	12,358	14,583	16,070	17,849	3.5%	2.6%	1.7%	2.0%	2.1%	2.0%
Real Per Capita Income ($/Person)	29,081	37,204	40,962	44,735	47,705	51,257	2.3%	1.6%	0.9%	1.3%	1.4%	1.4%
Price and Wage Indexes												
U.S. Consumer Price Index (1982-84=100)	130.7	177.0	207.3	245.1	276.0	308.2	2.8%	2.7%	1.7%	2.4%	2.2%	2.3%
GDP Implicit Price Deflator (2009=100)	66.8	83.8	97.3	113.4	126.5	139.2	2.1%	2.5%	1.5%	2.2%	1.9%	2.1%
Current Dollar National Income (Billions of Dollars)												
Personal Income	4,906	8,992	12,000	16,429	20,243	24,676	5.7%	4.9%	3.2%	4.3%	4.0%	4.2%
Wages & Salaries	2,741	4,954	6,395	8,353	10,293	12,432	5.5%	4.3%	2.7%	4.3%	3.8%	4.1%
Non-Wage & Salaries	2,165	4,037	5,605	8,076	9,949	12,244	5.8%	5.6%	3.7%	4.3%	4.2%	4.2%
Dividends, Interest & Rent	1,023	1,649	2,356	3,186	3,820	4,652	4.4%	6.1%	3.1%	3.7%	4.0%	3.9%
Transfer Receipts	597	1,193	1,728	2,860	3,586	4,456	6.5%	6.4%	5.2%	4.6%	4.4%	4.5%
Per Capita Income ($/Person)	19,611	31,525	39,775	50,398	60,091	70,862	4.4%	4.0%	2.4%	3.6%	3.4%	3.5%
Median Household Income ($/Household)	31,102	42,703	50,740	59,442	68,984	79,679	2.9%	2.9%	1.6%	3.0%	2.9%	3.0%
Labor Force and Employment (Millions)												
U.S. Civilian Labor Force	125.9	144	153	160	167	173	1.2%	1.1%	0.5%	0.8%	0.7%	0.8%
Total U.S. Employment	118.8	137	146	153	159	164	1.3%	1.1%	0.5%	0.7%	0.7%	0.7%
Unemployment Rate (%)	5.62	4.74	4.62	4.35	4.94	5.23	-1.5%	-0.4%	-0.6%	2.6%	1.2%	1.9%
Nonfarm Payroll Employment	109.5	132.1	138.0	146.6	152.7	157.5	1.7%	0.7%	0.6%	0.8%	0.6%	0.7%
Private Nonfarm	91.1	111.0	115.8	124.3	130.0	133.9	1.8%	0.7%	0.7%	0.9%	0.6%	0.7%
Natural Resources and Mining	0.8	0.6	0.7	0.7	0.8	0.7	-2.1%	3.0%	-0.6%	2.4%	-0.4%	1.0%
Construction	5.3	6.8	7.6	7.0	7.9	8.2	2.4%	1.9%	-0.9%	2.6%	0.7%	1.7%
Manufacturing	17.7	16.4	13.9	12.4	12.0	11.2	-0.7%	-2.8%	-1.1%	-0.7%	-1.3%	-1.0%
Transportation and Utilities	4.2	5.0	5.1	5.7	5.8	5.8	1.5%	0.4%	1.2%	0.3%	-0.1%	0.1%
Information	2.7	3.6	3.0	2.8	2.8	2.8	2.8%	-3.0%	-0.8%	0.0%	0.0%	0.0%
Wholesale Trade	5.3	5.8	6.0	5.9	6.1	6.2	0.8%	0.7%	-0.2%	0.6%	0.4%	0.5%
Retail Trade	13.2	15.2	15.5	15.9	16.1	16.4	1.3%	0.3%	0.2%	0.3%	0.4%	0.3%
Financial Activities	6.6	7.9	8.3	8.5	8.7	9.2	1.6%	0.9%	0.1%	0.7%	1.0%	0.9%
Professional and Business Services	10.8	16.5	17.9	20.5	22.1	23.6	3.9%	1.4%	1.3%	1.6%	1.3%	1.4%
Education and Health Services	11.0	15.8	18.7	23.2	24.6	25.9	3.3%	2.8%	2.2%	1.2%	1.0%	1.1%
Leisure and Hospitality	9.3	12.0	13.4	16.1	17.1	17.9	2.4%	1.8%	1.8%	1.2%	1.0%	1.1%
Other Services	4.3	5.3	5.5	5.8	5.9	6.0	1.9%	0.7%	0.5%	0.5%	0.2%	0.3%
Government	18.4	21.1	22.2	22.3	22.7	23.7	1.3%	0.8%	0.0%	0.4%	0.8%	0.6%
Government - Federal	3.2	2.8	2.7	2.8	2.9	2.9	-1.3%	-0.2%	0.3%	0.8%	0.2%	0.5%
Government - State and Local	15.2	18.4	19.5	19.5	19.8	20.7	1.7%	1.0%	0.0%	0.3%	0.9%	0.6%
Population (Millions)												
Total Population	250.04	285.31	301.59	326.01	336.86	348.22	1.2%	0.9%	0.8%	0.7%	0.7%	0.7%
Ages Less than 5 Years	18.90	19.31	20.15	20.04	20.37	20.59	0.2%	0.7%	-0.1%	0.3%	0.2%	0.3%
Ages 5 to 19 Years	53.08	61.63	62.65	62.15	61.69	61.75	1.4%	0.3%	-0.1%	-0.1%	0.0%	-0.1%
Ages 20 to 44 Years	100.39	104.28	103.59	108.37	112.11	114.85	0.3%	-0.1%	0.5%	0.7%	0.5%	0.6%
Ages 45 to 64 Years	46.35	64.77	77.26	84.37	82.70	82.15	3.1%	3.0%	0.9%	-0.4%	-0.1%	-0.3%
Ages 65 Years and Greater	31.32	35.32	37.95	51.08	59.98	68.88	1.1%	1.2%	3.0%	3.3%	2.8%	3.0%
Total Households	92.07	93.39	94.76	96.31	97.73	99.27	0.1%	0.2%	0.2%	0.3%	0.3%	0.3%
Miscellaneous Indicators												
FHFA Home Price Index, (1980Q1=100, SA)	165.0	252.2	375.8	400.2	459.4	565.5	3.9%	6.9%	0.6%	2.8%	4.2%	3.5%
FHA/VA 30-Year Fixed Mortgage Rate (%, NSA)	10.0	7.0	6.5	4.1	5.5	5.8	-3.2%	-1.3%	-4.4%	5.9%	1.0%	3.4%
Housing Starts (Millions, SAAR)	1.20	1.60	1.34	1.21	1.93	1.63	2.6%	-2.9%	-1.0%	9.8%	-3.3%	3.1%
Starts, Single-Family (Millions, SAAR)	0.90	1.27	1.04	0.85	1.47	1.28	3.2%	-3.4%	-1.9%	11.5%	-2.8%	4.1%
Starts, Multi-Family (Millions, SAAR)	0.30	0.33	0.31	0.36	0.46	0.36	0.8%	-1.2%	1.5%	5.0%	-4.8%	0.0%
Existing Home Sales, Single-Family (Millions, SAAR)	2.92	4.73	4.42	4.91	4.92	5.13	4.5%	-1.1%	1.1%	0.0%	0.8%	0.4%
Existing Home Price, Single-Family (Median $)	96,755	154,422	215,544	247,792	294,622	361,952	4.3%	5.7%	1.4%	3.5%	4.2%	3.9%

Notes: N/A is "Not Available"; SA is "Seasonally Adjusted"; NSA is "Not Seasonally Adjusted"; SAAR is "Seasonally Adjusted Annual Rate"

Source: Moody's Analytics May-June 2018 US Forecast 6.30.2018 *Prepared by Economic & Policy Resources, Inc.*

Overview of the Regional MSA and Town Forecasting Process

According to the above technical description of the Moody's U.S. Macro Model, the model specifies, estimates, and then solves simultaneously, a large set of equations that "mirror the structural workings" of the U.S. economy. The model is maintained on a monthly basis by Moody's Analytics, and produces a short-term and long-term economic and demographic forecast for the U.S. economy. The structural model uses historical data from the various federal agencies which develop, publish and periodically revise these data on a regular basis. For this study, the U.S. macroeconomic forecast through calendar year 2027 that comes from the Moody's U.S. Macro Model forms the basis for the external macroeconomic drivers that help determine the short-term and long-term economic and demographic forecast for the regional MSA economy. Table A.2 (on the following page) shows the key macroeconomic variables from the Moody's Forecast which form the important U.S. economic and demographic background for the region's and town's short-term and long-term economic and demographic forecast.

As such, the first step in creating the economic and demographic forecast (including the detailed population forecast) for the region, and subsequently the Town, is derived from the Moody's Forecast, and more geographically-specific economic and demographic data from a special baseline forecast that was commissioned by the EPR-Crane Associates Team from Moody's Analytics for the regional economy. More specifically, the EPR-Crane Associates Team in March 2018 developed a comprehensive regional economic and demographic forecast through calendar year 2027 for the Glens Falls Metropolitan Statistical Area ("MSA") derived from Moody's regional model for the MSA, whose two-county area (Warren and Washington Counties) includes the entire Town of Queensbury, using the Moody's Forecast for the U.S. economy as the basis for that regional forecast.

The Moody's regional macro model, like the Moody's U.S. Macro Model, specifies, estimates, and solves simultaneously a large set of equations that mirror the structural workings of the MSA's economy in relation to the external drivers that are part of the U.S economic forecast—in this case the Moody's Forecast (completed in May-June of 2018). As mentioned above, by adopting a middle ground, the Moody's model is able to include a significant number of endogenous indicators to help explain historic changes in economic, financial, and demographic trends and to forecast future trends in GDP, interest rates and inflation and the resulting regional implications of that U.S. forecast for the region and the Town.

Over the longer term, the Moody's model construct allows the numerous and interrelated macro-economic variables that will impact the short-term and longer-term economic and demographic indicators (including population) to play themselves out in a detailed economic and demographic forecast for the region and Town. The Moody's regional model for the MSA incorporates natural population changes, births minus deaths, but also includes in population changes (both population declines or increases) driven by the region's economics—in that it assumes the economy influences the most important component of population dynamics, the in- and out-migration of resident population.

In the next section, we turn to a brief explanation on the difference between the Cornell's Program of Applied Demographics Population Projection for Warren and Washington Counties and the results of Moody's Analytics Glens Falls MSA economic and demographic forecast as adjusted by the EPR-Crane Associates Team for the Town that was used as the economic and demographic background in this town housing study.

Table A.2 Glens Falls MSA Variables from Moody's Analytics

Glens Falls Metro Region	1990	2001	2007	2017	2022	2027	Average Annual Percent Change 1990-01	2001-07	2007-17	Average Annual Percent Change 2017-22	2022-27	2017-27
Indicators	History				Forecast		History			Forecast		
Real Metro/Regional Income Accounts (Millions of Chained 2009 Dollars)												
Real Gross Metro Product	4,017	4,971	5,642	6,115	6,846	7,501	2.0%	2.1%	0.8%	2.3%	1.8%	2.1%
Real Personal Income	2,957	3,766	4,162	4,906	5,171	5,569	2.2%	1.7%	1.7%	1.1%	1.5%	1.3%
Real Per Capita Income ($/Person)	24,811	30,230	32,304	38,867	40,396	42,864	1.8%	1.1%	1.9%	0.8%	1.2%	1.0%
Price and Wage Index												
Regional Consumer Price Index (1982-84=100)	136.2	181.4	216.4	250.5	281.4	313.5	2.6%	3.0%	1.5%	2.4%	2.2%	2.3%
Current Dollar Metro/Regional Income Accounts (Millions of Dollars)												
Personal Income	1,994	3,191	4,042	5,527	6,527	7,721	4.4%	4.0%	3.2%	3.4%	3.4%	3.4%
Wages & Salaries	1,041	1,473	1,885	2,383	2,763	3,212	3.2%	4.2%	2.4%	3.0%	3.1%	3.0%
Non-Wage & Salaries	954	1,718	2,157	3,144	3,764	4,509	5.5%	3.9%	3.8%	3.7%	3.7%	3.7%
Dividends, Interest & Rent	420	530	545	888	1,079	1,308	2.1%	0.5%	5.0%	4.0%	3.9%	4.0%
Transfer Receipts	297	578	838	1,322	1,602	1,941	6.2%	6.4%	4.7%	3.9%	3.9%	3.9%
Per Capita Income ($/Person)	16,731	25,616	31,368	43,786	50,991	59,430	3.9%	3.4%	3.4%	3.1%	3.1%	3.1%
Median Household Income ($/Household)	29,970	39,932	46,586	55,045	60,280	70,027	2.6%	2.6%	1.7%	1.8%	3.0%	2.4%
Median Household Income--Owner ($/Household)	33,786	45,448	53,271	66,033	74,344	84,395	2.7%	2.7%	2.2%	2.4%	2.6%	2.5%
Median Household Income-Renter ($/Household)	17,031	22,910	26,853	31,925	36,086	40,933	2.7%	2.7%	1.7%	2.5%	2.6%	2.5%
Metro/Regional Labor Force and Employment (Thousands)												
Regional Civilian Labor Force	59.45	63.36	68.73	60.72	61.51	62.43	0.6%	1.4%	-1.2%	0.3%	0.3%	0.3%
Total Regional Employment	56.11	60.69	65.78	57.67	58.21	59.03	0.7%	1.4%	-1.3%	0.2%	0.3%	0.2%
Unemployment Rate (%)	5.61	4.22	4.30	5.03	5.35	5.44	-2.6%	0.3%	1.6%	1.3%	0.3%	0.8%
Total Regional Employment (BEA)	60.60	65.18	71.24	71.35	72.62	74.07	0.7%	1.5%	0.0%	0.4%	0.4%	0.4%
Wage & Salary Employment (BEA)	49.41	52.49	55.58	55.67	57.10	58.42	0.6%	1.0%	0.0%	0.5%	0.5%	0.5%
Proprietors Employment (BEA)	11.20	12.69	15.66	15.68	15.52	15.66	1.1%	3.6%	0.0%	-0.2%	0.2%	0.0%
Nonfarm Payroll Employment	48.21	52.95	56.13	55.86	57.64	59.11	0.9%	1.0%	0.0%	0.6%	0.5%	0.6%
Private Nonfarm	38.46	42.21	44.88	45.47	47.02	48.23	0.8%	1.0%	0.1%	0.7%	0.5%	0.6%
Natural Resources and Mining	0.37	0.29	0.34	0.23	0.25	0.25	-2.1%	2.5%	-4.0%	1.8%	-0.1%	0.9%
Construction	2.03	1.88	2.54	2.50	2.76	2.81	-0.7%	5.1%	-0.2%	2.0%	0.4%	1.2%
Manufacturing	9.67	7.23	6.61	5.85	5.66	5.49	-2.6%	-1.5%	-1.2%	-0.7%	-0.6%	-0.6%
Transportation and Utilities	1.46	0.96	0.87	0.88	0.89	0.89	-3.8%	-1.5%	0.1%	0.2%	-0.1%	0.1%
Information	0.97	1.33	1.10	0.90	0.91	0.91	3.0%	-3.2%	-2.0%	0.2%	0.2%	0.2%
Wholesale Trade	1.57	0.98	1.16	1.18	1.23	1.25	-4.2%	2.8%	0.2%	0.8%	0.3%	0.6%
Retail Trade	6.73	7.31	7.70	7.54	7.79	7.88	0.8%	0.9%	-0.2%	0.7%	0.2%	0.4%
Financial Activities	1.34	2.11	2.12	1.95	2.12	2.37	4.2%	0.0%	-0.8%	1.7%	2.2%	1.9%
Professional and Business Services	2.16	4.24	5.32	5.58	5.88	6.18	6.3%	3.8%	0.5%	1.0%	1.0%	1.0%
Education and Health Services	4.96	7.26	8.04	8.51	8.90	9.29	3.5%	1.7%	0.6%	0.9%	0.9%	0.9%
Leisure and Hospitality	5.79	6.91	6.81	7.89	8.21	8.47	1.6%	-0.2%	1.5%	0.8%	0.6%	0.7%
Other Services	1.40	1.69	2.27	2.46	2.43	2.45	1.8%	5.0%	0.8%	-0.2%	0.2%	0.0%
Government	9.75	10.74	11.25	10.39	10.63	10.87	0.9%	0.8%	-0.8%	0.4%	0.5%	0.5%
Government - Federal	0.43	0.35	0.39	0.32	0.35	0.36	-1.9%	1.9%	-2.0%	2.0%	0.4%	1.2%
Government - State and Local	9.32	10.39	10.86	10.07	10.27	10.51	1.0%	0.7%	-0.7%	0.4%	0.5%	0.4%
Population (Number)												
Total Population	119,192	124,579	128,853	126,218	128,011	129,917	0.4%	0.6%	-0.2%	0.3%	0.3%	0.3%
Ages Less than 5 Years	8,543	6,700	6,473	5,921	5,966	5,841	-2.2%	-0.6%	-0.9%	0.2%	-0.4%	-0.1%
Ages 5 to 19 Years	25,085	26,628	25,101	20,222	19,668	19,523	0.5%	-1.0%	-2.1%	-0.6%	-0.1%	-0.4%
Ages 20 to 44 Years	46,253	41,519	39,719	36,533	37,185	37,271	-1.0%	-0.7%	-0.8%	0.4%	0.0%	0.2%
Ages 45 to 64 Years	22,908	31,473	37,822	38,105	36,429	34,927	2.9%	3.1%	0.1%	-0.9%	-0.8%	-0.9%
Ages 65 Years and Greater	16,403	18,258	19,738	25,438	28,763	32,355	1.0%	1.3%	2.6%	2.5%	2.4%	2.4%
Births	426	319	326	277	278	272	-2.6%	0.4%	-1.6%	0.1%	-0.5%	-0.2%
Deaths	278	300	307	334	335	345	0.7%	0.4%	0.8%	0.1%	0.6%	0.3%
Natural Change (Births minus Deaths)	148	19	19	-57	-57	-73	-17.0%	-0.1%	N/A	-0.1%	5.1%	2.5%
Net Migration	232	95	104	84	150	169	-7.8%	1.5%	-2.1%	12.3%	2.4%	7.2%
Total Households	42,926	48,684	51,618	53,371	55,259	57,053	1.2%	1.0%	0.3%	0.7%	0.6%	0.7%
Miscellaneous Indicators (Number)												
FHFA Housing Price Index (1995:Q1=100)	N/A	109.11	197.20	195.72	219.80	271.19	N/A	10.4%	-0.1%	2.3%	4.3%	3.3%
Housing Starts (SAAR)	786	417	534	335	697	623	-5.6%	4.2%	-4.6%	15.8%	-2.2%	6.4%
Housing Completions (SAAR)	899	467	687	344	641	653	-5.8%	6.7%	-6.7%	13.3%	0.4%	6.6%
Existing Home Sales, Single-Family (SAAR)	2,154	2,371	1,729	2,048	1,745	1,811	0.9%	-5.1%	1.7%	-3.2%	0.8%	-1.2%
Existing Home Price, Single-Family (Median $)	83,473	88,660	165,610	162,014	193,697	244,943	0.5%	11.0%	-0.2%	3.6%	4.8%	4.2%

Notes: N/A is "Not Available"; SA is "Seasonally Adjusted"; NSA is "Not Seasonally Adjusted"; SAAR is "Seasonally Adjusted Annual Rate"; BEA is Bureau of Economic Analysis

Sources: Moody's Analytics May-June 2018 Glens Falls MSA Forecast 6.30.2018 and Economic & Policy Resources ***Prepared by Economic & Policy Resources, Inc.***

Table A.3 Queensbury Forecast Variables from EPR

Queensbury	1990	2000	2010	2016	2022	2027	Average Annual Percent Change 1990-00	2000-10	2010-16	Average Annual Percent Change 2016-22	2022-27	2016-27
Indicators	**History**				**Forecast**		**History**			**Forecast**		
Current Dollar Town Income Accounts (Thousands of Dollars)												
Personal Income	522,651	833,383	1,235,206	1,534,301	1,844,146	2,180,816	4.8%	4.0%	3.7%	3.1%	3.4%	3.2%
Wages & Salaries	334,116	538,844	798,559	909,525	1,069,316	1,246,897	4.9%	4.0%	2.2%	2.7%	3.1%	2.9%
Non-Wage & Salaries	188,535	294,539	436,646	624,776	774,830	933,919	4.6%	4.0%	6.2%	3.7%	3.8%	3.7%
Dividends, Interest & Rent	117,478	180,570	189,657	313,873	384,342	461,536	4.4%	0.5%	8.8%	3.4%	3.7%	3.6%
Transfer Receipts	71,058	113,969	246,990	310,903	390,488	472,382	4.8%	8.0%	3.9%	3.9%	3.9%	3.9%
Per Capita Income ($/Person)	23,095	32,757	44,271	55,661	66,501	77,083	3.6%	3.1%	3.9%	3.0%	3.0%	3.0%
Median Household Income ($/Household)	34,337	45,547	61,009	65,914	73,823	83,929	2.9%	3.0%	1.3%	1.9%	2.6%	2.2%
Median Household Income--Owner ($/Household)	40,149	53,257	72,688	76,714	86,222	97,998	2.9%	3.2%	0.9%	2.0%	2.6%	2.3%
Median Household Income-Renter ($/Household)	21,708	28,795	39,286	38,095	42,984	48,217	2.9%	3.2%	-0.5%	2.0%	2.3%	2.2%
Town Labor Force and Employment (Numbers)												
Town Civilian Labor Force	12,217	13,466	14,335	13,720	13,786	14,050	1.0%	0.6%	-0.7%	0.1%	0.4%	0.2%
Total Town Employment	11,703	12,977	13,230	13,106	13,138	13,369	1.0%	0.2%	-0.2%	0.0%	0.3%	0.2%
Unemployment Rate (%)	4.21	3.63	7.46	4.48	4.70	4.85	-1.5%	7.5%	-8.2%	0.8%	0.6%	0.7%
Total Town Employment (BEA)	12,161	13,485	13,612	13,930	14,200	14,638	1.0%	0.1%	0.4%	0.3%	0.6%	0.5%
Wage & Salary Employment (BEA)	10,772	11,945	11,959	12,652	12,903	13,301	1.0%	0.0%	0.9%	0.3%	0.6%	0.5%
Proprietors Employment (BEA)	1,389	1,540	1,653	1,278	1,297	1,337	1.0%	0.7%	-4.2%	0.3%	0.6%	0.4%
Population (Number)												
Total Population	22,630	25,441	27,901	27,565	27,731	28,292	1.2%	0.9%	-0.2%	0.1%	0.4%	0.2%
Ages Less than 5 Years	1,507	1,471	1,267	1,175	1,175	1,157	-0.2%	-1.5%	-1.2%	0.0%	-0.3%	-0.1%
Ages 5 to 19 Years	5,016	5,480	5,389	5,013	4,778	4,767	0.9%	-0.2%	-1.2%	-0.8%	0.0%	-0.5%
Ages 20 to 44 Years	8,537	8,245	7,449	7,163	7,168	7,207	-0.3%	-1.0%	-0.6%	0.0%	0.1%	0.1%
Ages 45 to 64 Years	4,549	6,386	8,834	8,666	8,170	7,869	3.5%	3.3%	-0.3%	-1.0%	-0.7%	-0.9%
Ages 65 Years and Greater	3,021	3,859	4,962	5,548	6,440	7,869	2.5%	2.5%	1.9%	2.5%	4.1%	3.2%
Births	N/A	253	246	246	233	229	N/A	-0.3%	0.0%	-0.8%	-0.4%	-0.6%
Deaths	N/A	239	289	277	293	303	N/A	2.0%	-0.7%	0.9%	0.7%	0.8%
Natural Change (Births minus Deaths)	N/A	15	-43	-32	-59	-74	N/A	N/A	-5.1%	11.0%	4.6%	8.1%
Net Migration	N/A	204	135	78	156	195	N/A	-4.0%	-8.8%	12.4%	4.6%	8.8%
Total Households	22,428	25,115	27,474	27,249	27,386	27,924	1.1%	0.9%	-0.1%	0.1%	0.4%	0.2%
Miscellaneous Indicators (Number)												
Home Price Index, (Index 2000=100, SA)	N/A	100.0	172.5	190.8	210.3	256.0	N/A	5.6%	1.7%	1.6%	4.0%	2.7%

Notes: N/A is "Not Available"; SA is "Seasonally Adjusted"; NSA is "Not Seasonally Adjusted"; SAAR is "Seasonally Adjusted Annual Rate"; BEA is Bureau of Economic Analysis

Source: Economic & Policy Resources, Inc. ***Prepared by Economic & Policy Resources, Inc.***

Moody's Model and EPR Team Projections vs. Population Projections from the Cornell Program of Applied Demographics

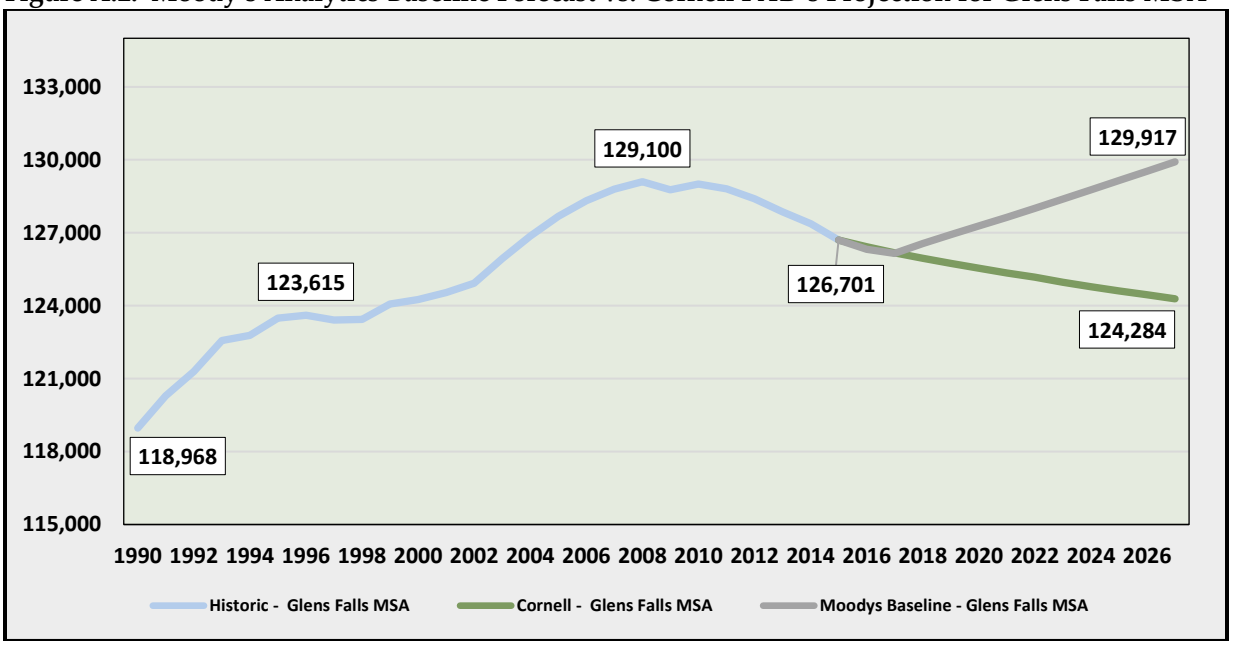
Moody's collects the historical data and their team of economists sets up the theory-bound structural equations to explain and forecast economic, financial and demographic trends for 382 Metropolitan Statistical Areas (MSAs) and 50 states. Included in that system is a regional economic and demographic forecasting model for the Glens Falls MSA—as one of the MSAs. This forecast from Moody's Analytics, which was created in March of 2018 based on the May-June 2018 Moody's Forecast for the U.S. economy, differs from the analysis presented in the recent *Long-term Population Projections for New York and its Counties* produced by demographers at Cornell University's Program on Applied Demographics ("PAD") in September 2018.

While Moody's is forecasting demographic change, in this case population, as it relates to structural economic change in the region, Cornell PAD is projecting demographic change based solely on a historical or retrospective view of past demographic data and trends. Moody's Analytics, therefore, takes a forward-looking, more holistic approach to the economics and demographics of the region, forecasting the region's future economic performance and demographic changes within a larger prospective view of the region's [and by extension—the Town's] economic, financial, and demographic picture. A caveat to the Moody's Analytics method is that all of the various economic, financial, and demographic variables are to some degree endogenous to the model and slight changes in one or many indicators could significantly impact the economic and demographic forecast developed for this study. Moody's Analytics updates the U.S. Macro Model every month, including periodic re-specification of underlying equations to help improve the model's forecasting accuracy—which necessitates continuous revision and updates. However, the requirements of this study necessitate that an initial, foundational forecast of the economic and demographic determinants of housing demand be agreed to and that this forecast have the longevity to keep the study's long term forecasts and findings relevant for as long a period of time into the future as it can. This seems particularly important given the aging of the U.S. economic cycle, and the recent global economic and political uncertainties that may complicate achieving that longevity objective for this study.

More specifically, the Cornell PAD uses a retrospective or backward-looking cohort component modeling approach that considers components of population change through a strict and direct version of recent historic population dynamics. This is clearly a less complicated forecasting approach. However, such an approach neither takes into account the underlying economic trends influencing population and demographic changes, nor does it consider more than a few variables (for example in- and out-migration, birth, and death rates) relative to the economic models with a large number of inputs. While in certain situations (such as a study with a short-term time horizon), it is appropriate to view the demographic future as a mere extension of a region's demographic past[12], the EPR-Crane Associates Team did not believe this was a robust enough approach nor the best, fully-considered methodology on which to base a regional housing demand and supply study that covers a ten-year period going forward. After thorough analysis, EPR concluded that a structural macroeconomic model for the MSA—and for the Town of Queensbury was necessary to forecast future housing supply and demand because of the interplay between the housing market and the overall economy of the region and the national economy. Figure A.2 (below) shows how these two different approaches-methodologies can lead to significantly different forecasts of resident population for the future. These differences can become large, especially as the prospective timeline approaches ten years out into the future.

[12] This is particular relevant with respect to natural change (births vs. deaths) within the region.

Figure A.2: Moody's Analytics Baseline Forecast vs. Cornell PAD's Projection for Glens Falls MSA



Key Economic Variables

The projection performed by the Cornell PAD continues the negative trend in population change which the region has actually experienced since 2010. The Cornell PAD projects this trend into the future using estimated data regarding migration rates (from 2012 to 2016) from the U.S. Census Bureau and natality-mortality rates data (from 2000 to 2017) from the U.S. Centers for Disease Control and Prevention. The baseline Moody's forecast for the MSA region includes the expectation that the region's population will actually increase in the future, despite the actual population decline experienced over the period. As mentioned previously, the Moody's forecast incorporates exogenous economic drivers of population and demographic change, rather than exclusively at the historical performance of individual population components and demographic variables. Population is only one variable in Moody's regional economic and demographic structural model for the MSA region. It is prudent, then to examine some non-demographic variables in the MSA model that can help explain why population is forecasted to grow.

As shown in Figure A.3 below, Industrial Production and Retail Sales in the MSA all experienced a major decline from calendar year 2007 through calendar year 2009, as we would expect with the onset of the "Great Recession." Since 2010, however, Real Gross Product along with Industrial Production and Retail Sales experienced variable periods of growth and contraction and are forecasted to continue to do so in the near future, trending towards long-term positive growth. It is intuitive then to expect the population to increase in order to enable or support this expected future economic growth. However, taking into consideration the recent historical trend, the EPR-Crane Associates Team would not expect it to be substantial. Thus, the EPR-Crane Associates Team arrives at how Moody's regional economic and demographic forecasting model is generally set up: economic theory and expectations would dictate some population growth but the historical trend is warning that likely near-term future population increases will be somewhat tempered from a historical perspective. Taking a look at the wider historical context of population growth coupled with Moody's forecast in Figure A.4 on the following page, the EPR-Crane Associates Team believes that this is the more fully-considered, reasonable projection for resident

population change through calendar year 2027 when compared to the historical, more narrowly-focused projection technique employed by the Cornell PAD.

Figure A.3: Moody's Analytics Economic Indicators – Glens Falls Historical and Forecasted—Annual Rate of Change (%)

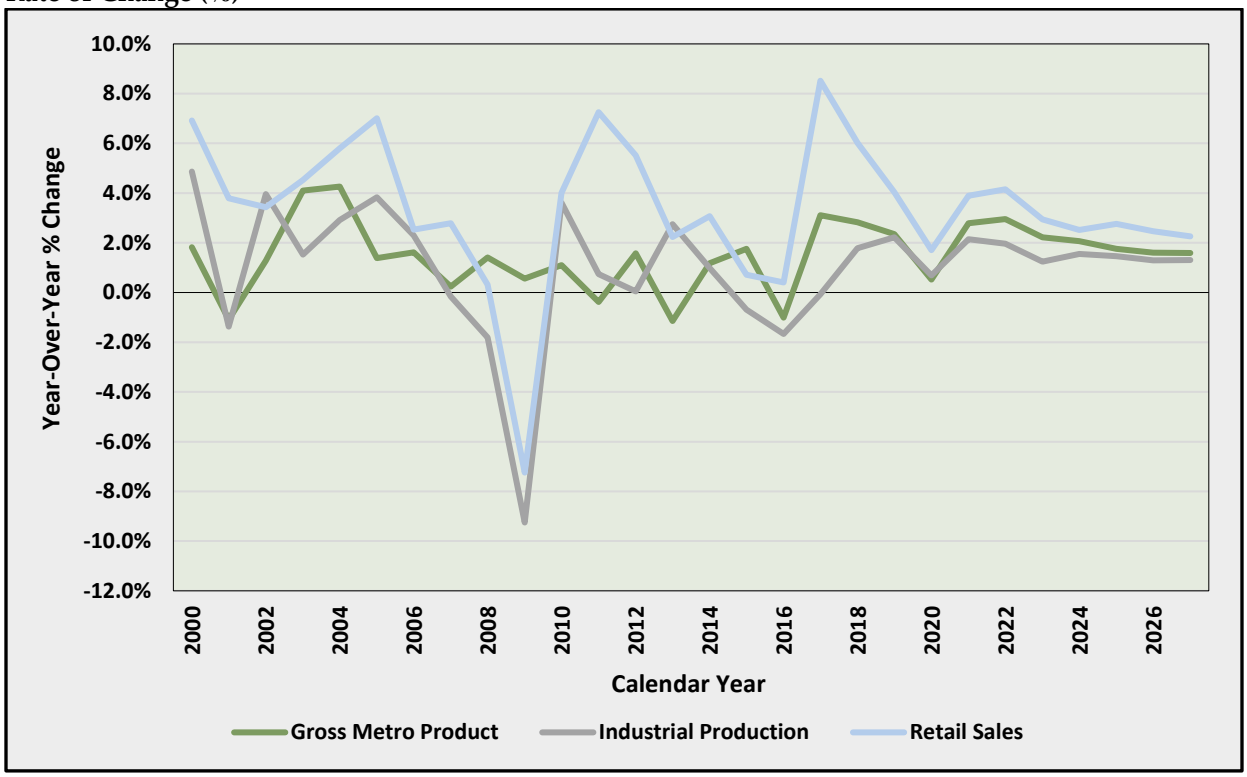
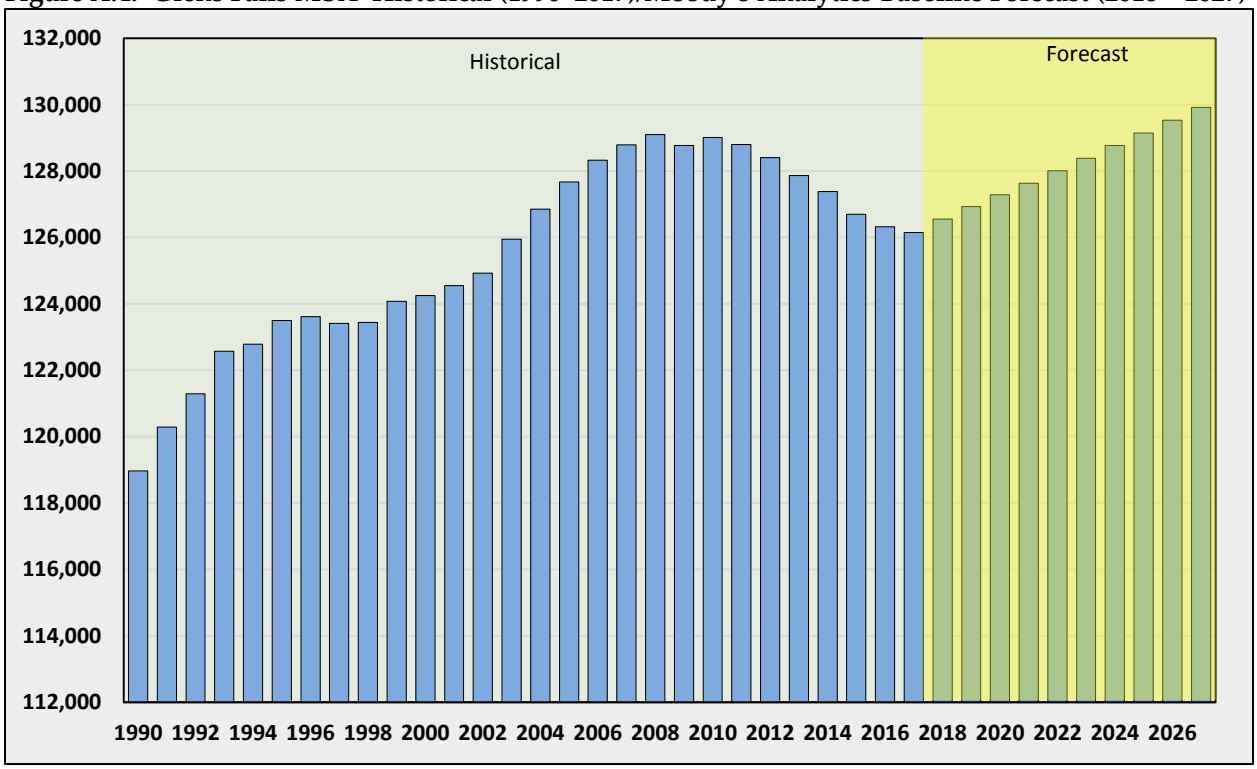


Figure A.4: Glens Falls MSA–Historical (1990–2017)/Moody's Analytics Baseline Forecast (2018 – 2027)



Creating a Unique Forecast Model for Glens Falls MSA Region and Town of Queensbury

Figures A.5 (and A.6) sets forth graphically the components of population change which were included in the regional economic and demographic forecast baseline for the MSA region and for the Town.

From the chart, it seems apparent that net migration has played a prominent role in overall population change. Strong economic growth in the early 2000s drove in-migration to the MSA region. The Great Recession led to slower economic growth, and which ultimately resulted in out-migration from 2011 through 2016. Data for 2017 shows modest in-migration, indicating the trend may be shifting again. Similar to net migration, the natural change (births minus deaths) was showing consistent growth from 2000 to 2008, but following the Great Recession the natural change shifted to the point where the number of deaths outpaced births. The Moody's Analytics regional baseline forecast expects a more modest decline in that natural change from 2018 to 2027, although it still follows the same overall downward trend for the natural change in population and faster growth from in-migration, as shown set forth in Figure A.7.

Figure A.5: Net Migration and Natural Increase in Population – Glens Falls MSA 2001 – 2017

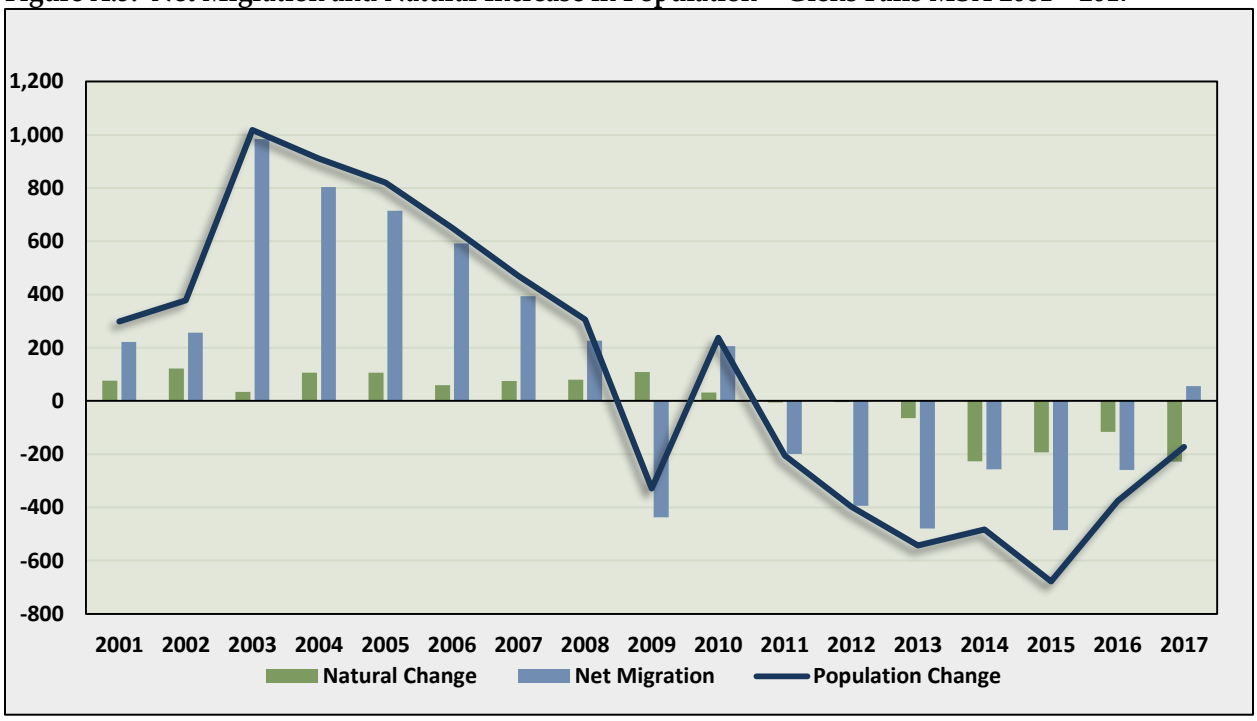


Figure A.6. Net Migration and Natural Increase in Population—Town of Queensbury 2001-2017

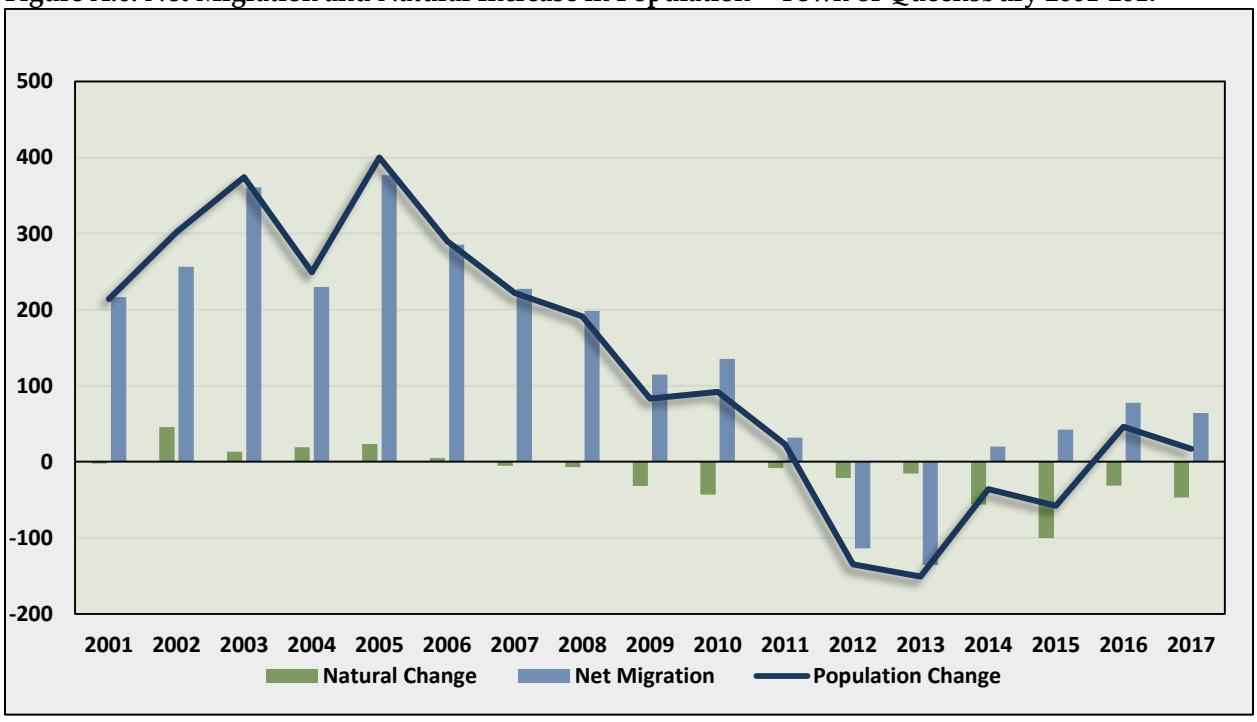
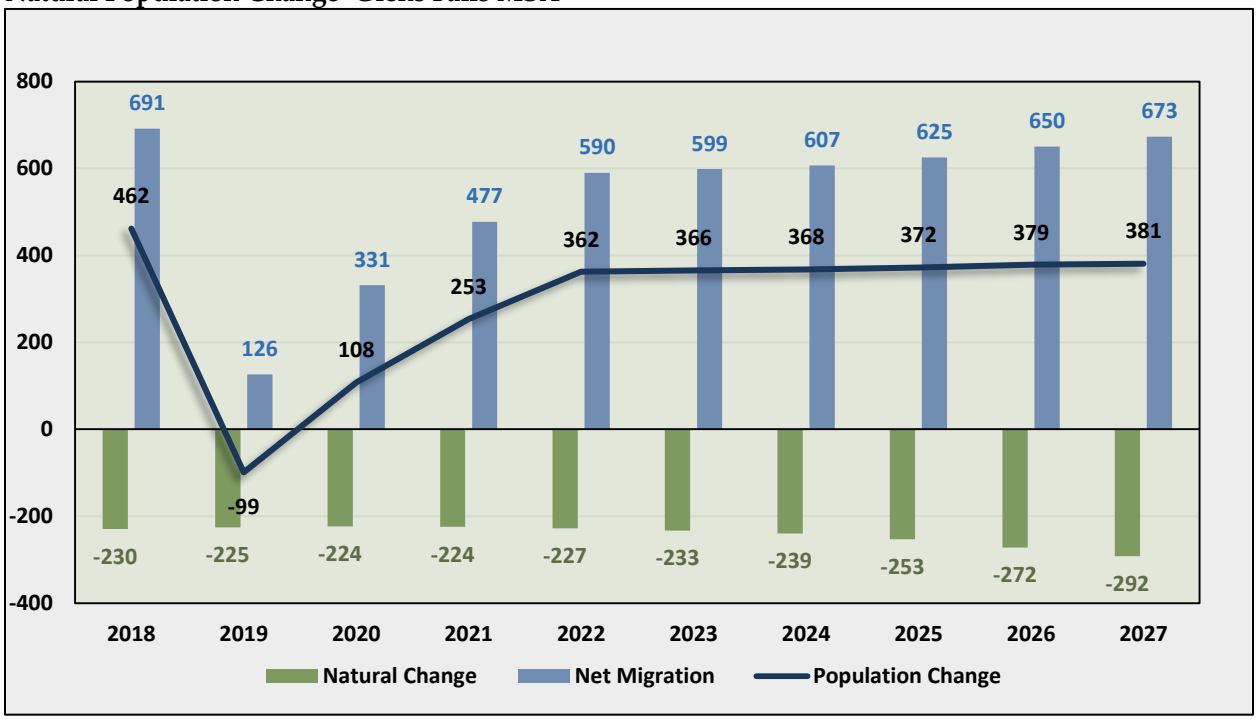


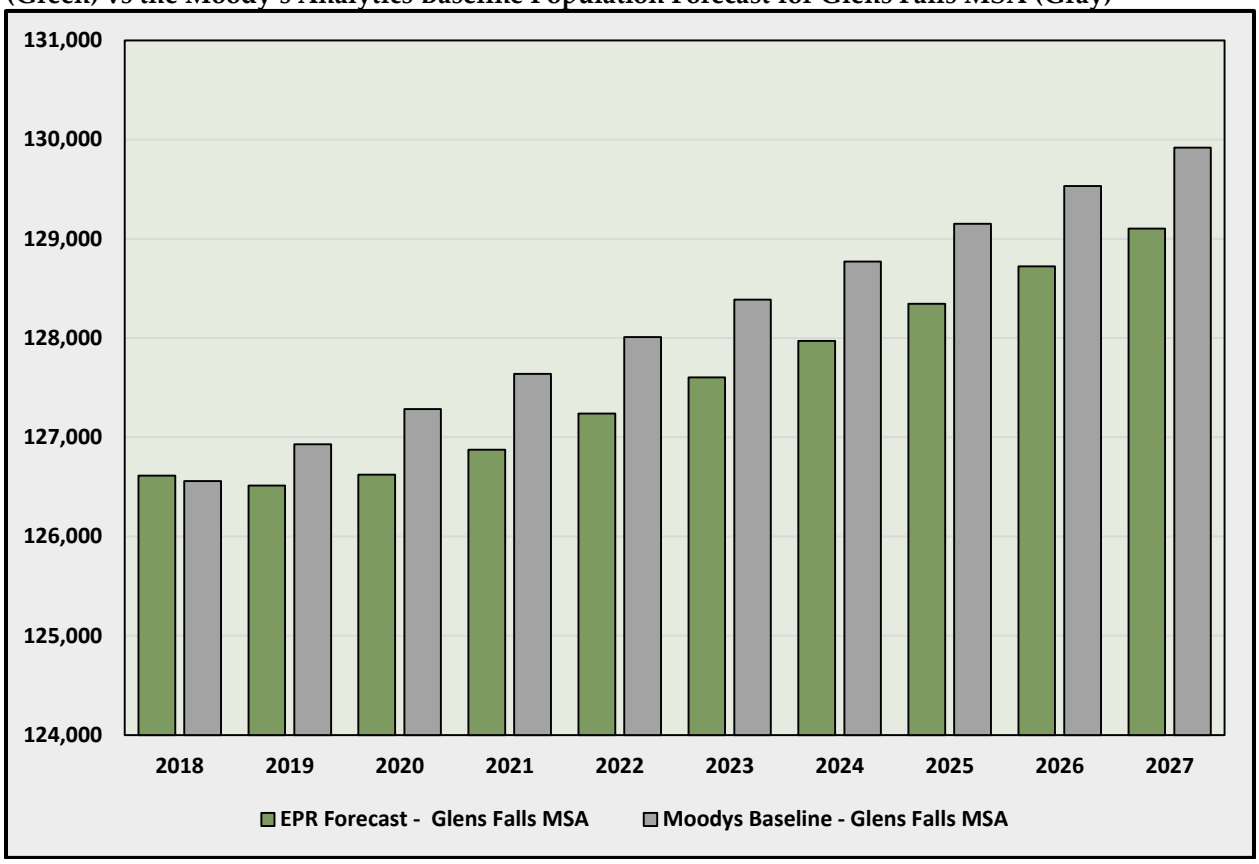
Figure A.7: Moody's Analytics/EPR-Crane Associates Team Baseline Forecast of Net Migration and Natural Population Change–Glens Falls MSA



The initial adjusted forecast had a large increase in population in the first forecasted year. This was likely caused by the Moody's forecast not incorporating certain important characteristics of the MSA (it is impossible to know which ones), and it reflected a typical "forecast launching" issue—where historical values are matched to forecasted future values as estimated by the quantitative model. In order to properly address this issue—in terms of the change in population from 2017 (last year of region historical data) to 2018 (first year of forecasted region data) a statistical adjustment to the Moody's forecast was made to weight the previous years' demographic trends a little more heavily.

To accomplish this, a 5-year moving average was applied to the Moody's Analytics baseline data, where the value in 2018 was the 5-year average of the total population in the MSA from 2014 through 2018. Instead of 2027's population forecasted to be 129,917 in the original Moody's forecast, the adjusted population would now be 129,104. This approach resolves the forecast's launching problem and the 5-year moving average application to years 2018 through 2027 in the Moody's Analytics baseline regional forecast completes the adjusted forecast. Forecasting based on a VAR (Vector Autoregression) produces a lower regional population forecast than what Moody's Analytics forecasted in the regional population forecast baseline. To further revise, again based on the inclination to give consideration to demographic trends, we took into account the forecasted natural change of population by Moody's Analytics for years 2017 through 2027. We subtracted the forecasted number of deaths (net of births) in the MSA during these years from the results obtained from the forecast based on the VAR above. This lowered the EPR forecast for population even further away from the Moody's Analytics forecast. Figure A.8 below shows the difference between EPR's revised forecast and Moody's regional baseline forecast.

Figure A.8: Glens Falls MSA Population Forecast – EPR Adjusted Forecast for Glens Falls MSA (Green) vs the Moody's Analytics Baseline Population Forecast for Glens Falls MSA (Gray)



APPENDIX B: CURRENT SOCIO-ECONOMIC LANDSCAPE OF QUEENSBURY AND REGIONAL DEMOGRAPHIC-ECONOMIC FORECAST

Introduction

Queensbury is situated as the southeastern gateway to the Adirondack Park region of New York. Located on Lake George, one of the state's most popular year-round destinations, Queensbury is the administrative government center for Warren County and represents the leading municipality and center of commerce for the greater surrounding region.

This Appendix provides both an overview of recent economic and demographic trends in the Town of Queensbury and presents the regional economic and demographic forecast on which the estimate of future housing needs is based. This overview includes recent information on population, households, employment, visitation, household income, commuting patterns, and other important data relative to housing demand in Queensbury as well as within the surrounding area. The surrounding area includes: (1) the overall geographic context of Glens Falls Metropolitan Statistical Area ("MSA"); (2) its two component counties of Warren and Washington; and (3) two peer communities, namely the City of Glens Falls and the Town of Kingsbury. The long-term forecast builds upon the background of this regional demographic-economic profile.

Socio-Economic Profile of Queensbury

Population Trends – 1990-2017[1]

Attracting and retaining people to live, work, raise a family, and retire underlies the economic vitality of any area. Changes in population are almost always associated with changing economic conditions within the local area. Over the nearly last three decades, Queensbury has experienced moderate population growth. During the 1990s and 2000s, the Town was the fastest growing community in the region, with its population growing at an average annual rate of 1.0 percent. More than half of the total 10,000 population gain during these two decades in the two-county Glens Falls MSA were residing in Queensbury; and eight out of every ten new residents in Warren County resided in Queensbury. By 2011, Queensbury had reached its population peak of 27,899 residents. Since then, population growth in the Town has plateaued; and by 2017, the Town's population stood at 27,582, a slight decline from its earlier peak.

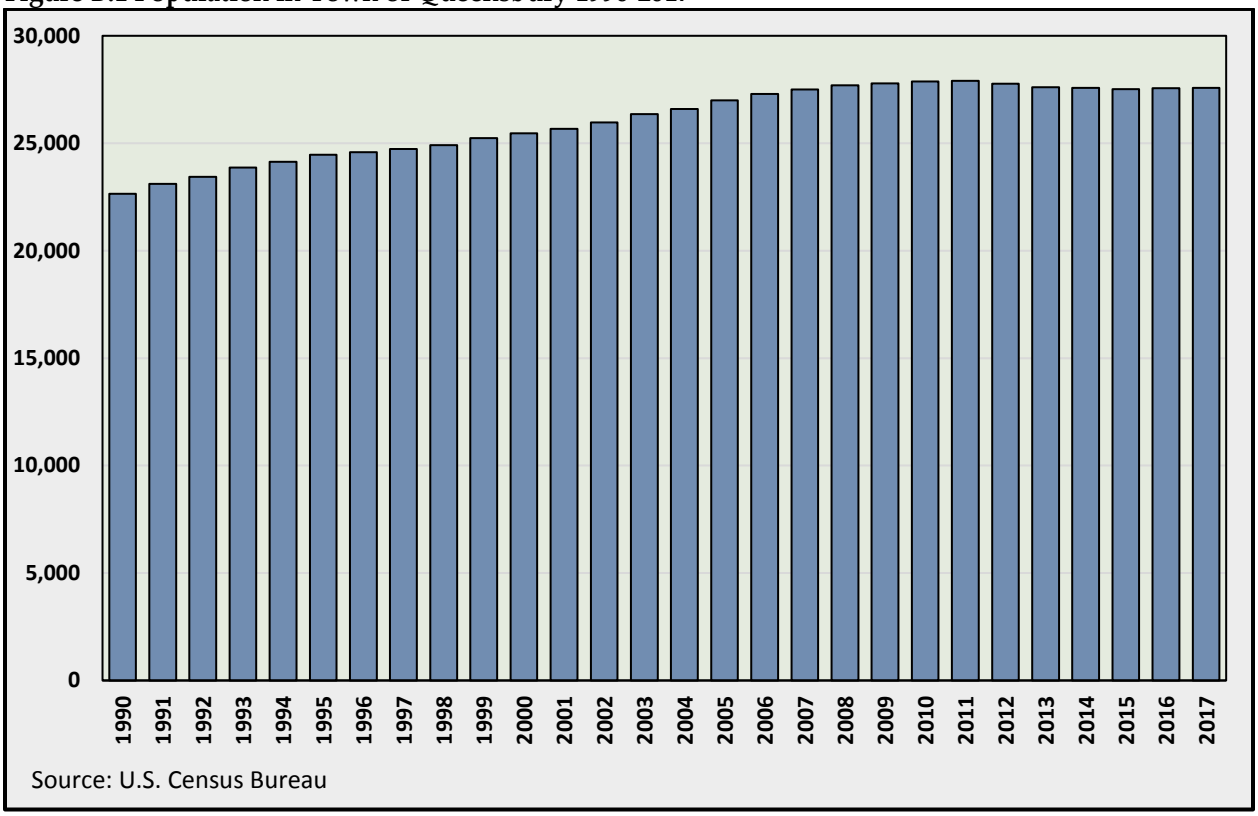
[1] Generally for most social, demographic and economic metrics used in this report, 2016 represents the last historical data release, particularly for the Town and its peer communities. Thus, 2017 is the initial year of the forecast period (2017-2027). There are of course some 2017 exceptions—and are here presented (as in population counts) as the last historical year.

Table B.1 Population in Glens Falls MSA, 1990-2017

Year	Queensbury	Glens Falls City	Warren County	Kingsbury	Washington County	Glens Falls MSA
1990	22,649	15,191	59,510	11,988	59,516	119,027
1991	23,107	15,116	60,117	12,063	60,169	120,286
1992	23,435	15,154	60,719	12,105	60,571	121,290
1993	23,866	15,258	61,541	12,143	61,031	122,572
1994	24,130	15,163	61,754	12,099	61,029	122,783
1995	24,459	15,083	62,061	12,137	61,435	123,496
1996	24,585	14,983	62,087	12,105	61,528	123,615
1997	24,730	14,905	62,171	12,067	61,239	123,410
1998	24,919	14,807	62,256	12,025	61,180	123,436
1999	25,240	14,771	62,660	11,985	61,414	124,074
2000	25,459	14,374	63,273	11,232	60,977	124,250
2001	25,673	14,382	63,406	11,366	61,142	124,548
2002	25,975	14,443	63,774	11,468	61,152	124,926
2003	26,349	14,544	64,323	11,662	61,621	125,944
2004	26,598	14,577	64,576	11,869	62,278	126,854
2005	26,998	14,695	65,206	12,013	62,468	127,674
2006	27,288	14,750	65,554	12,166	62,771	128,325
2007	27,510	14,768	65,740	12,322	63,054	128,794
2008	27,701	14,770	65,848	12,463	63,252	129,100
2009	27,784	14,713	65,694	12,548	63,077	128,771
2010	27,876	14,693	65,672	12,719	63,336	129,008
2011	27,899	14,696	65,735	12,691	63,068	128,803
2012	27,764	14,607	65,425	12,668	62,980	128,405
2013	27,613	14,527	65,106	12,698	62,756	127,862
2014	27,577	14,454	64,901	12,628	62,478	127,379
2015	27,519	14,285	64,448	12,561	62,253	126,701
2016	27,565	14,377	64,519	12,452	61,806	126,325
2017	27,582	14,439	64,532	12,385	61,620	126,152
1990-2000 Change	**2,810**	**-817**	**3,763**	**-756**	**1,461**	**5,223**
2000-2010 Change	**2,417**	**319**	**2,399**	**1,487**	**2,359**	**4,758**
2010-2017 Change	**-294**	**-254**	**-1,140**	**-334**	**-1,716**	**-2,856**
1990-2017 Change	**4,933**	**-752**	**5,022**	**397**	**2,104**	**7,125**
1990-2000 % Change	**1.2%**	**-0.6%**	**0.6%**	**-0.6%**	**0.2%**	**0.4%**
2000-2010 % Change	**0.9%**	**0.2%**	**0.4%**	**1.3%**	**0.4%**	**0.4%**
2010-2017 % Change	**-0.2%**	**-0.2%**	**-0.2%**	**-0.4%**	**-0.4%**	**-0.3%**
1990-2017 % Change	**0.7%**	**-0.2%**	**0.3%**	**0.1%**	**0.1%**	**0.2%**

Source: U.S. Census Bureau *Prepared by Economic & Policy Resources*

Figure B.1 Population in Town of Queensbury 1990-2017



As in the Town, population change has varied over the years in peer communities and counties. Most communities in Warren and Washington Counties grew during the 1990s and 2000s, reaching their respective population peaks between 2008 and 2010. The exception has been the City of Glens Falls, whose population has been in secular decline[2] since 1993 (when it peaked at 15,258). Growth in economic activity and attendant population gains has been slow to recover since the end of the U.S. Great Recession.

Table B.2 Population by Race

	Queensbury	Glens Falls City	Warren County	Glens Falls MSA	United States
Total:	**100.0%**	100.0%	100.0%	100.0%	100.0%
White alone	**96.1%**	93.8%	96.1%	95.1%	73.3%
Black or African American alone	**1.6%**	1.4%	1.2%	2.2%	12.6%
American Indian and Alaska Native alone	**0.5%**	0.3%	0.3%	0.3%	0.8%
Asian alone	**1.2%**	1.3%	0.9%	0.7%	5.2%
Native Hawaiian and Other Pacific Islander alone	**0.0%**	0.4%	0.1%	0.0%	0.2%
Some other race alone	**0.1%**	0.4%	0.3%	0.4%	4.8%
Two or more races:	**0.6%**	2.4%	1.2%	1.3%	3.1%

Prepared by Economic & Policy Resources

Queensbury's racial demographics are largely representative of the County and the MSA as a whole. Like the region, Queensbury's population is mostly White alone (96.1%) with the next largest group being Black

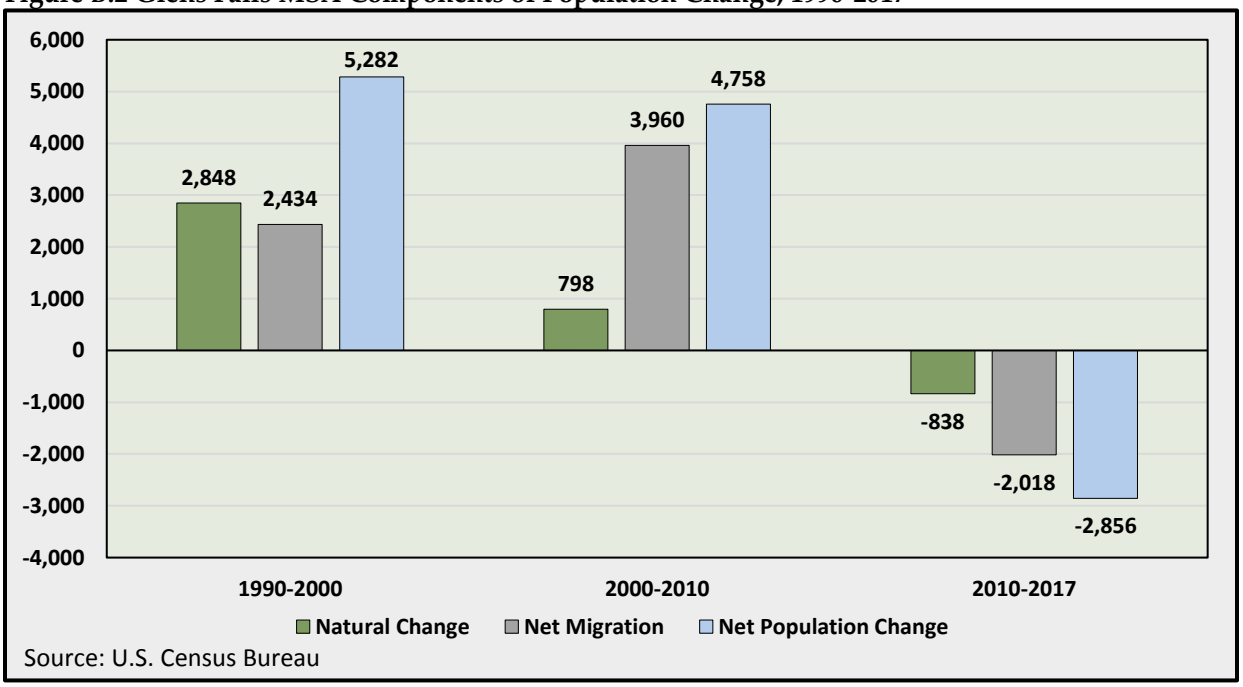
[2] Decline over the long term that is not dependent on seasonality or the business cycle.

or African American. The town does differ slightly from the region in that the third largest group is Asian alone while in the region "two or more races" is the third largest. The town and region do differ significantly from the United States as a whole. While the U.S. is a majority White alone, the town and regional populations are made up of more than 20% more white alone than the U.S. as a whole. Every other group is also a significantly larger proportion of the population in the U.S. than in the town or region.

Factors Behind Population Growth and Decline. An area's population can change in two ways. There is natural change—the number of births minus the number of deaths; and/or net migration—the balance of persons moving into and out of an area. During the 1990s and 2000s, Glens Falls MSA (Warren and Washington Counties) stood out as one of the fastest growing regions in the state due first (1990s) to natural increase—more births than deaths; and later (2000s) to net migration from other regions and countries. Since 2010, the region for the most part has seen its population decline due to both natural decrease (more deaths than births) and net out-migration (See Figure B.2).

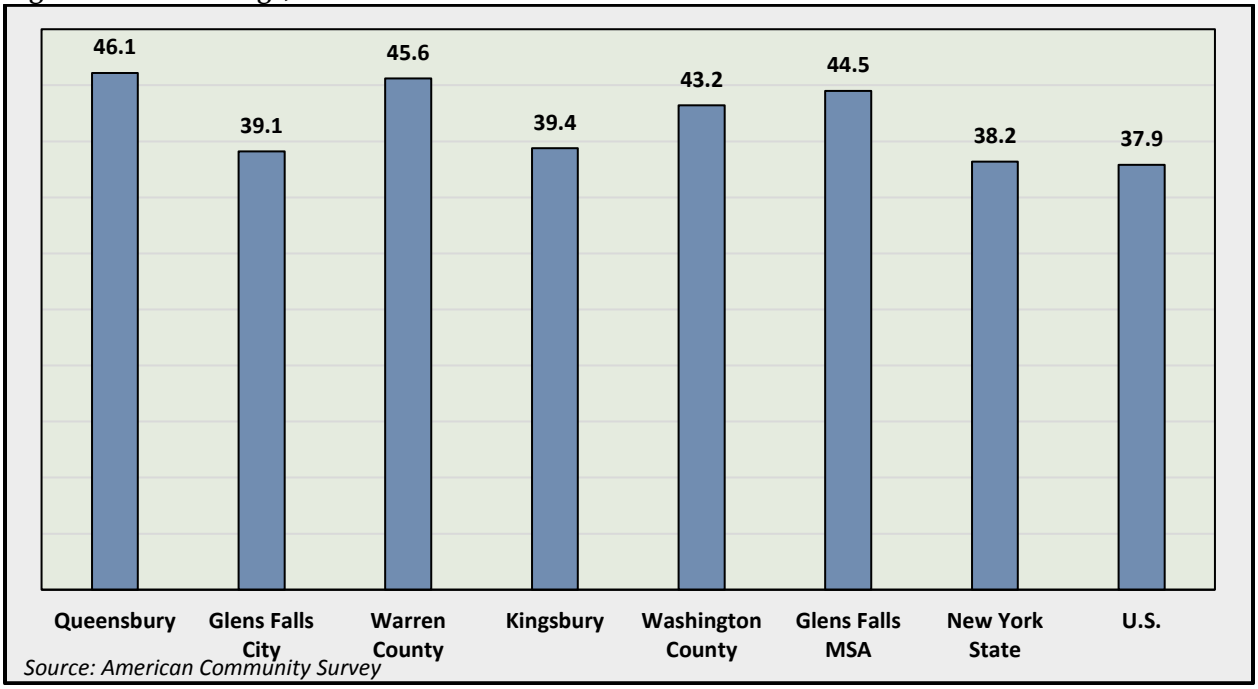
The eventual slow-down and more recent declining trend is largely due to the age profile of Warren County (and to a lesser effect Washington County) affecting both birth and death rates. As a population grows older, the bulk of its population ages out of childbearing years and eventually into higher mortality age groups. Thus, without new household formation and replacement population via net migration, the number of deaths will eventually outnumber new births in the region. The birth rate (i.e., number of births per 1,000 residents) in the Glens Falls region peaked back in 1990 at 14.30. Since then, the birth rate has steadily declined to its current low of 8.78. For Glens Falls MSA, 2011 marked the year in which its natural increase (births minus deaths) flipped to natural decrease (deaths minus births).

Figure B.2 Glens Falls MSA Components of Population Change, 1990-2017



In Warren County, the effect of this aging is more pronounced as the county has one of the oldest median age (45.6 years) in New York. Likewise, for Queensbury its median age is 46.1 years; compared with City of Glens Falls whose median age is 39.1 years. Washington County—with a median age of 43.2 years is also highly ranked on the senior scale. In comparison, the median age in New York and the United States is 38.2 years and 37.9 years, respectively (See Figure B.3).

Figure B.3 Median Age, 2016



Source: American Community Survey

The aging population in the region can be viewed as shifting shares of broad age cohorts between 1990 and 2016. These broad age groupings are:

- 0-19 years: Infants to school age adolescents to prospective new workforce entrants and college-age population.
- 20-44 years: New household formations; new entrants in workforce to workers in their prime years;
- 45-64 years: Maturing persons and workers with accumulated skills and experience; and
- 65 years and older: Principally retirees.

In 1990, nearly 30% of the region's population were in the youngest age cohort of 0-19 years. Since the early 1990s, the region's youngest age grouping has declined in both relative and absolute numbers. Overall, births have been in secular decline in the region. Similarly, school enrollments (Kindergarten through Grade 12) have declined throughout the region. Public school enrollment peaks varied from 1990 (in Kingsbury) and 1993 (in City of Glens Falls) to 1998 (in Warren County) and 2005 (in Queensbury). While public school enrollments have fallen throughout the state over the last two decades, regional school districts have seen their enrollments decline (from peak) by 10.7 percent in Kingsbury, by 17.7 percent in Queensbury, and by 26.5 percent in Glens Falls City.

Table B.3 Public School Enrollments

Year	Queensbury	Glens Falls City	Warren County	Kingsbury	Washington County	Glens Falls MSA
1990	3,175	2,818	10,360	2,646	10,643	21,003
1995	3,452	3,033	11,111	2,543	10,940	22,051
2000	3,688	2,952	11,296	2,390	10,829	22,125
2005	3,980	2,673	11,078	2,355	10,349	21,427
2010	3,692	2,473	10,093	2,264	9,366	19,459
2015	3,408	2,200	9,096	2,376	8,774	17,870
2016	3,341	2,221	8,954	2,385	8,681	17,635
2017	3,334	2,208	8,880	2,340	8,655	17,535
2018	3,275	2,230	8,757	2,364	8,566	17,323

Source: NYS Education Department *Prepared by Economic & Policy Resources*

College-destined population are mostly oriented toward higher education institutions located outside of the region. SUNY Adirondack—a two-year community college[3] in Queensbury is the only college within the two-county region. Enrollment at SUNY Adirondack averages nearly 4,000 students; while the college—like most community colleges—caters to the local population and businesses, there is one dormitory on the campus which houses about 400 students.[4]

The population share of the 20-44 year age grouping has also declined since the 1990s. Most households form and most entrants into the workforce are from this age cohort. During the 1990s and 2000s, this age grouping registered the largest share of the regional population; coupled with high rates of household formation and additions to the regional labor force. Most of the employment gains in the region occurred during these decades.

[3] Four year degrees and master's degree programs became available with the opening of the SUNY at Plattsburgh Queensbury Branch on the SUNY Adirondack campus.

[4] The U.S. Census Bureau counts college students at their place of residence; thus, those students enrolled at colleges outside of the Glens Falls metropolitan region are no longer counted as year-round residents of the region.

Table B.4 Population by Age Cohorts in Queensbury, Warren County, Washington County, and Glens Falls MSA1990-2016

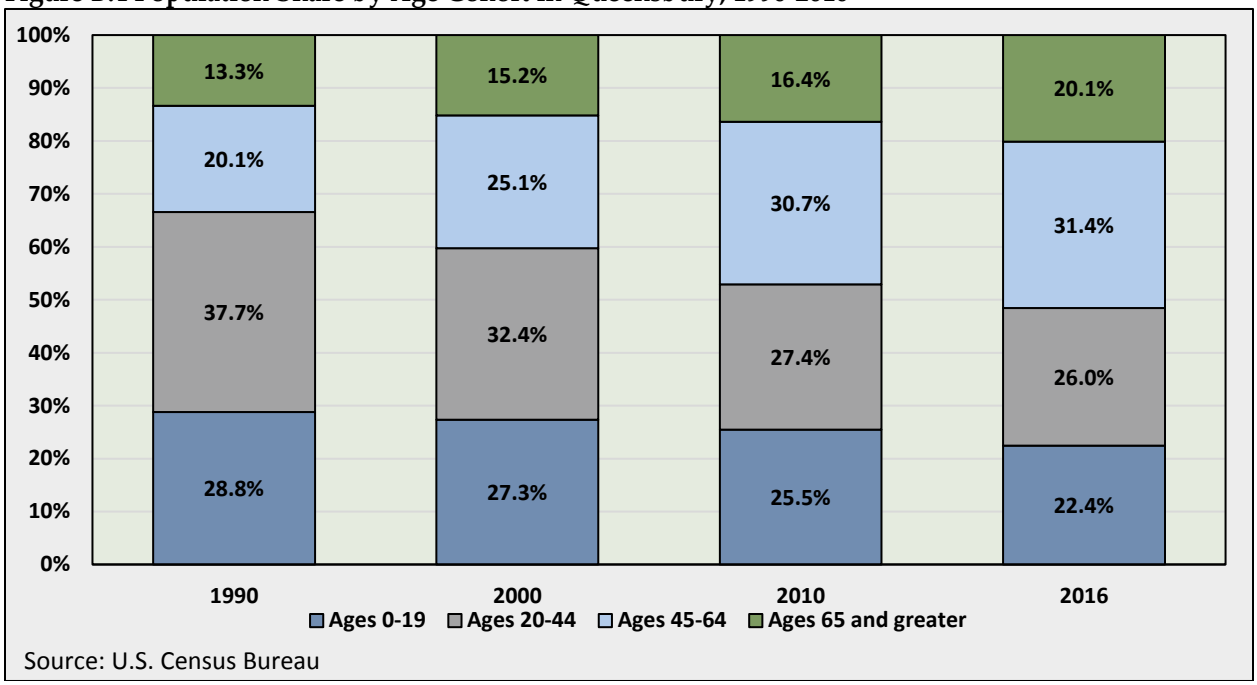
Geography	Age Cohorts	1990	2000	2010	2016	1990-2016	1990-2016 % Change
Queensbury	0-19	6,523	6,951	6,656	6,212	-311	-4.8%
	20-44	8,537	8,245	7,449	7,191	-1,346	-15.8%
	45-64	6,011	6,386	8,834	8,699	+2,688	44.7%
	65+	3,021	3,859	4,962	5,569	+2,548	84.3%
Warren County	0-19	16,603	16,818	15,003	13,256	-3,347	-20.2%
	20-44	22,556	20,924	18,638	17,932	-4,624	-20.5%
	45-64	11,499	15,936	20,746	19,786	+8,287	72.1%
	65+	8,551	9,595	11,285	13,545	+4,994	58.4%
Washington County	0-19	16,964	16,618	14,873	13,267	-3,697	-21.8%
	20-44	23,361	21,297	19,851	18,608	-4,753	-20.3%
	45-64	11,237	14,522	18,841	18,562	+7,325	65.2%
	65+	7,768	8,540	9,771	11,369	+3,601	46.4%
Glens Falls MSA	0-19	33,567	33,436	29,876	26,523	-7,044	-21.0%
	20-44	45,917	42,221	38,489	36,540	-9,377	-20.4%
	45-64	22,736	30,458	39,587	38,348	+15,612	68.7%
	65+	16,319	18,135	21,056	24,914	+8,595	52.7%

Source: U.S. Census Bureau *Prepared by Economic & Policy Resources*

The aging population of the region can readily be seen in the broad age cohorts of 45-64 years and 65 years and older, which combined currently make up more than 50% of the region's total population. Each town and city has its own separate population age structure[5]; Queensbury, in particular, has a current age structure that resembles a stationary population pyramid—low birth rates, a growing elderly class, and younger age cohorts shrinking. Many within the 65 years and older cohort are "retirees;" this group has grown in both absolute and relative terms between 1990 and 2016. Though much of these gains are due to natural aging, there has also been a net migration of "retirees." As the general population continues to age, the elderly will constitute an increasing share of region's population base, making the "graying" of Glens Falls MSA (as well as the Town) a significant socio-economic development phenomenon.

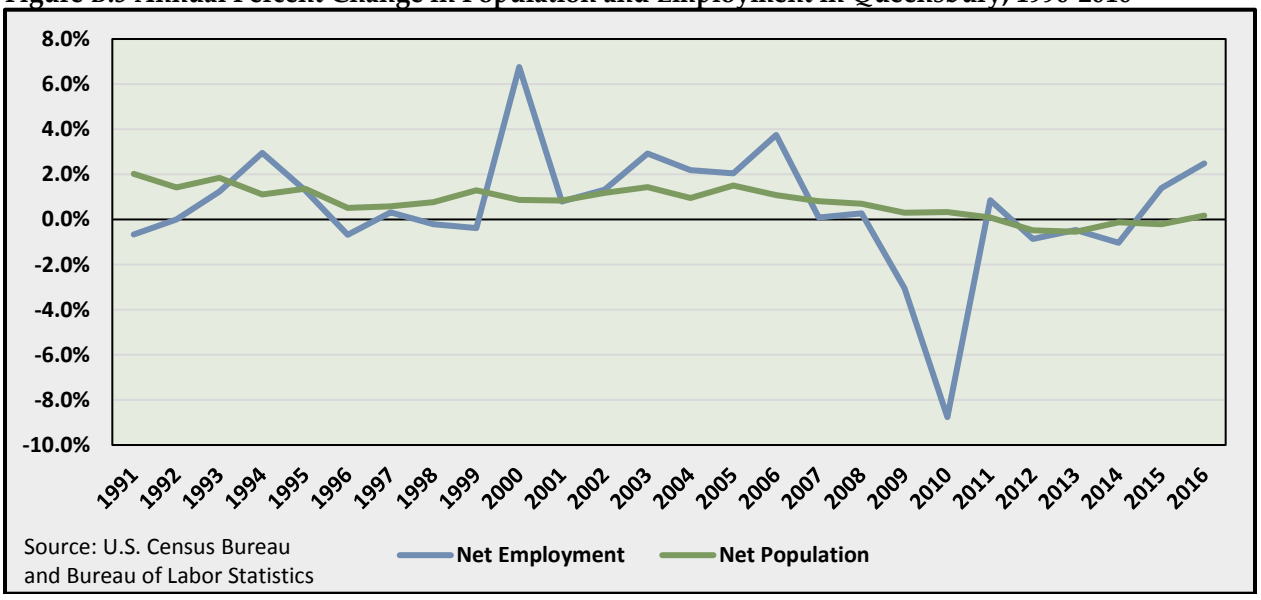
[5] Age structures are typically called population pyramids. Through a simple graph, this population pyramid conveys a complex social narrative of population through its shape. While each place has its own unique age structures, there are three prototypical shapes: expansive (generally, young and growing, characterized by a typical "pyramid" shape of a broader base with younger age cohorts and a narrow top of elder age cohorts); constrictive (generally, elderly and shrinking, with an inverted shape tapering at the bottom); and stationary (generally, little or no population growth, with a rectangular shape).

Figure B.4 Population Share by Age Cohort in Queensbury, 1990-2016



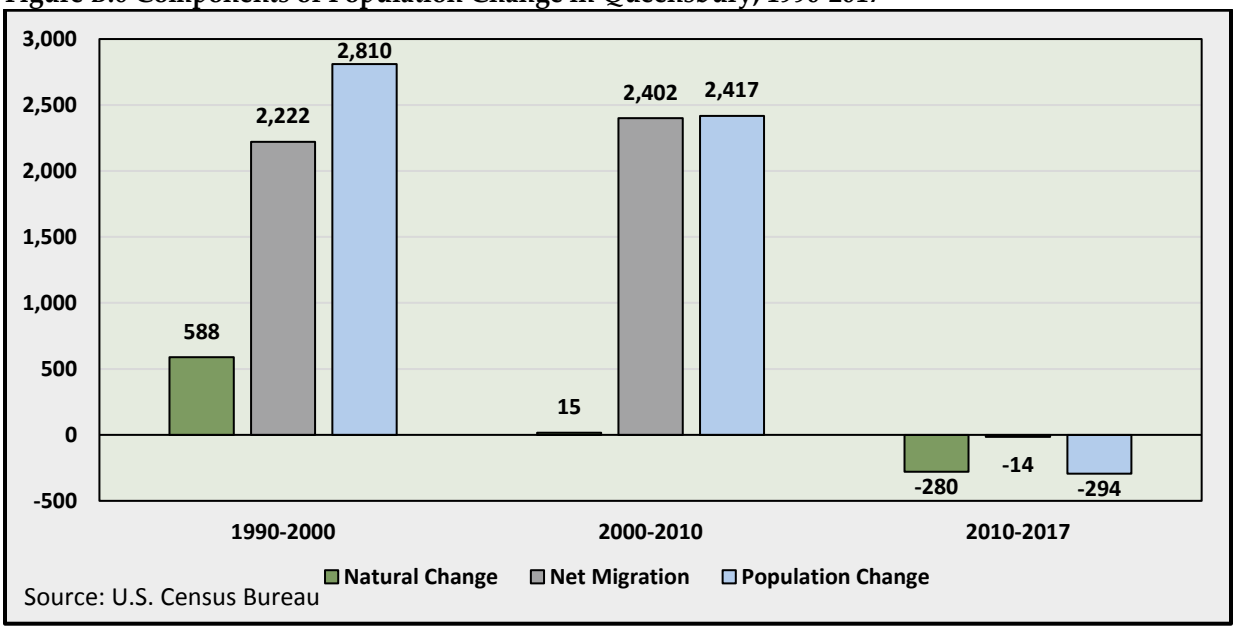
As noted earlier, a region's or town's population can change due to natural increase (or decrease)—namely births minus deaths; and net migration—the balance of persons moving into and out of an area. For Queensbury, natural increase played an important early role in population change in the Town. Net in-migration became an emerging influence during the latter 1990s and early 2000s; net in-migration is significantly related to local economic performance. Though the phenomenon is somewhat muted compared to past regional economic cycles, people follow jobs. In general, as job prospects increase within an area, people will migrate to that area from elsewhere, attracted by the likelihood of employment. Such migrants, however, tend to arrive well after economic expansion is under way; thus, a region's population growth will tend to lag behind its employment growth.

Figure B.5 Annual Percent Change in Population and Employment in Queensbury, 1990-2016



To summarize for the Town, natural increase (or decrease) and net migration have contributed to the town's population over the last nearly three decades. During the 1990s, natural increase was a significant, positive contributor to population change (net 588 births over deaths over the decade); with net migration providing the lion's share of the growth in the town over the decade (contributing a net 2,222 to the town's population). In the 2000s, net natural increase began to erode ending with a marginally positive contribution; while virtually the entire population growth was due to net in-migration. Since 2010, natural change has been a net negative number (i.e., the number of deaths were higher than the number of births), contributing a net loss of -280 between 2010 and 2016. Net migration, already substantially diminished during the protracted Great Recession, also contributed a net population loss (-14) in the years since 2010.

Figure B.6 Components of Population Change in Queensbury, 1990-2017



Households in Queensbury

A significant demographic determinant in housing demand is new formations of households and household size. Looking back at the past three decades, household changes 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 in their late-sixties to mid-seventies, and the youngest nearing their mid-fifties. 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 now in the prime 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 in the entire United States over the next decade. This well-known demographic dynamic will therefore affect the level and nature of housing demand in Queensbury over the next decade as well.

Off-setting declining housing demand caused by the aging "baby boom" population is the trend towards 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 increment of population growth in the region over the next decade than was the case over the last twenty to thirty years.

The decline in average household size again reflects long-standing social changes in the U.S. 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 single-parent families and the growth of single-person households.[6] The implication of smaller household size is increasing responsibility to meet the evolving housing unit needs of town residents as the population grows with these new household characteristics. The result is potentially greater demand for smaller units, characteristic of households headed by persons aged 50 years and older.

Figure B.7 Households in Town of Queensbury, 1990-2016

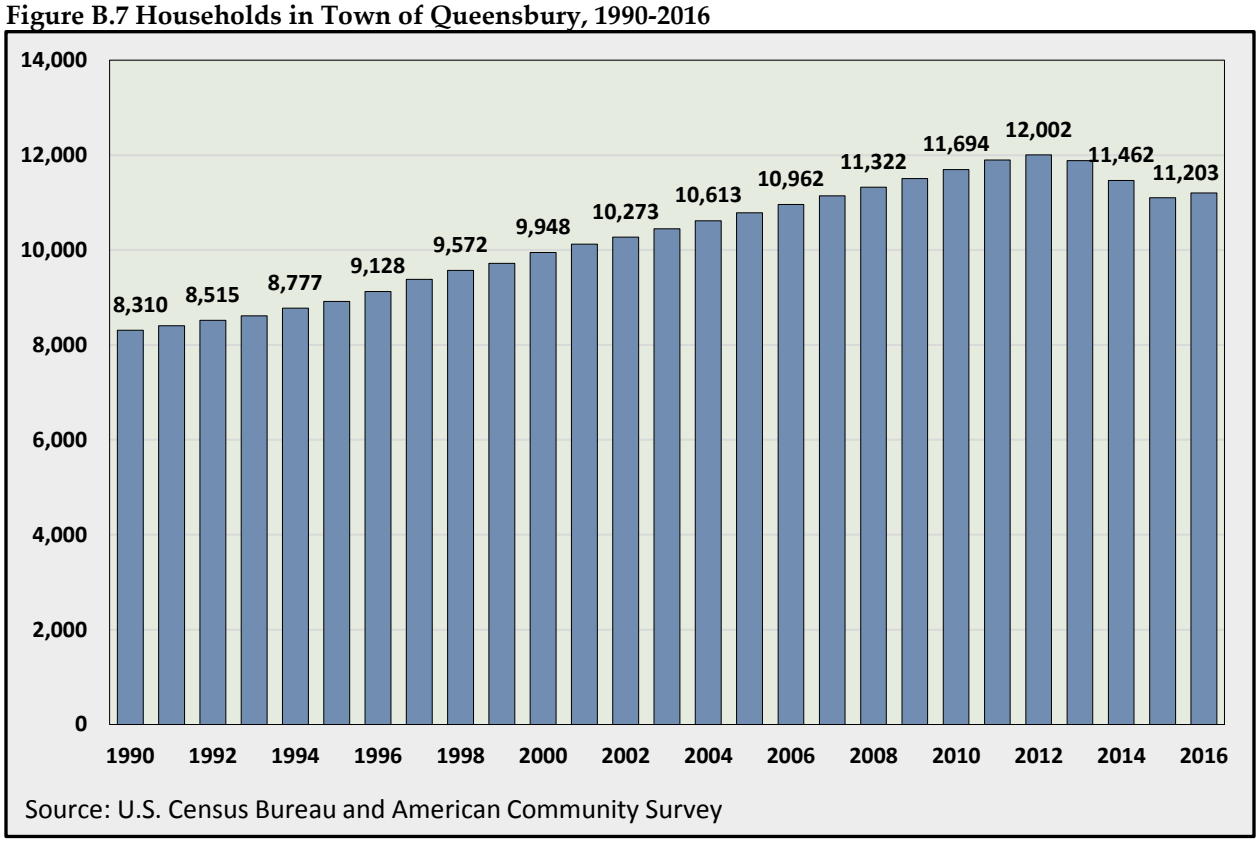


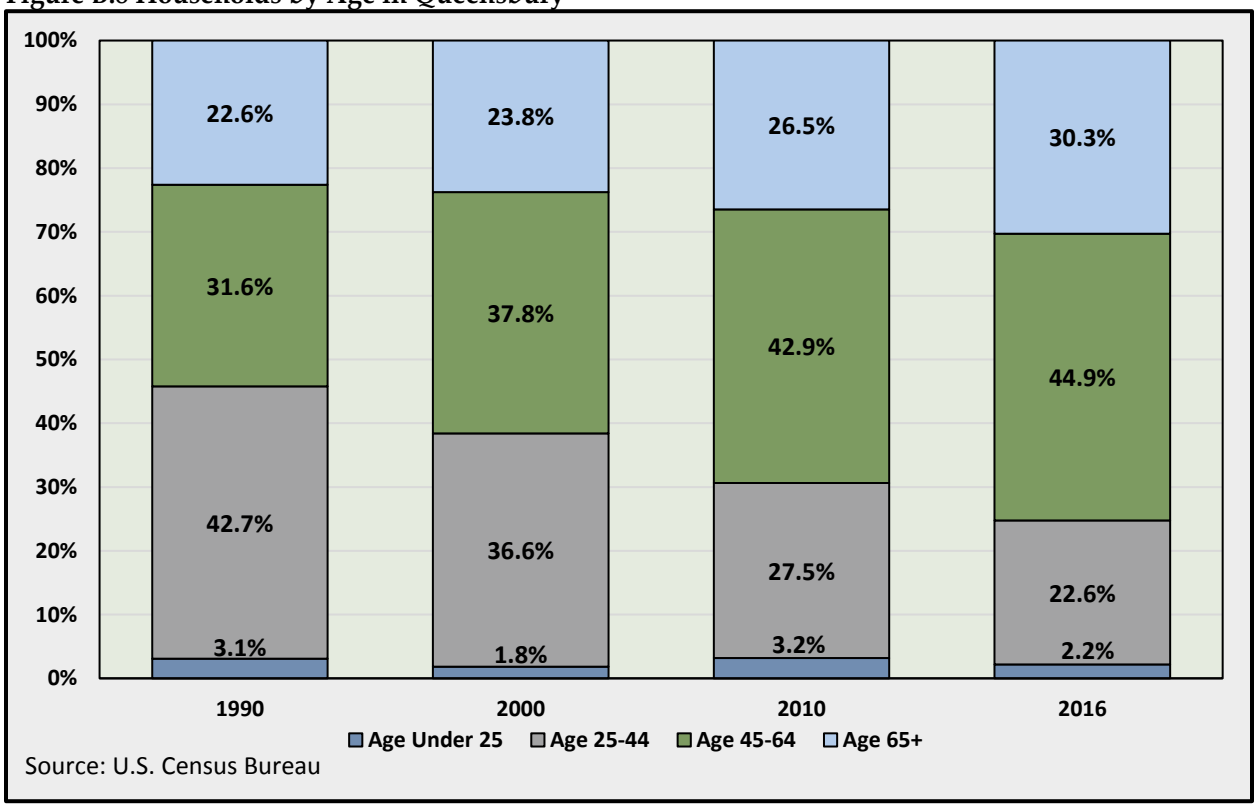
Table B.5 Households in Town of Queensbury, 1980-2016 (Selected Years)

[6] Nationally, the number of single-parent families rose sharply during the 1970s, but leveled off at about 15 percent of all families across the nation during the late 1980s and early 1990s; increasing again in the later 1990s through the 2010s to about a third of all families are single-parent in 2017. According to the U.S. Census Bureau, approximately 32 percent of all children are living in a single-parent household. The share of single-person households has increased gradually since the 1970s. In 2000, about 22 percent of all households were single-person; in 2017, about 30 percent are single-person households. [In New York, 29.7 percent of all households in 2017 were single-person households.] An increasing share of single-person households are in the above 50 years cohort category; about 62 percent of all households.

Region/Municipality	1990	2000	2010	2016	Change in Households 1990-2000	2000-2010	2010-2016	1990-2016
Town of Queensbury	8,310	9,948	11,473	11,158	1,638	1,525	-315	2,848
Glens Falls City	6,129	6,267	6,632	6,375	138	365	-257	246
Warren County	22,559	25,726	28,818	27,873	3,167	3,092	-945	5,314
Kingsbury	4,447	4,491	5,442	5,039	44	951	-403	592
Washington County	20,256	22,458	24,790	24,765	2,202	2,332	-25	4,509
Glens Falls MSA	42,815	48,184	53,608	52,638	5,369	+,424	-970	9,823

Source: U.S. Census Bureau and American Community Si *Prepared by Economic & Policy Resources*

Figure B.8 Households by Age in Queensbury



Seasonal Population

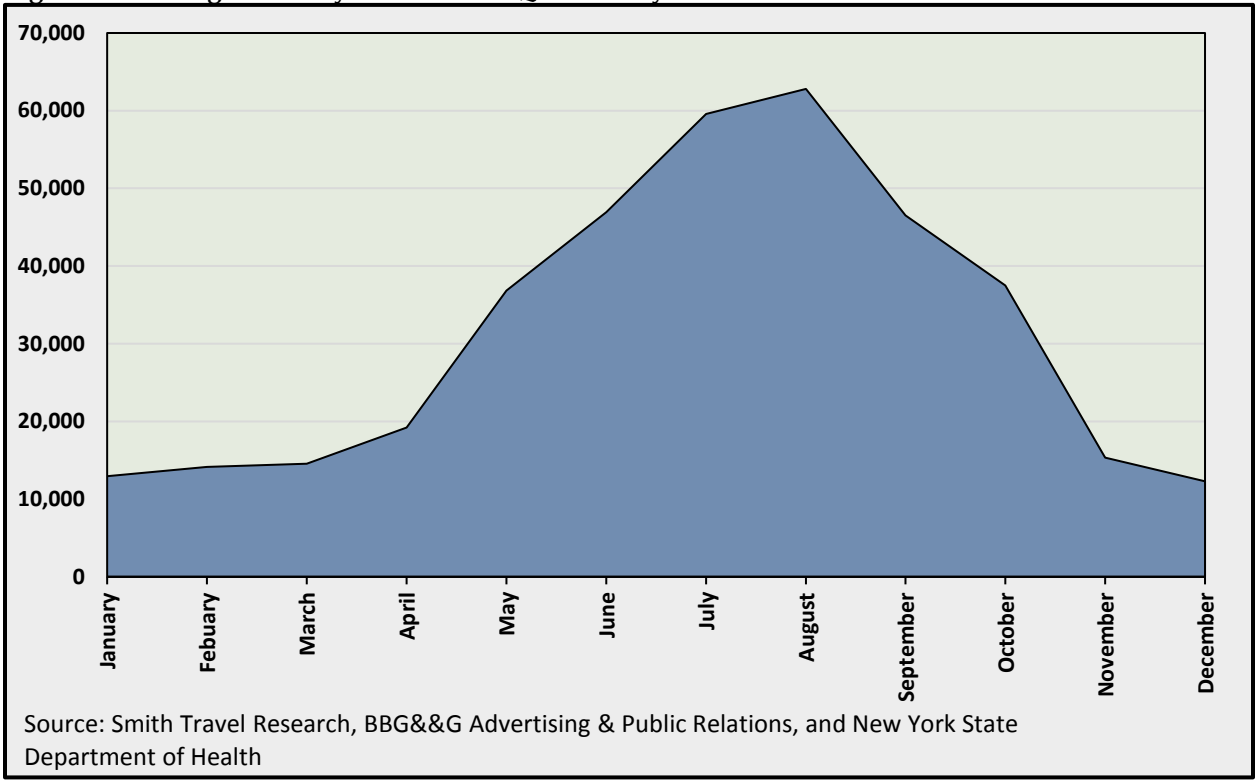
The prior discussion on population and population change in the region is focused on "resident" population, as reported by the U.S. Census Bureau. However, during significant portions of any given year, Queensbury and the greater Glens Falls MSA are also the home to a large number of "seasonal" residents not counted by the Census Bureau. Seasonal population includes both temporary residents that stay in second homes and visitors who stay in lodging establishments[7]. Queensbury is the gateway city of Lake George region, one of New York State's leading visitor destinations. The below *Figure B.9* provides a bell-shaped curve of seasonal visitation in Queensbury, via lodging stays.

Seasonal or second homes represent a sizeable portion of the local housing market. Nearly one-fifth of all housing units in the region are utilized as seasonal or second homes. In Warren County, which includes

[7] Lodging includes such accommodations as hotels and motels, hostels, and bed and breakfast places; but also so-called "alternative lodging," that is, homes utilized as vacation rentals under Airbnb or VRBO ("Vacation Rental by Owner").

the popular Lake George area, a quarter of its housing stock are used as second-homes. However, the share of seasonal and/or second-homes in Queensbury is much less a part of its housing mix accounting for about 8 percent.

Figure B.9 Average Monthly Visitation in Queensbury 2016

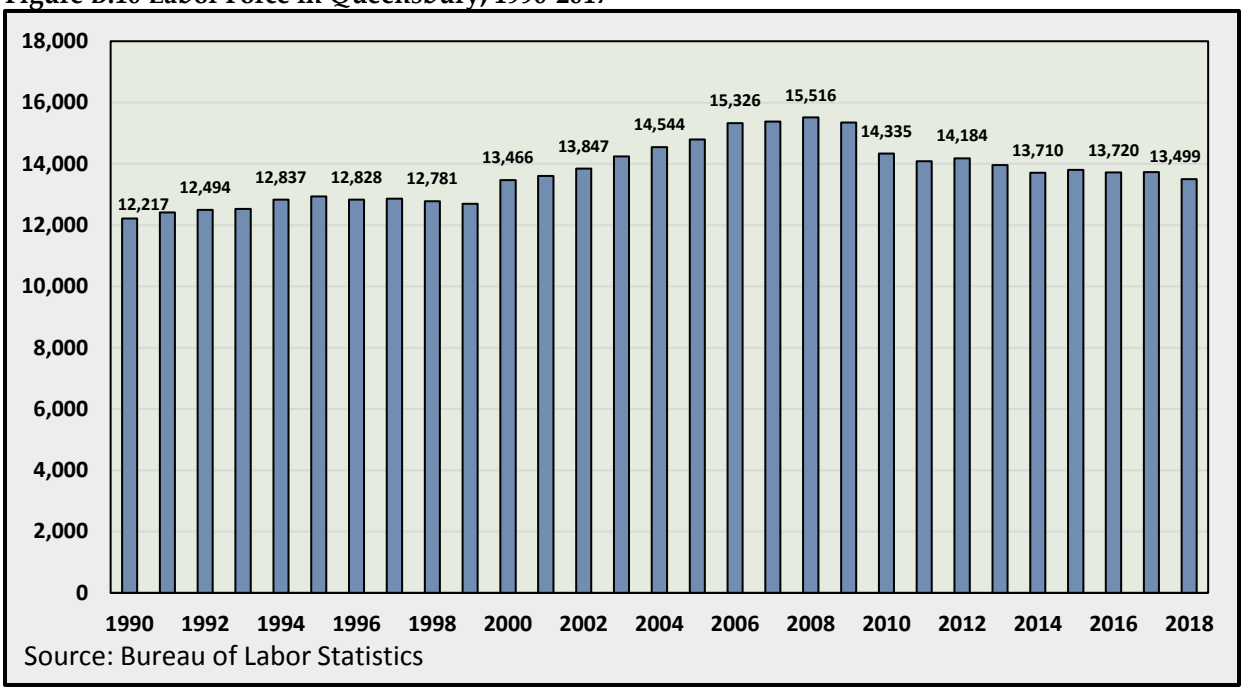


Source: Smith Travel Research, BBG&&G Advertising & Public Relations, and New York State Department of Health

Labor Market and Employment Trends in Queensbury

Labor Force Trends. The region's (and Town's) labor market continues to change in fundamental ways. During the 1990s and especially the early 2000's, the Town's labor force grew substantially, consistent with employment gains and overall regional economic growth. The Town's labor force expanded by 27% during the period between 1990 and its peak of 15,380 in 2008. However, starting with the bottom of the recession in 2009, the labor force contracted steadily due to the depth of the "Great Recession" and the region's subsequent sluggish recovery. The year 2010 marked an abrupt drop in the labor force, showing that 1,000 people had left the Queensbury labor market—an annual reduction of -6.6%. The most recent data shows a slight uptick in the initial months of 2018, but year-to-year labor force growth has still not been observed for the Town since 2008. In 2017, the Town's labor force totaled 13,729 workers; a 10 percent loss since its 2008 peak.

Figure B.10 Labor Force in Queensbury, 1990-2017

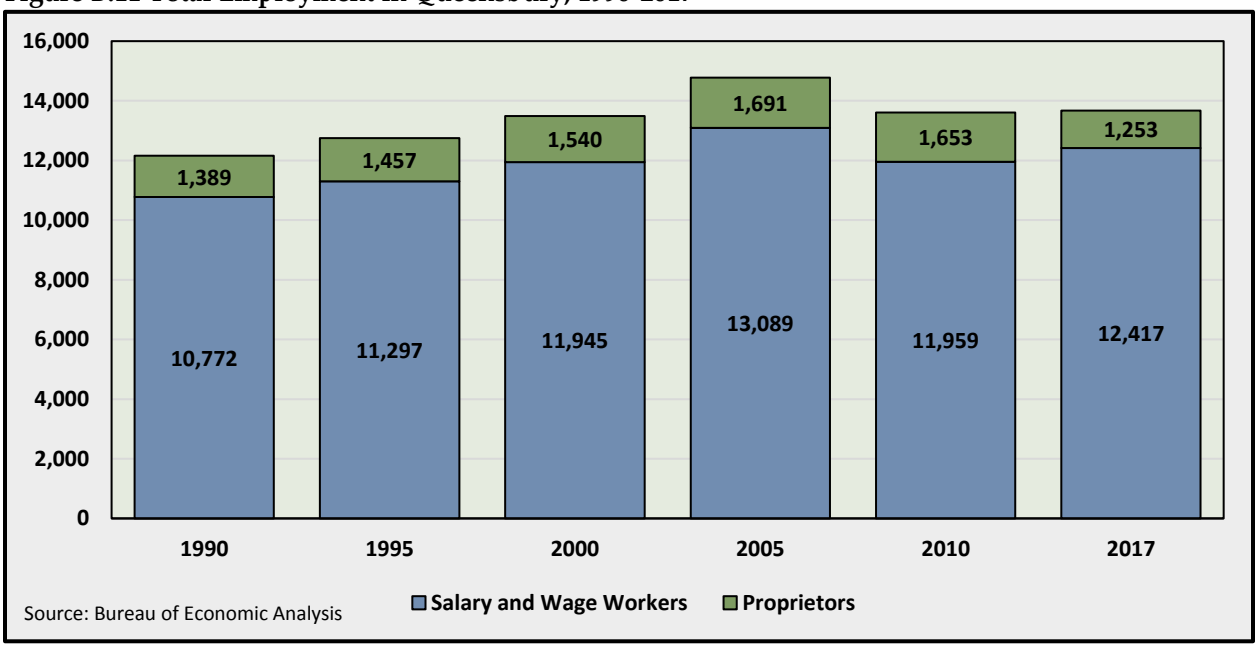


Employment Trends. In the 1990s, total employment[8] in the town has remained relatively stable, then grew rapidly in the 2000s with peak employment over the period being reached in 2008, with 15,388, according the Bureau of Economic Analysis. Much of the region's employment growth occurred during the early 2000s, however the start of the next decade signaled actual losses in employment as the region experienced then recovered from the Great Recession. Thus far during the latter half of the 2010s, employment growth in the town has plateaued at the same levels first observed in the early 2000s.

The Town's predominant worker historically has been salary and wage-earning employment rather than proprietorship. Since 1990 the share of proprietors in Queensbury has remained relatively stable at roughly 10 percent, with most of the employment growth the town experienced during the 1990s and 2000s generated by wage-earning job positions.

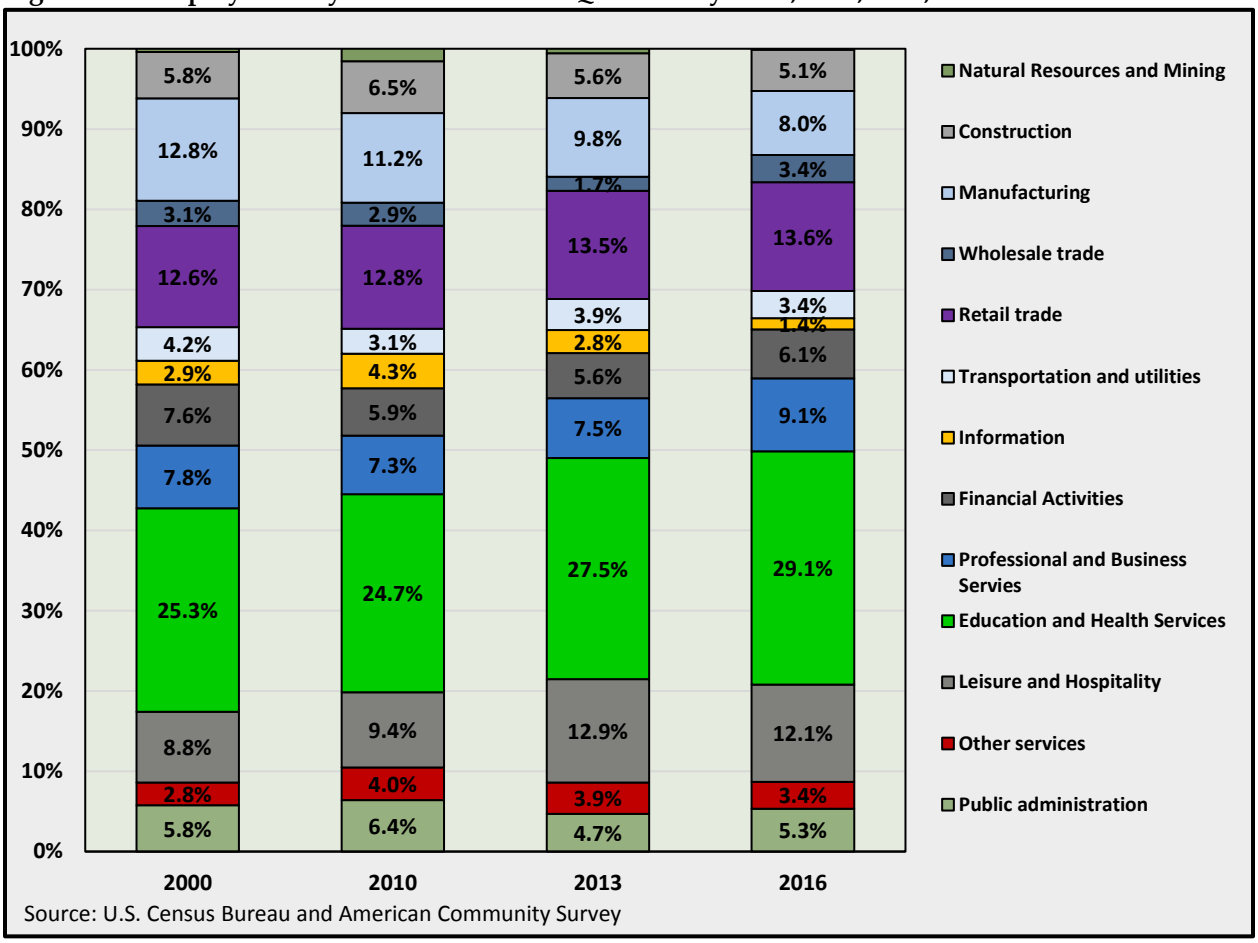
[8] Total employment used in this report is consistent with the Bureau of Economic Analysis (BEA) series of full- and part-time employment. In addition to wage and salary employment BEA includes employment of proprietors; as well as farm workers and military.

Figure B.11 Total Employment in Queensbury, 1990-2017



This pattern was more or less mirrored within the broad industry sectors within the regional economy. Natural resources and mining and the manufacturing sectors both experienced noticeable contractions between 2010 and 2016 as a percentage of total employment, declining by 1.4% and 3.2% respectively over that time period. During the same time period, the leisure and hospitality sector's share of total employment expanded by 2.7%, and education and health services expanded by 4.4%. However, the relatively minor churn amongst these four industry sectors represents the most significant changes to the makeup of the region's economic base since the depths of the recession and subsequent recovery. This would indicate that, while the town's employment base has contracted, Queensbury's employment situation is relatively stable.

Figure B.12 Employment by Sector in Town of Queensbury: 2000, 2010, 2013, and 2016



Source: U.S. Census Bureau and American Community Survey

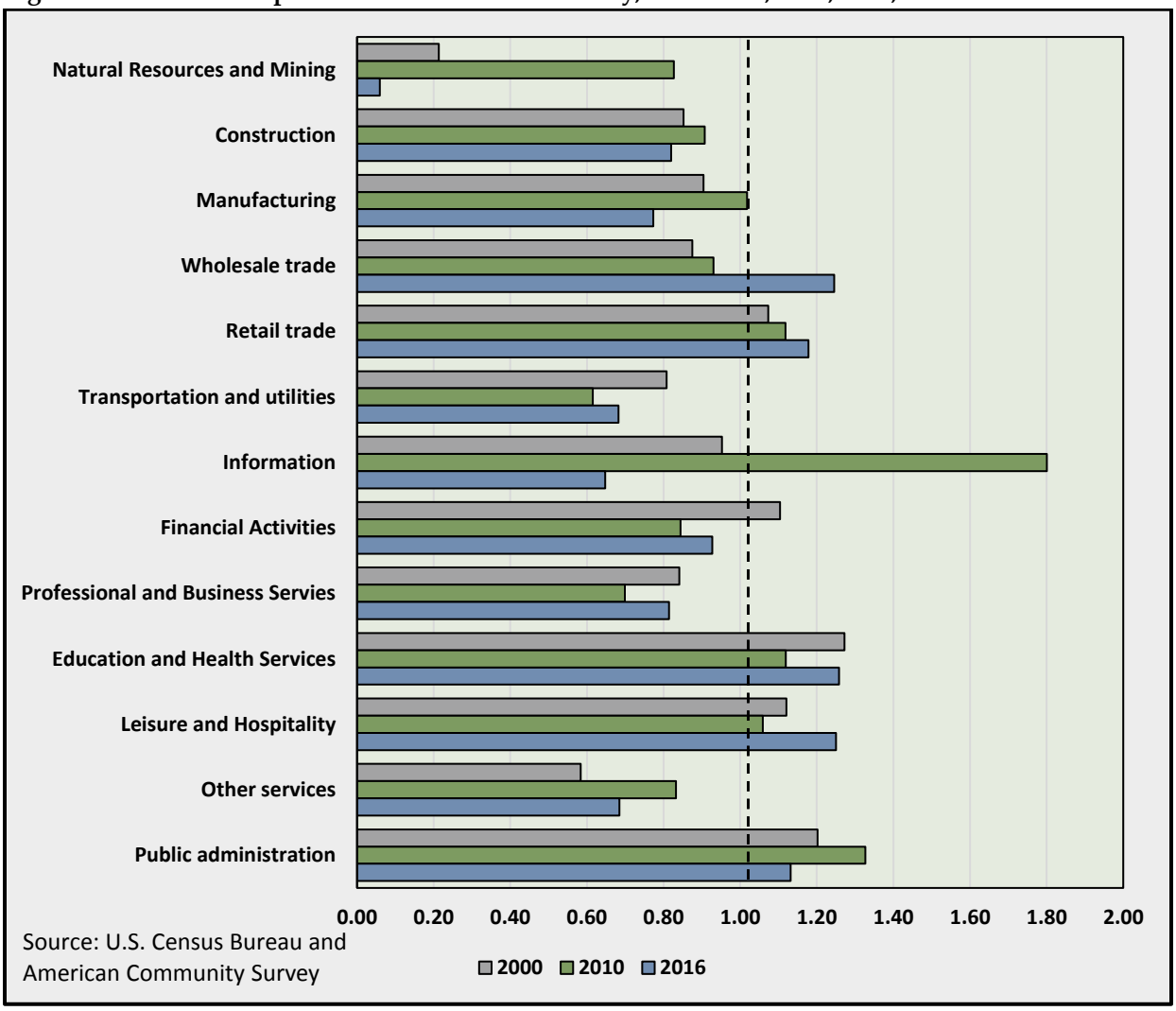
Regional Employment Structure.[9] In economic terms, a region's employment base is defined as that employment among firms whose products or services are sold to markets outside of the region, thereby capturing new income for the area. Those customers may be in other parts of the state, in other states, or in foreign countries. Regional economic theory holds that selling to a non-local customer brings income into a region, and qualifies that firm as part of the local economic base. Businesses that sell to local customers, such as other businesses or households, are called non-basic businesses. Services provided to markets outside the region and services provided to visitors coming in from outside the region also qualify as basic industries in capturing streams of new revenue. Other sources of new money are construction activity, non-local government activity, and retirees.

Basic employment is that share of a regional industry's employment that corresponds to the industry's output sold outside the region. Estimates of basic employment among the regional industries was based on an indirect measure of specialization called location quotient analysis. Location quotients are simply measures of economic specialization; here comparing the share of total employment in a particular industrial grouping in the region with the share it represents in the nation. The quotient for any industry or sector is determined by dividing its share of the region employment by its share of national employment. The idea behind this measure is that a region that is highly specialized in a given sector is exporting a

[9] Due to data limitations, Warren County is the region used here and is considered to be a good proxy for the Town.

portion of that good or service. In contrast, a less developed industry sector implies that the region is importing goods and services to meet local demand in that sector.

Figure B.13 Economic Specialization of Warren County, New York, 2000, 2010, and 2016



Source: U.S. Census Bureau and American Community Survey

A location quotient is formally computed in the following manner:

$$LQ_i = \frac{E_{ic} / E_c}{E_{is} / E_s}$$

where:

LQ_i is the location quotient for sector *i*;
E_{ic} / E_c is the percent of regional employment in sector *i*; and
E_{is} / E_s is the percent of national employment in sector *I*.

Essentially, location quotients indicate an industry sector's self-sufficiency and export orientation. Three important location quotient values derive from this self-sufficiency and export orientation notion. A quotient of 1.0 means that the region has the same proportion of its employment in sector *i* as the nation. In other words, the region just meets local consumption requirements through local production of the specified good or service. If the location quotient is less than 1.0, the region is not producing enough to meet local needs, meaning that local residents and businesses need to import some goods or services to meet production or consumption requirements. This analysis can become a key indicator for an import substitution strategy for local economic developers. If the location quotient is greater than 1.0, the county has a larger proportion of its employment in sector *i* than does the nation. This excess proportion is assumed to be for export purposes.

The location quotient is often used as a proxy for the extent to which an area's production is being consumed locally or sold to non-local markets. Such an approach helps to identify a region's export sectors. Implicitly, this notion contends that a regional economy depends upon the vigor of its export industries. Other economic sectors in the region in turn support these export-oriented industries by providing needed supplies and services. As these export industries grow, then linked local sectors will in turn expand.

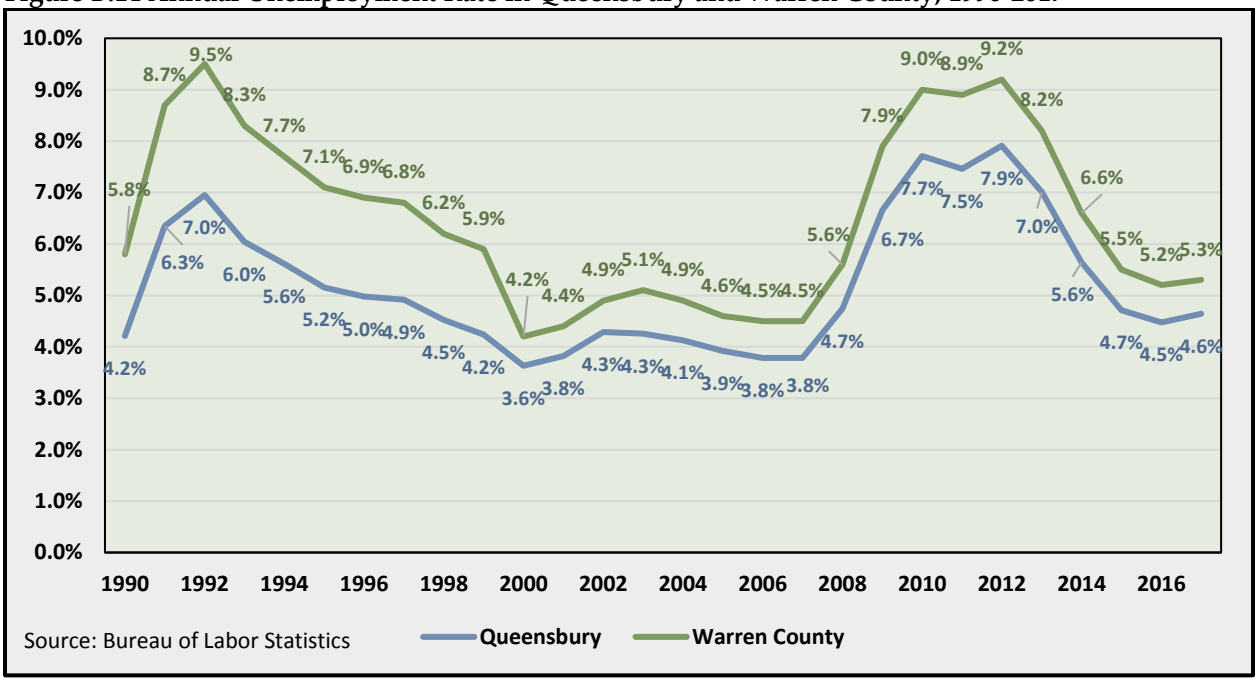
More recently, this technique has been utilized to help identify local industry clusters. Any exporting industry, identified through location quotient analysis, might be a strong candidate for further development and can serve as the core of an industry cluster for the region.

Economic snapshots of Warren County are provided for 2000, 2010 and 2016. Currently, the regional industries of importance include leisure and hospitality, education and health services, and wholesale trade. Each of these industries have location quotients exceeding 1.2; underscoring economic specialization.

Unemployment. Unemployment is a significant indicator of the vitality of a region's economy. As noted earlier, the labor force consists of two groups: those who are working; and those who are seeking work. Those who are not working but are actively looking for work constitute the unemployed.[10]

[10] Discouraged workers, defined as those no longer active in looking for work, are not included in the official labor force numbers.

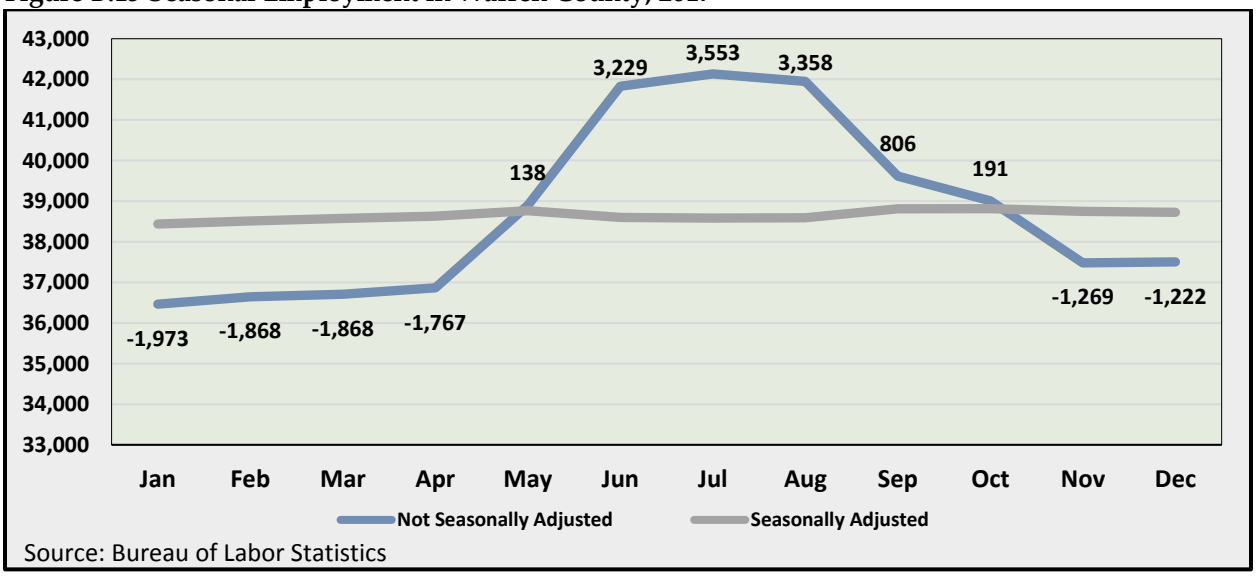
Figure B.14 Annual Unemployment Rate in Queensbury and Warren County, 1990-2017



The unemployment rate in Warren County has been consistently higher—between 0.6 to 2.5 percentage points--than the Town's unemployment rate over the past 27 years. Though both the county and the town are still gradually recovering from the "Great Recession," unemployment in the town has remained an average of 1.3% below the county average.

Seasonal Employment. As in population, seasonality of employment is significant within the region. Businesses, employers, and local government entities hire additional workers during the summer season, typically beginning in May and ending in September. The seasonal surge in workers is most pronounced in trade and leisure and hospitality sectors, which are the leading tourism-related industries in the region.

Figure B.15 Seasonal Employment in Warren County, 2017



Commuting Patterns

There is a daily dynamism of movement from residents to work places. These commuting worker flows include (1) internal movements—town residents traveling to in-town workplaces; and (2) external movements, composed of either town residents commuting to workplaces located outside of the town, or nonresidents commuting to workplaces in the town. The table below, which presents the most recent available commuting behavior data of residents and workers in the town, indicates that the town itself is—for the most part—a net importer of workers. In 2015[11], there were about 8,864 residents holding jobs outside of the town—primarily in Glens Falls or Saratoga. In addition, the commuting pattern table shows that the town imports about 10,486 non-residents to work in its employment centers.

The commuter data shows that Interstate 87 ("The Northway") plays a vital role in connecting residents of the town with employment opportunities to the south. The Northway runs south-to-north from New York City through the Hudson Valley and the Capital District, through the eastern Adirondacks, and ending at the Canadian border. Resting at the boundary between the Capital District and the Adirondack Forest, many residents of Queensbury commute south to Saratoga Springs and as far away as Albany and Colonie (with an estimated 700 residents making the trip).

Many workers in the neighboring towns of Kingsbury, Moreau, and the other communities surrounding the town to the north, east, and west commute to work at various establishments in Town.

Table B.6 Commuting Patterns in Town of Queensbury, 2015

Where Residents of Queensbury Work by Town	2015	
Municipality	Count	Share
Queensbury town (Warren, NY)	3,039	25.50%
Glens Falls city (Warren, NY)	2,413	20.30%
Saratoga Springs city (Saratoga, NY)	568	4.80%
Colonie town (Albany, NY)	377	3.20%
Moreau town (Saratoga, NY)	346	2.90%
Kingsbury town (Washington, NY)	335	2.80%
Wilton town (Saratoga, NY)	329	2.80%
Albany city (Albany, NY)	323	2.70%
Lake George town (Warren, NY)	308	2.60%
Fort Edward town (Washington, NY)	230	1.90%
Manhattan borough (New York, NY)	146	1.20%
Malta town (Saratoga, NY)	126	1.10%
All Other Towns	3,363	28.30%

Where Workers in Queensbury Live by Town	2015	
Municipality	Count	Share
Queensbury town (Warren, NY)	3,039	22.50%
Glens Falls city (Warren, NY)	1,421	10.50%
Moreau town (Saratoga, NY)	1,020	7.50%
Kingsbury town (Washington, NY)	973	7.20%
Fort Edward town (Washington, NY)	344	2.50%
Wilton town (Saratoga, NY)	287	2.10%
Lake Luzerne town (Warren, NY)	244	1.80%
Lake George town (Warren, NY)	240	1.80%
Warrensburg town (Warren, NY)	240	1.80%
Fort Ann town (Washington, NY)	238	1.80%
Corinth town (Saratoga, NY)	209	1.50%
Argyle town (Washington, NY)	165	1.20%
All Other Towns	5,105	37.70%

[11] Most current year of available data.

Figure B.16 Where Residents of Queensbury Work, 2015

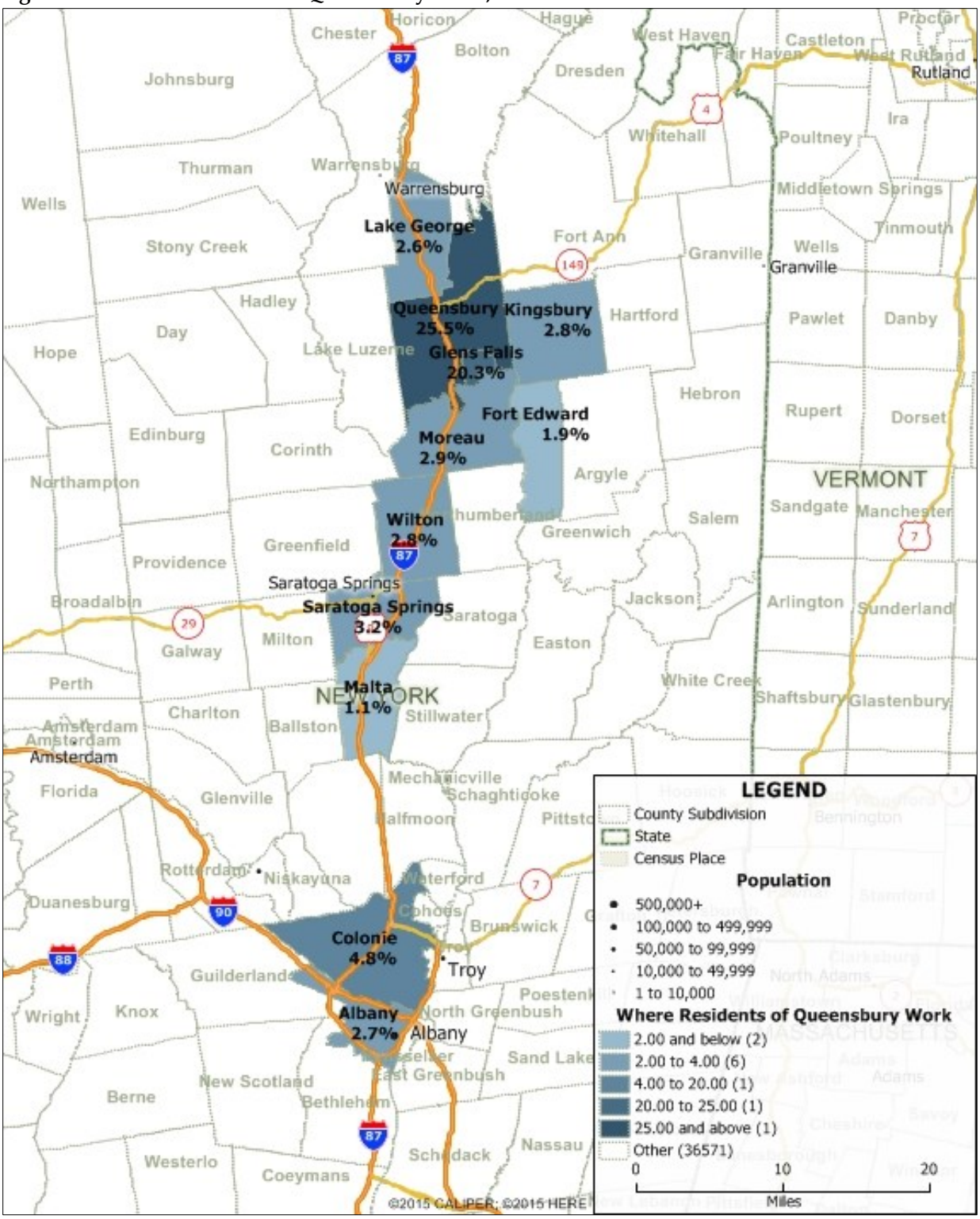
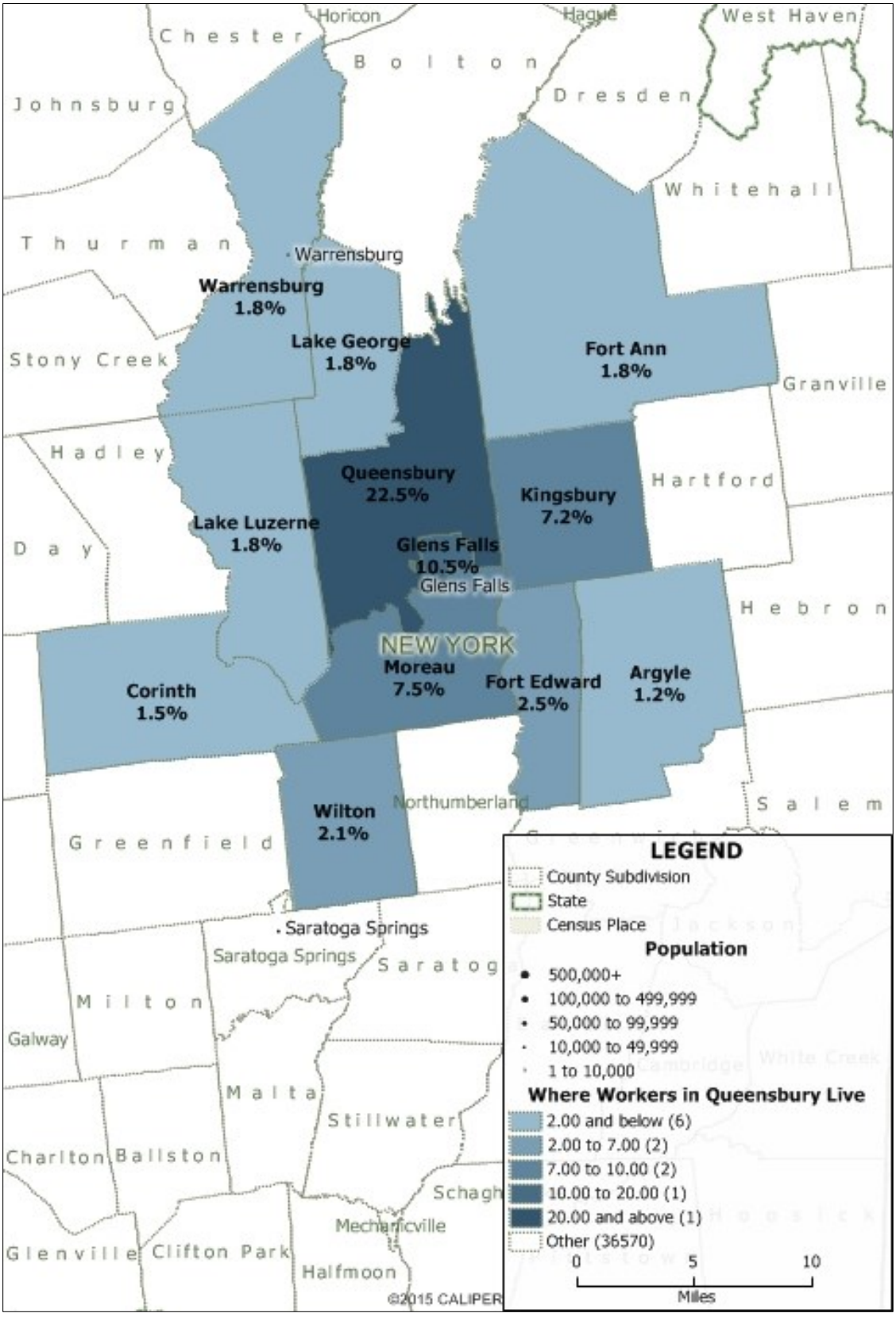


Figure B.17 Where Workers in Queensbury Live, 2015



Trends in Personal and Household Income in Queensbury

Personal Income. Employment measures only tell part of the economic story of a region. Personal income in Queensbury, the most broad-based measure of general purchasing power available at the local level, amounted to over $1.54 billion in 2016. When measured in current dollars, the county's total personal income increased more than three-fold between 1990 and 2016. However, when measured in constant 2012 dollars to adjust for inflation, the entire increase over the 26-year period amounted to 76 percent.[12]

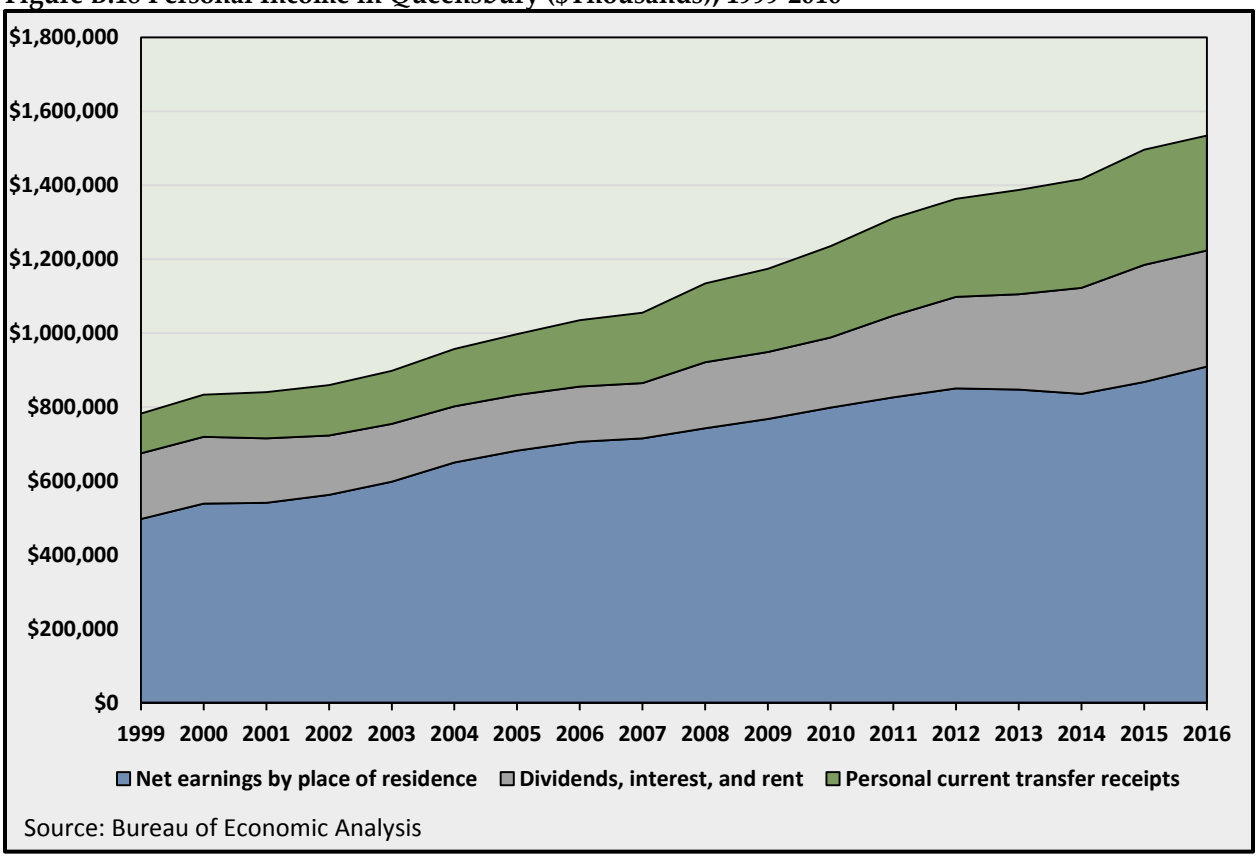
Personal income consists of three major components: net earnings for labor services, property incomes, and transfer payments. Net labor earnings ($910 million), which accounted for 59.3 percent of the Town's total personal income in 2016, can be considered payment for current labor services. Net earnings include wage and salary disbursements, proprietors' income, and other labor income which are mostly employer contributions to private pension and welfare funds. The contributions that individuals make to social insurance programs (e.g., Social Security taxes) are excluded from net earnings.

The remaining non-labor portion ($625 million or 40.7 percent) of the Town's personal income was split between dividends, interest, and rent (which is also called property income) and transfer receipts. While wages and proprietor income are the return to productive labor, dividends, interest and rent are the return to fixed assets like stocks, bonds, and rental property. Property incomes ($314 million) account for 20.4 percent of regional income; above the New York State average. Transfer receipts, the other portion of non-labor income, accounts for 20.2 percent of the Town's personal income ($311 million); compared to the state's share of 18 percent. Transfer receipts are commonly referred to as "unearned income," receipts from the government to people (and non-profit institutions) for reasons other than labor services. Some people might think "welfare payments" when hearing transfer receipts. However, "welfare" only accounts for about 5 percent of transfer receipts in 2016, with unemployment insurance benefits adding another 2 percent. Transfers receipts include retirement benefits, medical benefits, veterans benefit payments, federal assistance for education and training programs for individuals, but also include government payments to nonprofit institutions as well as business payments to individuals.

Retirement benefits and medical payments amount to nearly three-quarters of all transfer payments for the Town. Together with the about 21 percent of personal income coming from dividends, rent and interest, non-labor income comes to 41 percent of the regional economy; and this is mostly controlled by the region's senior citizens. Put another way, if one focused only on jobs and the money they bring in, over two-fifths of the economy would be ignored.

[12] The U.S. Bureau of Economic Analysis reports personal income data in current dollars--the basis of the value or purchasing power of the dollar during the year in which the incomes are received. To remove the effects of inflation and allow for direct comparison of personal income in terms of an approximation of real purchasing power over time, constant dollar or real estimates of personal income are computed using the Implicit Price Deflator for personal consumption expenditures (2012 = 1.00).

Figure B.18 Personal Income in Queensbury ($Thousands), 1999-2016



Median Household Income.

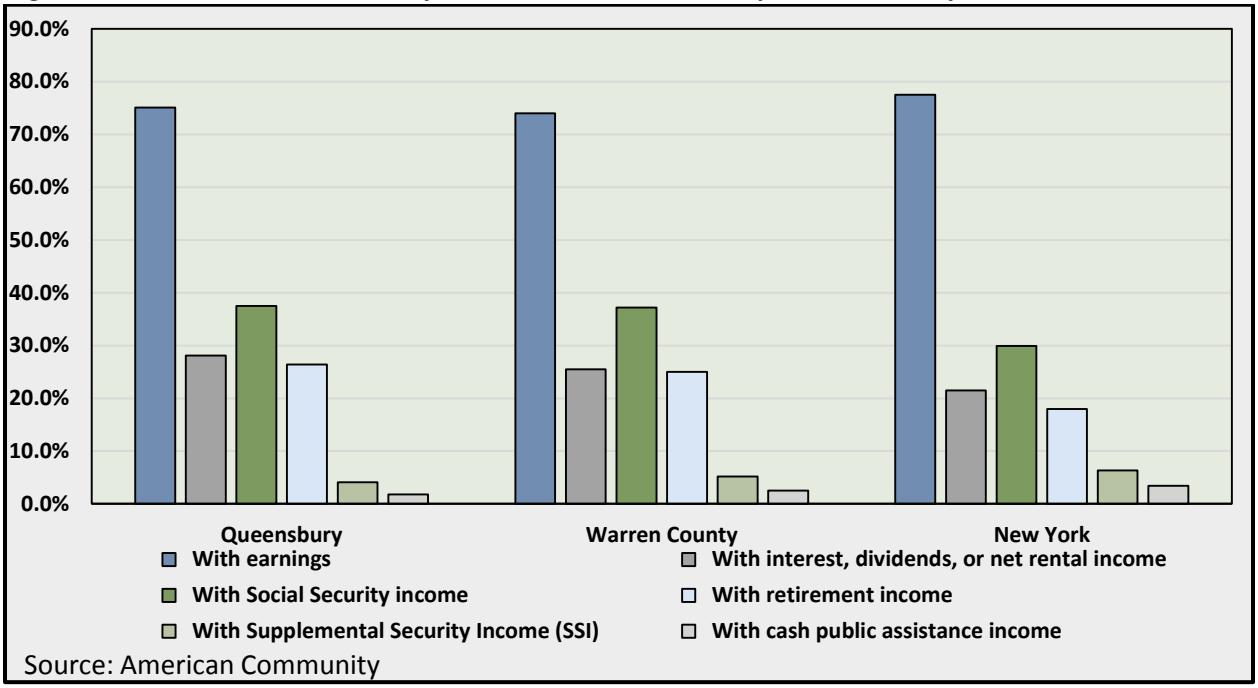
Median household income for the Town as a whole was $65,914 in 2016, growing by $7,509 over the previous eight years. For residents who owned their home, median household income in 2016 was $76,714. This is in contrast to the median household incomes of renters in Queensbury at $38,095 in 2016. To contrast further, in the eight years since 2009, owners' median household income has grown by $8,423 while renters' median household income has grown by a relatively marginal $1,172. This shows a clear contrast between economic conditions and opportunities experienced by individuals within either housing category.

Table B.7 Median Household Income of Queensbury and Peer Communities, 1999, 2010 and 2016

Region/Municipality	1999	2010	2016	Annual Growth Rate	
				1999-2010	2010-2016
Queensbury	$47,225	$61,009	$65,914	2.40%	1.30%
Glens Falls City	$30,222	$41,950	$46,305	3.00%	1.70%
Kingsbury	$34,919	$44,574	$46,721	2.20%	0.80%
Warren County	$39,198	$51,619	$57,174	2.50%	1.70%
Washington County	$37,668	$48,327	$51,449	2.30%	1.00%
New York	$43,393	$55,603	$60,741	2.30%	1.50%
United States	$41,994	$51,914	$55,322	1.90%	1.10%

Source: U.S. Census Bureau and American Community Survey *Prepared by Economic & Policy Resources*

Figure B.19 Percent of Households by Income Source, Queensbury, Warren County, and New York, 2016

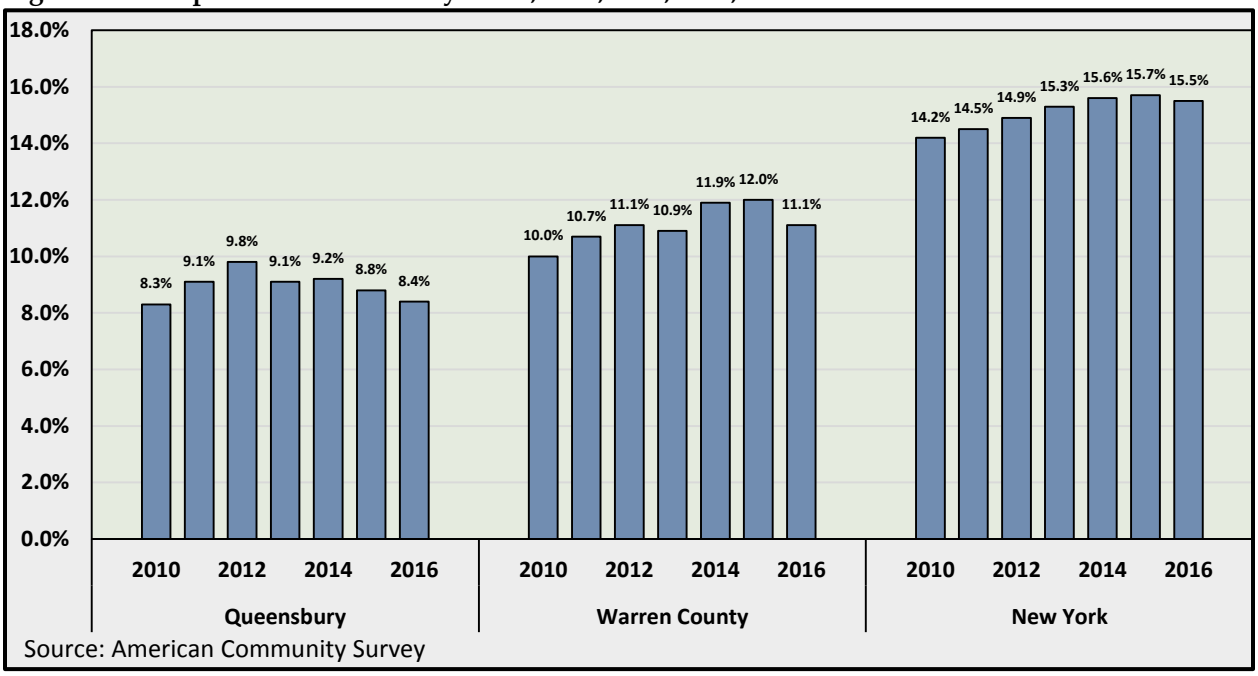


Source: American Community

Poverty in Queensbury.

Statistics indicate that 2016 poverty levels for individuals range from a low of 8.4 percent within the Town, compared to the New York State count of 15.5 percent. For children (under 18 years old), 11.6% within the Town fall below the threshold, compared to 21.9% statewide.

Figure B.20 People below the Poverty Level, 2010, 2012, 2014, and 2016



Source: American Community Survey

Housing Supply in Queensbury

Turning to the housing inventory for the Town, Glens Falls City, and the County, the majority of housing units within the Town has historically been single-family units, with over 78% being single-family units in 2000. When compared to other nearby communities, the Town still has had a much higher concentration of single-family units.

In contrast, the City of Glens Falls had one of the lowest percentages of single family units at just 50% of units. Over the past 16 years, more multi-family units have been added than single-family units, leading to the share of multi-family units in the Town growing significantly over that time frame. As of the 2016 base year for this study, there were approximately 9,802 single-family units in the Town along with 2,881 multi-family units and 520 mobile home/other units (see Figure B.21 and Tables B.8, and B.9 below).

Figure B.21 Housing Supply in Queensbury in 2000, 2005, 2010, and 2016

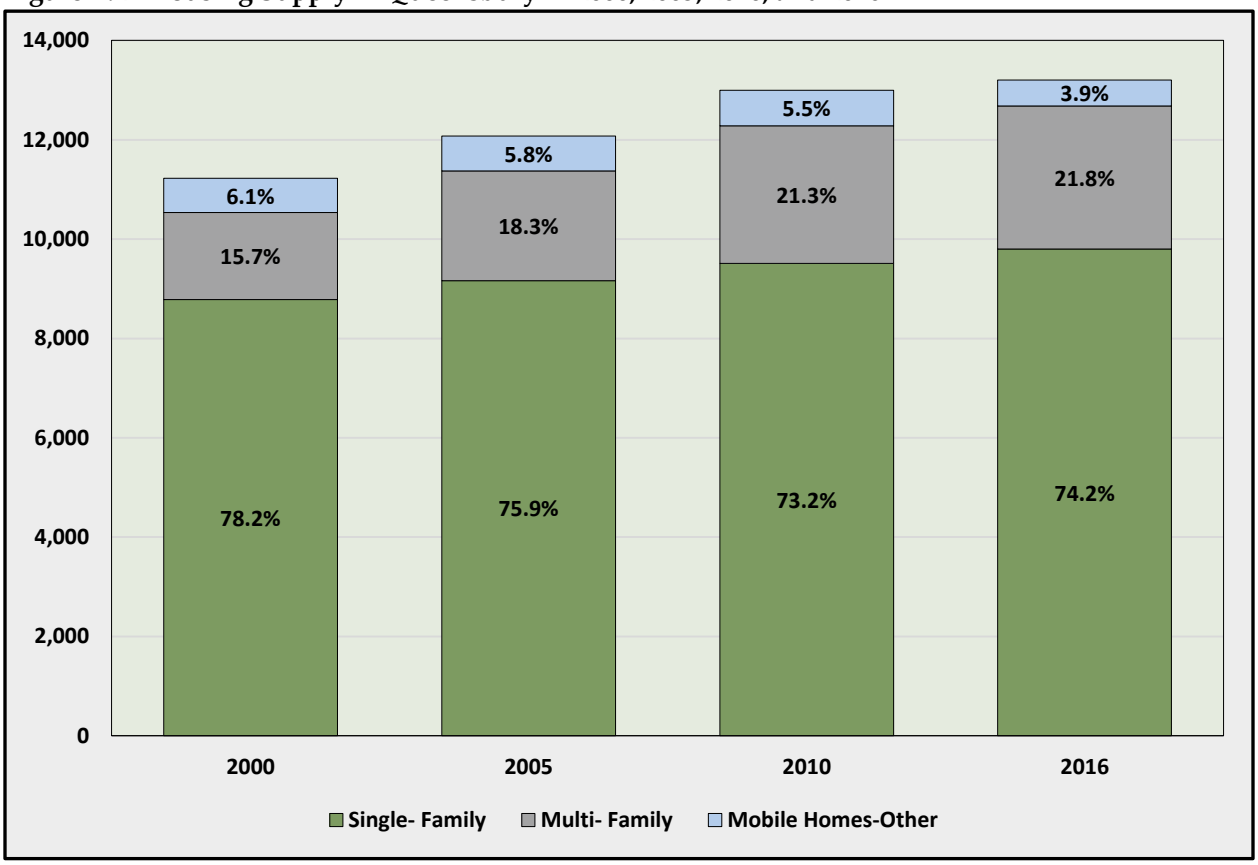


Table B.8 Housing Supply in Queensbury, Glens Falls City and Warren County: 1990, 2000-2016

Year	Queensbury				Glens Falls City				Warren County			
	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other
1990	9,632	7,263	1,570	799	6,569	3,200	3,293	76	31,737	22,668	4,999	2,911
2000	11,223	8,780	1,758	685	6,811	3,373	3,421	17	34,852	25,703	6,687	2,462
2001	11,389	8,859	1,842	689	6,840	3,408	3,413	19	35,346	25,981	6,881	2,484
2002	11,558	8,937	1,928	693	6,870	3,444	3,406	20	35,648	26,117	7,040	2,492
2003	11,729	9,014	2,018	697	6,899	3,479	3,398	22	36,116	26,369	7,235	2,511
2004	11,902	9,089	2,113	700	6,929	3,515	3,389	25	36,625	26,649	7,443	2,533
2005	12,078	9,164	2,211	704	6,958	3,550	3,381	27	37,159	26,943	7,660	2,557
2006	12,257	9,236	2,314	707	6,988	3,586	3,373	29	37,692	27,233	7,880	2,579
2007	12,439	9,309	2,420	710	7,018	3,622	3,364	32	38,159	27,470	8,092	2,597
2008	12,623	9,378	2,531	713	7,048	3,658	3,355	35	38,414	27,553	8,261	2,600
2009	12,809	9,447	2,646	716	7,079	3,695	3,345	39	38,592	27,579	8,417	2,597
2010	12,999	9,514	2,766	719	7,109	3,730	3,336	43	38,726	27,569	8,565	2,592
2011	13,123	9,596	2,729	798	7,387	3,780	3,559	48	38,890	28,071	8,295	2,524
2012	13,170	9,622	2,758	790	7,595	3,920	3,669	6	39,004	28,442	8,355	2,207
2013	13,147	9,681	2,755	711	7,406	3,900	3,500	6	39,122	29,054	7,986	2,082
2014	12,964	9,603	2,682	679	7,507	3,708	3,795	4	39,265	28,986	8,228	2,051
2015	13,048	9,702	2,761	585	7,301	3,617	3,652	32	39,515	29,328	8,125	2,062
2016	13,203	9,802	2,881	520	7,230	3,613	3,605	12	39,793	29,388	8,399	2,006

Sources: US Census Bureau; American Community Survey *Prepared by Economic & Policy Resources, Inc.*

Table B.9 Housing Supply in Kingsbury, Washington County, and Glens Falls Metropolitan Area: 1990, 2000-2016

Year	Kingsbury				Washington County				Glens Falls Metropolitan Area			
	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other	Total Housing	Single-Family	Multi-Family	Mobile Homes-Other
1990	4,673	2,922	1,805	256	24,216	17,310	4,445	2,461	55,953	39,978	9,444	5,372
2000	4,823	3,030	1,591	202	26,794	19,729	4,615	2,450	61,646	45,432	11,302	4,912
2001	4,902	3,085	1,621	196	26,970	19,950	4,648	2,372	62,316	45,839	11,508	4,855
2002	4,982	3,142	1,650	190	27,100	20,134	4,673	2,293	62,748	46,249	11,717	4,799
2003	5,063	3,198	1,681	184	27,332	20,393	4,715	2,224	63,448	46,662	11,930	4,743
2004	5,146	3,256	1,712	178	27,573	20,658	4,757	2,158	64,198	47,080	12,147	4,688
2005	5,230	3,314	1,743	173	27,806	20,917	4,798	2,092	64,965	47,501	12,368	4,634
2006	5,315	3,373	1,774	168	28,379	21,430	4,897	2,052	66,071	47,926	12,593	4,580
2007	5,402	3,433	1,806	163	28,543	21,635	4,923	1,985	66,702	48,355	12,822	4,527
2008	5,490	3,493	1,839	158	28,694	21,828	4,949	1,917	67,108	48,788	13,055	4,474
2009	5,580	3,555	1,872	153	28,790	21,979	4,963	1,848	67,382	49,224	13,293	4,422
2010	5,671	3,618	1,905	148	28,844	22,095	4,970	1,779	67,570	49,665	13,534	4,371
2011	5,751	3,651	1,957	143	28,994	22,108	5,021	1,865	67,884	50,179	13,316	4,389
2012	5,679	3,641	1,868	170	29,089	22,219	4,958	1,912	68,093	50,661	13,313	4,119
2013	5,572	3,573	1,803	196	29,233	22,421	5,022	1,790	68,355	51,474	13,008	3,872
2014	5,539	3,512	1,837	190	29,303	22,290	5,117	1,896	68,568	51,275	13,345	3,948
2015	5,458	3,377	1,894	187	29,377	22,066	5,201	2,110	68,892	51,395	13,325	4,171
2016	5,604	3,541	1,923	140	29,444	22,438	5,069	1,937	69,237	51,826	13,468	3,943

Sources: US Census Bureau; American Community Survey *Prepared by Economic & Policy Resources, Inc.*

The following figure shows the monthly median sales price and the number of sold single-family houses (as well as the 12-month moving average of each) in the Town from January 1994 to May 2018 based on Warren County GIS parcel data.[13] The Queensbury housing market has experienced substantial change over the last twenty-five years. The 1990s were characterized by moderately increasing prices. With the advent of increased incentives for homeownership, relaxed loan requirements, and attractive sub-prime mortgage rates, the Town experienced rapidly increasing prices as was the case for much of the nation through this period. During the Great Recession, house prices experienced a protracted decline. In the current recovery, house

[13] An important caveat for this parcel data is a single-frequency rule; meaning if a house was sold more than once over this 1994-2018 period, only the most recent sale is reflected in the chart above. This rule results in underestimation of the number of homes sold as well as altering the median sales price in earlier years.

prices have finally rebounded to the earlier 2006-7 peak. This chart also shows significant seasonality in the housing market which is typical of most housing markets especially ones similar to Queensbury.

Figure B.22 Monthly Median Sales Prices of Single-Family Homes (and 12-Month Moving Average), 1994-2018

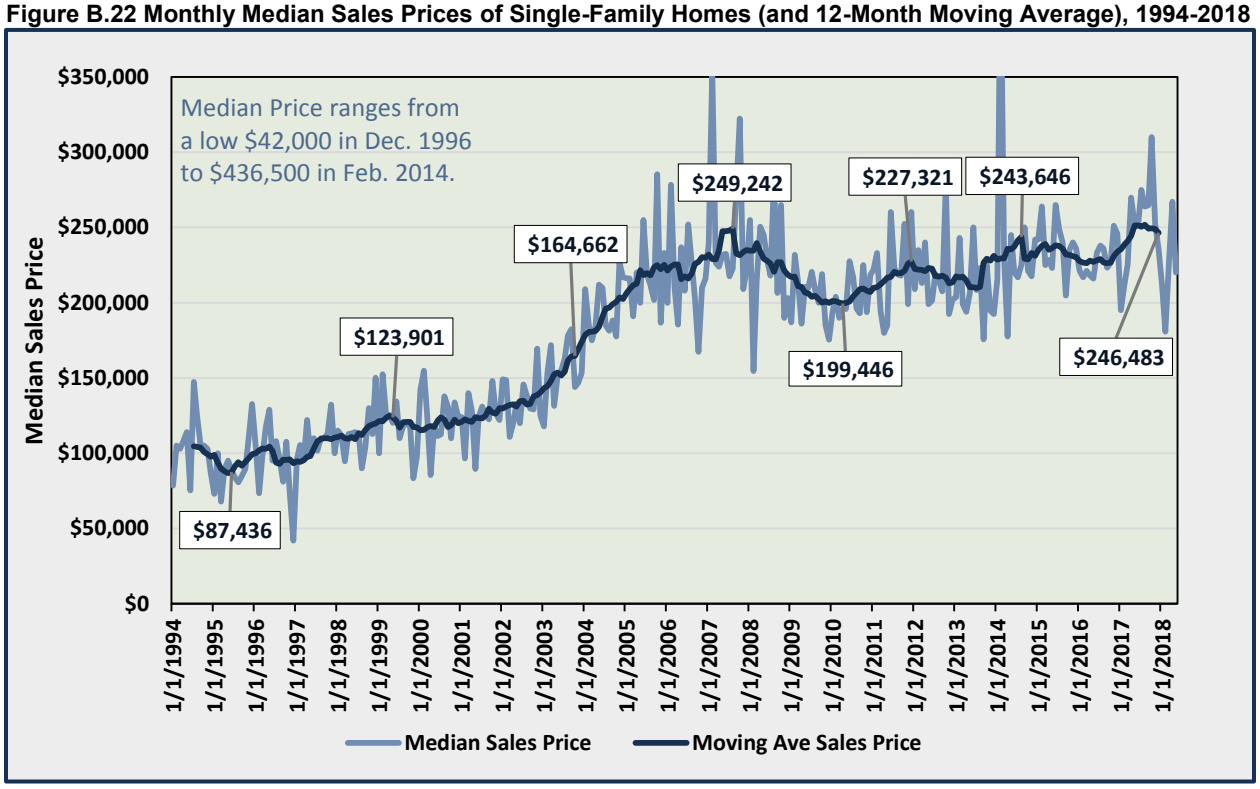
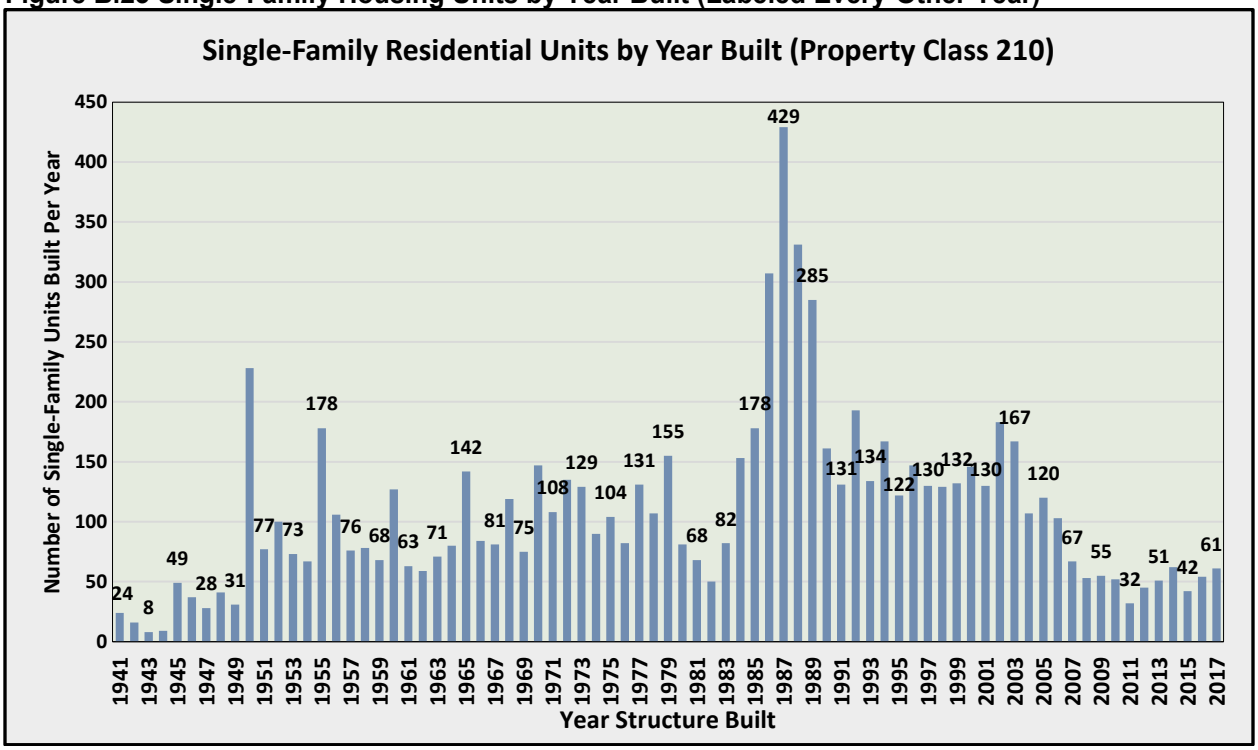
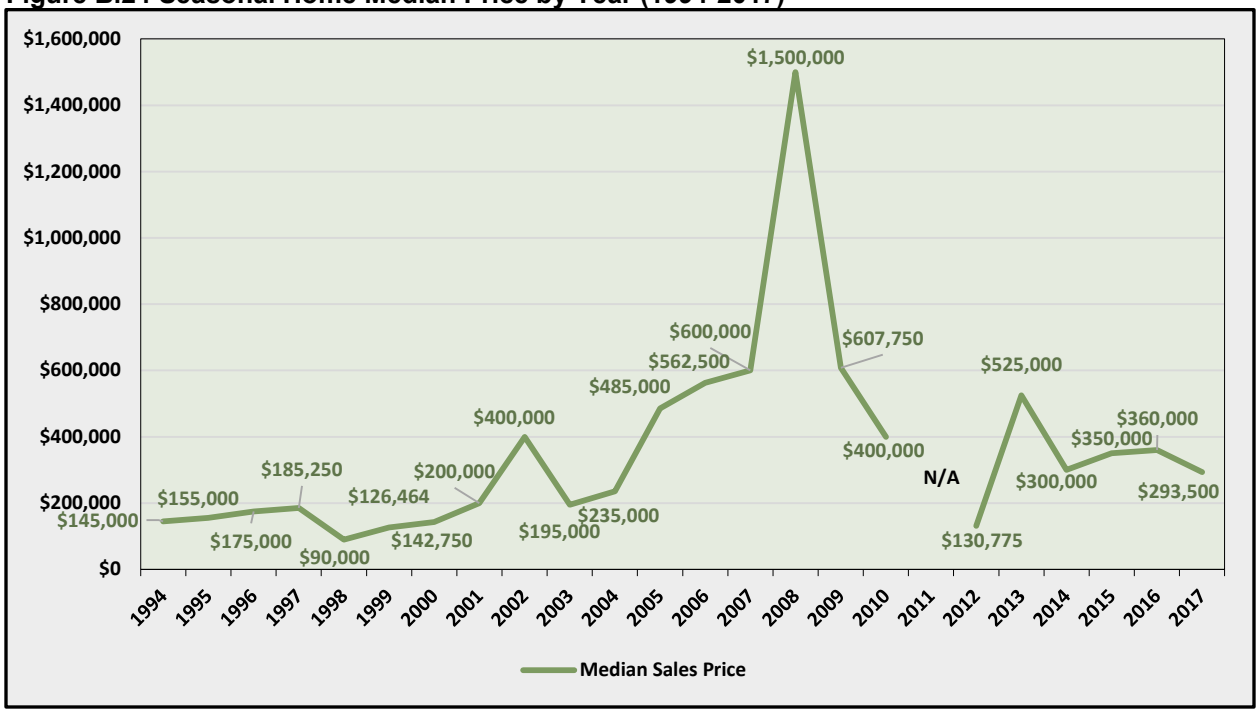


Figure B.23 Single-Family Housing Units by Year Built (Labeled Every-Other Year)



An analysis of single-family housing stock by year built shows a wide range of ages with some houses dating back to the late 1700s. The majority of existing houses in the Town (more than 90%) have been built since 1941 (see figure B.23). Following slower housing unit construction in the 1940s, the pace of construction quickened in the Town from 1950-1979 adding on average about 100 houses per year. During the mid-late 1980s, housing construction spiked in the Town with nearly 300 houses added each year. During the 1990s and early 2000s, new houses were added at a rate of 140 new units per year; following the Great Recession, housing construction fell to its lowest levels since the 1940s.

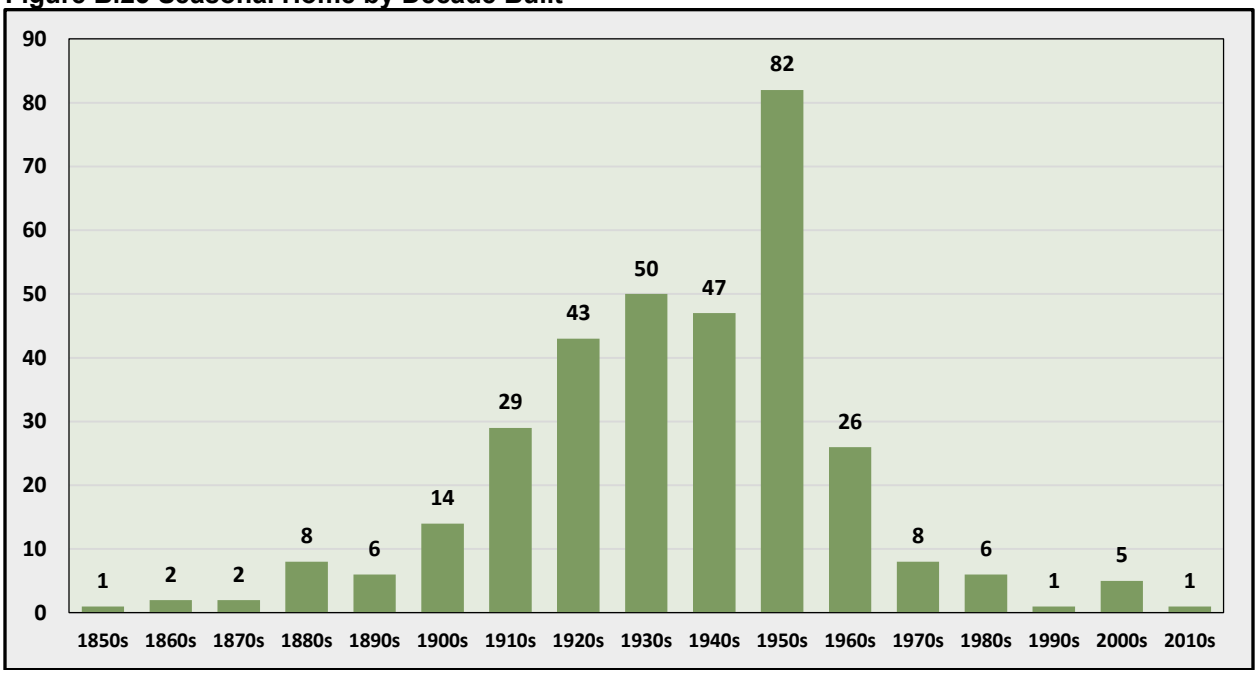
Figure B.24 Seasonal Home Median Price by Year (1994-2017)



While seasonal homes figure more prominently in other areas of Warren County, the vast majority of the Town's residences are year-round. The chart above shows the median sales price by year and the number of seasonal homes sold by year.[14] Clearly, there is a lot of variation in both selling price and the number sold in any given year. Compared to the year-round residential homes, seasonal homes in the Town represent a much smaller portion of the overall housing market. Unlike year-round residences, very little construction of seasonal homes have taken place over the last 50 years. Most of the seasonal homes were built between from the 1910s to the 1960s. Furthermore, only 25% of the seasonal homes have been sold since 1994 (compared to 60% of single-family residences). A number of factors could be driving the differences such as differing zoning restrictions and requirements.

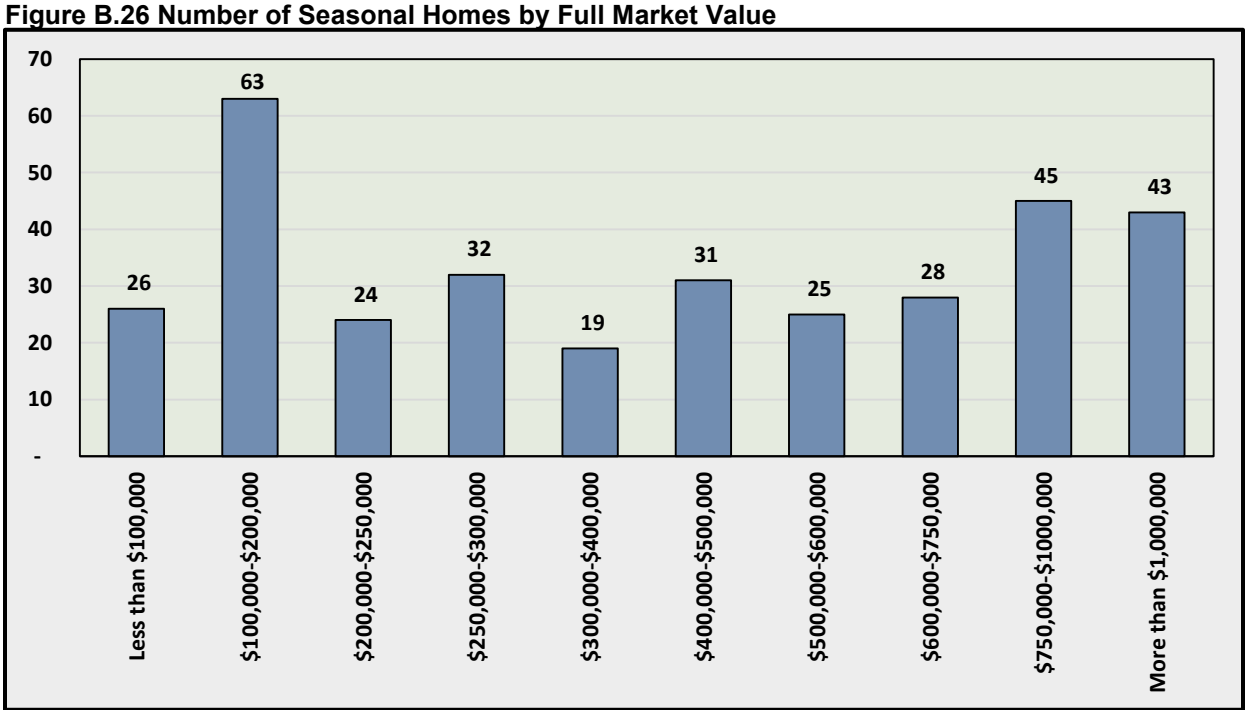
[14] The noted caveat above applies; given the smaller counts in sales, the single-frequency rule would result in reporting bias.

Figure B.25 Seasonal Home by Decade Built



The chart below shows the number of seasonal homes by their assessed full market value, which shows there is a disproportionate number of seasonal homes in the upper ranges of values with the third largest number being valued at over $1,000,000 and more than 50% of these parcels valued at over $400,000.

Figure B.26 Number of Seasonal Homes by Full Market Value

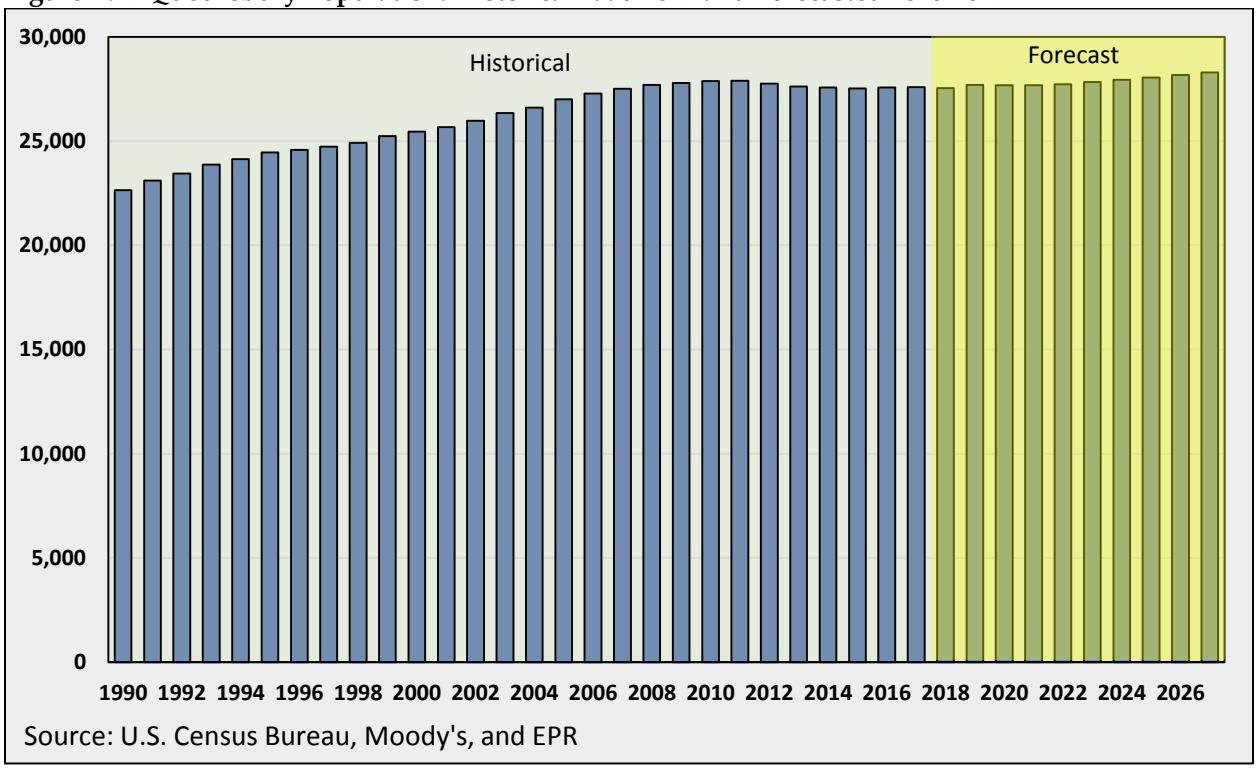


Regional Economic-Demographic Forecast

Population Forecast of Queensbury – 2018-2027

The Town is forecasted to experience an upward tick in population following 2017, reversing the stagnation/plateau trend observed during the recession/recovery period. From 2018 to 2019 the population is forecasted to grow by 152 residents, followed by slight decline of 12 residents during 2019-2020. Following a year of no growth or decline in 2020-2021, total population is expected to maintain a growth trend through the 2027 forecast horizon, when total population is expected to reach 28,292.

Figure B.27 Queensbury Population: Historical 1990-2017 and Forecasted 2018-2027



The following table shows how the forecasted population from 2018 through 2027 was distributed across the towns and regions in the county. In 2019, the growth in population of 152 in Queensbury is forecasted to be a net positive gain against the backdrop of an overall decline of 111 within Warren County and growth in Washington County and Glens Falls City. This is followed by a year of slight (-12) population decline within Queensbury, contrasted by growth in all three other geographic areas. Following one more additional year of stagnation in 2021 with no growth or contraction within the town, the remainder of the forecast horizon shows across the board growth in all four analytical regions.

Table B.10 Forecasted Population in Queensbury and Peer Communities, 2018-2027

Region/Town	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Queensbury	27,544	27,696	27,684	27,684	27,731	27,834	27,941	28,053	28,171	28,292
Glens Falls City	14,450	14,465	14,476	14,485	14,492	14,498	14,504	14,509	14,513	14,516
Warren County	64,747	64,636	64,655	64,767	64,950	65,139	65,333	65,534	65,741	65,952
Kingsbury	12,451	12,446	12,465	12,501	12,549	12,597	12,644	12,691	12,739	12,786
Washington County	61,867	61,879	61,968	62,109	62,288	62,465	62,638	62,810	62,981	63,151
Glens Falls MSA	126,614	126,515	126,623	126,876	127,238	127,604	127,971	128,344	128,722	129,103

Source: U.S. Census Bureau; Moody's Analytics; EPR *Prepared by Economic & Policy Resources*

The following table shows how the population forecast was distributed across the selected age cohorts. Quite clearly, the population increase is expected to be driven by the Age 65 and older cohort. From 2018 to 2027, the Age 65+ cohort is forecasted to increase by an average of approximately 131 residents per year (2.1%). All other age cohorts except for the 45-64 group will also experience population gains during the forecast period. However, the 45-64 cohort is expected to decline by an average -76 or -0.9% per year.

Table B.11 Forecasted Population in Queensbury by Age Cohort, 2018-2027

Age Cohort	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Ages 0-19	6,184	6,222	6,199	6,182	6,174	6,180	6,186	6,194	6,203	6,211
Ages 20-44	7,246	7,298	7,299	7,309	7,332	7,367	7,399	7,428	7,452	7,472
Ages 45-64	8,475	8,502	8,389	8,280	8,181	8,095	8,010	7,928	7,852	7,787
Ages 65+	5,639	5,674	5,797	5,913	6,044	6,192	6,346	6,503	6,664	6,822
Total	27,544	27,696	27,684	27,684	27,731	27,834	27,941	28,053	28,171	28,292

Source: U.S. Census Bureau; Moody's Analytics adjusted by EPR *Prepared by Economic and Policy Resources*

Household Forecast of Queensbury, 2018-2027

Total households in the Town are forecasted to increase slowly from 2018 to 2020 by approximately 206 households, but are estimated to increase more rapidly in 2021 and through the forecast horizon, averaging 119 new households per year in the town. By the end of 2027 it is forecasted that the town will have approximately 1,375 more households than it had in 2018.

Figure B.28 Households in Queensbury, 2017-2027

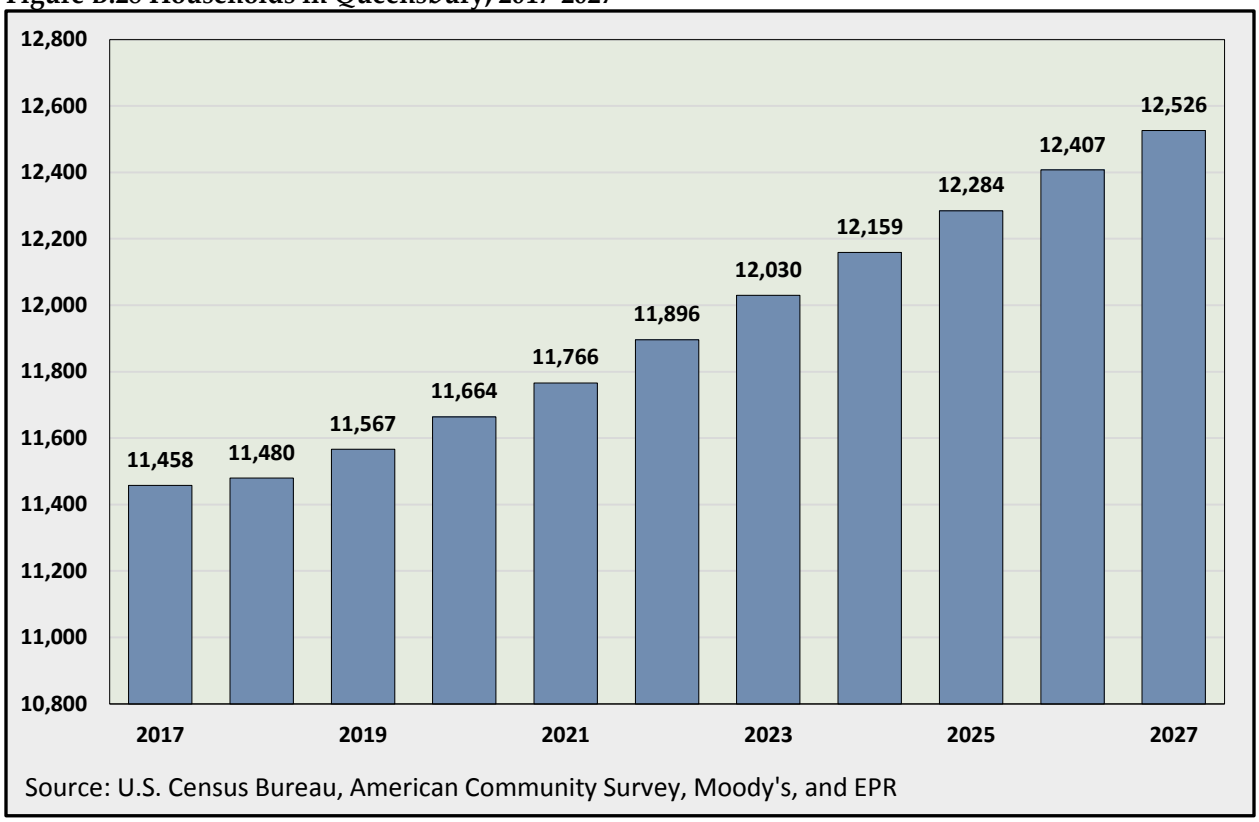


Table B.12 Forecasted Households 2018-2027

Region/Town	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Queensbury	11,480	11,567	11,664	11,766	11,896	12,030	12,158	12,284	12,407	12,526
Glens Falls City	6,512	6,551	6,584	6,612	6,641	6,669	6,693	6,717	6,739	6,760
Warren County	28,383	28,539	28,711	28,891	29,119	29,353	29,576	29,795	30,010	30,218
Kingsbury	5,080	5,094	5,113	5,134	5,162	5,192	5,221	5,250	5,278	5,305
Washington County	24,932	24,983	25,066	25,168	25,317	25,477	25,634	25,793	25,951	26,104
Glens Falls MSA	53,315	53,522	53,777	54,059	54,436	54,830	55,210	55,588	55,961	56,322

Source: U.S. Census Bureau; Moody's Analytics as adjusted by EPR *Prepared by Economic & Policy Resources*

Employment Forecast in Queensbury, 2018-2027

The town is forecasted to continue its steady increase in jobs in its recovery from the mid-2000s recession into the future period. From 2018 to 2027 employment is forecasted to grow at an annual average rate of approximately 96 jobs, with the largest year of job creation in Queensbury occurring in 2019, when 113 jobs will be added. While a labor market slowdown is built in to occur between 2023 and 2025, job growth will still occur steadily. At the end of 2027 it is estimated that there will be approximately 868 more jobs in the town than there were recorded in 2018 (annual average growth rate of 0.7%).

Figure B.29 Employment (Jobs) in Queensbury, 2018-2027

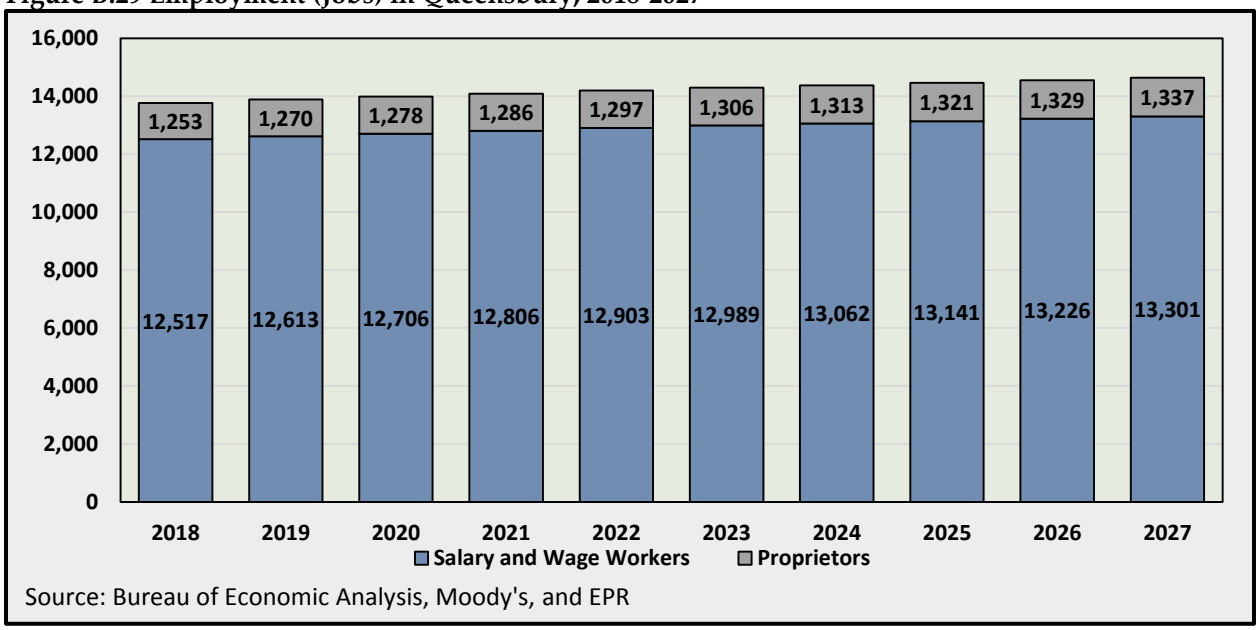


Table B.13 Employment in Warren County and Queensbury, 2018-2027

Region/Town	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Queensbury	13,770	13,883	13,984	14,092	14,200	14,294	14,374	14,462	14,556	14,638
Warren County	48,344	48,552	48,749	49,019	49,326	49,591	49,816	50,098	50,428	50,719
Washington County	23,197	23,245	23,265	23,279	23,293	23,301	23,306	23,318	23,337	23,353
Glens Falls MSA	71,541	71,797	72,014	72,298	72,619	72,892	73,122	73,416	73,765	74,072

Source: U.S. Census Bureau and Bureau of Economic Analysis; Moody's Analytics as adjusted by EPR *Prepared by Economic & Policy Resources*

APPENDIX C: HOUSING SUPPLY AND DEMAND

Introduction

A housing market is generally sub-divided into renter-occupied and owner-occupied housing markets. The key demographic metric utilized in assessing trends within these housing markets is households, specifically year-round resident households. A household represents the basic demographic unit and is defined (according to U.S. Census) as including all the people who occupy a housing unit (such as a house or apartment) as their usual place of residence. A household includes related family members and all unrelated people, if any (such as lodgers, foster children) who share the housing unit. A person living alone in a housing unit, or a group of unrelated persons sharing a housing unit such as partners or roomers, also qualifies as a household. Households are subdivided into two categories: family and non-family. Household counts exclude group quarters[1].

Housing Unit Supply and Demand Methodology

According to the U.S. Census Bureau, a housing unit is a house, an apartment, a mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters; or if vacant, intended for occupancy as separate living quarters. Separate living quarters are those in which occupants live separately from any other individuals in the building and which have direct access from outside the building or through a common hall. For vacant units, the criteria of separateness and direct access are applied to the intended occupants whenever possible. A housing unit is owner-occupied if the owner or co-owner lives in the unit even if it is mortgaged and not fully paid for. A renter-occupied housing unit is one that is rented for cash rent or occupied without payment of cash rent; such as a unit that is not owner-occupied.

A housing unit is considered vacant if no one is living in it at the time of enumeration[2], unless its occupants are temporarily absent. Units temporarily occupied at the time of enumeration by people who have a usual residence elsewhere are also classified as vacant. Unoccupied housing units are considered vacant; and vacancy status is determined by the terms which the unit may be occupied; whether for rent, or for sale, or for seasonal use only. A vacancy rate is that portion of the inventory (either rental or owner) which is vacant for rent or for sale.

Housing Unit Baseline Supply:

The housing unit supply forecast methodology followed the theory that the number of future housing units in the Town would be correlated and predicted by the number of forecasted housing completions in the Glens Falls MSA, as set forth in the long-term May-June 2018 Moody's Forecast for the MSA, and adjusted to the Town by the study team—within the context of the

[1] A group quarters is a place where people live or stay, in a group living arrangement, that is owned or managed by an entity or organization providing housing and/or services for the residents. Institutional examples include correctional facilities, nursing homes and hospice facilities; noninstitutional group quarters examples include college student housing, military housing, and group homes.

[2] The time the survey results are gathered and counted.

broader long-term economic forecast for the U.S. economy as a whole. For each category of housing unit (total, single-family, and multi-family), the calendar year 1990 through calendar year 2016 number of housing units in the Town was regressed against the calendar year 1990 through calendar year 2027 number of completions for each respective category. The results of these regressions were then used to forecast the calendar year 2017 through calendar year 2027 housing units in the Town and comparative communities and counties. The forecast was revised and put through a series of reconciliations in order to address housing start and housing permit data forecasted by the Moody's May-June 2018 Macro Forecast for the MSA as adjusted, and then was used as a baseline to regress against for the purpose of forecasting the Town and MSA housing data. This allowed the development of forecasts specific to the Town and each separate peer community and comparable county. This is consistent with the bottom-up methodology generally employed in this study. One additional matter, namely, seasonal housing (or second homes) are not included in this housing supply forecast. While seasonal housing is an important issue within some portions of the Glens Falls MSA—particularly in the north of Warren County astride Lake George or in the foothills of the Adirondacks, seasonal housing is not a significant part of the housing composition for the Town and its peer communities of Glens Falls City and Kingsbury.[3]

Summary of Additional Unit Adjustments:

In addition to the above, three significant adjustments were also made to the data-driven baseline housing unit supply numbers in the study. First, a top-level adjustment was made to the aggregate unit supply forecast to "un-constrain" estimated future housing unit supply so that it was equaled to estimated unit demand going forward from calendar year 2016. The theory behind that adjustment was that housing unit demand should also equal housing unit supply in aggregate over the long-term assuming housing unit supply was and is not otherwise constrained by economic performance or policy, financing, and/or by either infrastructure constraints or natural resource constraints.

The second adjustment was made to ensure that the forecasted regional distribution of the housing supply accurately reflected what has been occurring in the most recent time period prior to the forward-looking calendar year 2017 through calendar year 2027 forecast time frame. While there certainly were several "statistically-based" advantages to using a series of forecasting models that covered a longer time series going back to the early 1980s, the initial results of those longer term forecasting models did not produce a supply forecast that appeared to accurately reflect what has been occurring in the Town and its peer communities over the most recent five-year and ten-year time periods.

A third adjustment was also made with the intent of more accurately aligning the forecasted future housing unit change numbers among the Town and its peer communities. This involved ensuring that no individual municipality over the forecasted time horizon from calendar year 2017 through calendar year 2027 had an absolute housing unit decline in any given forecasted

[3] According to American Community Survey data, seasonal homes accounts for 7.7 percent of all houses in Queensbury, 1.9 percent in Glens Falls City, and 0.9 percent in Kingsbury.

year—or, in other words, had any single year going forward where total housing unit destruction exceeded the addition of new units. While the historical data for some municipalities indicated that a small decline in a municipality's housing unit inventory was plausible from time to time, such a scenario was unlikely unless accompanied by an atypical or unusual event. As such, since the baseline unconstrained forecast included in this study was not likely to include an atypical or unusual event, the housing unit supply forecast for this study essentially forced all future housing supply additions for all municipalities to include "net positive" unit addition for all years over the calendar year 2017 through calendar year 2027 time period. Adjustments to impacted municipalities included housing unit additions in the "other" category being reallocated to either single-family, multi-family or mobile home/other. That adjustment approach made intuitive sense from the standpoint that an assumption of positive growth in permanent housing units in a particular municipality would likely be accompanied by a reduction in more temporary (e.g. mobile housing unit) housing. These adjustments together produced the final housing unit supply forecast that was then utilized in the study's various gap analyses.

Housing Unit Demand:

Housing unit demand is closely associated with the number of households headed by a year-round resident residing in a particular locale (In this case, a year-round resident of Queensbury). These households reside in housing units that are either owner-occupied or rental-occupied. Historical housing unit demand—households and owner-occupied/rental-occupied/vacant units are reported by jurisdiction in decennial years by the U.S. Census Bureau and intercensal years by the American Community Survey (or "ACS"). As stated in the definitions described above, housing unit demand is generally synonymous with the number of households. Housing unit demand using variables such as households, owner-occupied units, rental-occupied units—for each peer community were forecasted from calendar year 2017 through calendar year 2027 for this study using an econometric statistical technique known as the "Ordinary Least Squares" (or "OLS")—based on historical population-demographic data obtained through the May-June 2018 forecast from Moody's Analytics.

Estimates of housing unit demand were forecasted by using historical trends by age group as set forth in the long-term population and demographic forecast since research is well established that households headed by residents of certain ages have housing preferences (e.g. owner or renter) and household formation rates that can be quantitatively estimated going forward based on the historical relationships of a locale's resident population and its age and household characteristics such as income level and number of dependents in their household unit. Long-term historical relationships between the past population and past demographic characteristics of the region's (and Town's) resident population and the actual or past housing unit inventory estimates for the region as a whole and for the Town and peer communities were estimated. The forecast of future housing unit demand for both owner housing units and renter housing units was then developed based on those quantified historical relationships and the population and demographic forecast for their respective jurisdictions.

Findings

The housing unit projections resulted in a lower rate of housing unit demand growth than was the case during 1990s through to the mid-2000s when the housing market peaked in the Town and for the greater region as a whole. The housing projections also included a shift slightly away from the housing market dynamics associated with the absolute declines in the population of the region and Town during the 2010-2016 period. The housing unit demand projections indicate there will be a slight increase in owner unit demand during the 2016 to 2022 time frame (but owner unit demand is expected to increase by less than one percent per year over the period), as the resident population ends its recent decline and begins a slow rebound. Unit demand for renter units is expected to experience a more substantial turnaround during the 2016 to 2022 period, but unit demand also is expected to increase at almost 1.4 percent per year. Both owner and renter unit demand will expand over the 2022 to 2027 period to increase at an average annual rate of more than one percent per year.

The housing unit demand projections indicate that the largest increase in housing unit demand in the county will be in the oldest age group, 65 years and over, which are expected to exhibit stronger than average rates of growth—reflecting the aging population. Demand for units in the youngest age group, aged 15 to 24 years, is expected to experience a housing unit demand decline over the forecast period as this population cohort struggles to cope with increasing costs relative to expected household income growth. Overall, demand in the Town is expected to increase by 1,323 year-round units by 2027 (or at an average annual rate of 120 year-round units per year). Demand for owner units is expected to increase by 883 units by 2027 (or at an annual rate of 80 units per year). Renter unit demand is expected to increase by 440 units (corresponding to an annual increase of 40 units per year). These estimates correspond to an overall annual housing unit growth rate of 0.54% per year.

Table C.1 Housing Supply and Demand in Queensbury[4]

				Change in Units/Households			Average Annual Growth		
Queensbury	2016	2022	2027	2016-2022	2022-2027	2016-2027	2016-2022	2022-2027	2016-2027
Total Housing Units	13,203	13,642	14,015	439	373	812	0.55%	0.54%	0.54%
Single-family	9,802	9,971	10,135	169	164	333	0.29%	0.33%	0.30%
Multi-family	2,881	3,103	3,307	222	204	426	1.24%	1.28%	1.26%
Other-mobile	520	568	573	48	5	53	1.48%	0.18%	0.89%
Tenure, owner	8,247	8,684	9,130	437	446	883	0.86%	1.01%	0.93%
Tenure, renter	2,956	3,212	3,396	256	184	440	1.39%	1.12%	1.27%
Households	11,203	11,896	12,526	693	630	1,323	1.01%	1.04%	1.02%

Source: U.S. Census Bureau; Moody's Analytics; EPR

[4] The reader will note a difference between the number of total housing units and the number of households. The difference between the two is the number of vacant units, including seasonal units, for-sale units, sold but not yet occupied units, etc.

Table C.2 Housing Supply and Demand in Glens Falls City

				Change in Units/Households			Average Annual Growth		
Glens Falls City	2016	2022	2027	2016-2022	2022-2027	2016-2027	2016-2022	2022-2027	2016-2027
Total Housing Units	7,230	7,426	7,529	196	103	299	0.45%	0.28%	0.37%
Single-family	3,613	3,795	3,866	182	71	253	0.82%	0.37%	0.62%
Multi-family	3,605	3,606	3,638	1	32	33	0.00%	0.18%	0.08%
Other-mobile	12	25	25	13	0	13	13.01%	0.00%	6.90%
Tenure, owner	3,201	3,337	3,424	136	87	223	0.70%	0.52%	0.61%
Tenure, renter	3,174	3,304	3,336	130	32	162	0.67%	0.19%	0.45%
Households	6,375	6,641	6,760	266	119	385	0.68%	0.36%	0.53%

Source: U.S. Census Bureau; Moody's Analytics; EPR

Table C.3 Housing Supply and Demand in Warren County

				Change in Units/Households			Average Annual Growth		
Warren County	2016	2022	2027	2016-2022	2022-2027	2016-2027	2016-2022	2022-2027	2016-2027
Total Housing Units	39,793	40,742	41,637	949	895	1,844	0.39%	0.44%	0.41%
Single-family	29,388	29,824	30,368	436	544	980	0.25%	0.36%	0.30%
Multi-family	8,399	8,856	9,204	457	348	805	0.89%	0.77%	0.84%
Other-mobile	2,006	2,063	2,065	57	2	59	0.47%	0.02%	0.26%
Tenure, owner	19,693	20,420	21,167	727	747	1,474	0.61%	0.72%	0.66%
Tenure, renter	8,180	8,699	9,051	519	352	871	1.03%	0.80%	0.92%
Households	27,873	29,119	30,218	1,246	1,099	2,345	0.73%	0.74%	0.74%

Source: U.S. Census Bureau; Moody's Analytics; EPR

Table C.4 Housing Supply and Demand in Kingsbury

				Change in Units/Households			Average Annual Growth		
Kingsbury	2016	2022	2027	2016-2022	2022-2027	2016-2027	2016-2022	2022-2027	2016-2027
Total Housing Units	5,604	5,830	5,990	226	160	386	0.66%	0.54%	0.61%
Single-family	3,541	3,702	3,810	161	108	269	0.74%	0.58%	0.67%
Multi-family	1,923	1,982	2,042	59	60	119	0.50%	0.60%	0.55%
Other-mobile	140	146	138	6	-8	-2	0.70%	-1.12%	-0.13%
Tenure, owner	2,850	2,985	3,126	135	141	276	0.78%	0.93%	0.85%
Tenure, renter	2,189	2,177	2,179	-12	2	-10	-0.09%	0.02%	-0.04%
Households	5,039	5,162	5,305	123	143	266	0.40%	0.55%	0.47%

Source: U.S. Census Bureau; Moody's Analytics; EPR

Table C.5 Housing Supply and Demand in Washington County

				Change in Units/Households			Average Annual Growth		
Washington County	2016	2022	2027	2016-2022	2022-2027	2016-2027	2016-2022	2022-2027	2016-2027
Total Housing Units	29,444	30,012	30,517	568	505	1,073	0.32%	0.33%	0.33%
Single-family	22,438	23,092	23,610	654	518	1,172	0.48%	0.44%	0.46%
Multi-family	5,069	5,196	5,289	127	93	220	0.41%	0.36%	0.39%
Other-mobile	1,937	1,724	1,618	-213	-106	-319	-1.92%	-1.26%	-1.62%
Tenure, owner	17,902	18,487	19,077	585	590	1,175	0.54%	0.63%	0.58%
Tenure, renter	6,863	6,830	7,027	-33	197	164	-0.08%	0.57%	0.21%
Households	24,765	25,317	26,104	552	787	1,339	0.37%	0.61%	0.48%

Source: U.S. Census Bureau; Moody's Analytics; EPR

Table C.6 Housing Supply and Demand in Glens Falls Metropolitan Statistical Area

				Change in Units/Households			Average Annual Growth		
Glens Falls MSA	2016	2022	2027	2016-2022	2022-2027	2016-2027	2016-2022	2022-2027	2016-2027
Total Housing Units	69,237	70,754	72,154	1,517	1,400	2,917	0.36%	0.39%	0.38%
Single-family	51,826	52,916	53,978	1,090	1,062	2,152	0.35%	0.40%	0.37%
Multi-family	13,468	14,052	14,493	584	441	1,025	0.71%	0.62%	0.67%
Other-mobile	3,943	3,787	3,683	-156	-104	-260	-0.67%	-0.56%	-0.62%
Tenure, owner	37,595	38,907	40,244	1,312	1,337	2,649	0.57%	0.68%	0.62%
Tenure, renter	15,043	15,529	16,078	486	549	1,035	0.53%	0.70%	0.61%
Households	52,638	54,436	56,322	1,798	1,886	3,684	0.56%	0.68%	0.62%

Source: U.S. Census Bureau; Moody's Analytics; EPR

APPENDIX D: ANALYSIS OF THE AFFORDABILITY GAP

Assessment of the Housing Wage for Queensbury

This analysis is provided to help connect the abstract concept of housing affordability to the region's labor market. In order to accomplish this, labor earnings in selected economic sectors (known as sectors as delineated in the North American Industry Classification System or "NAICS") in the Town were compared to the earnings necessary to affordably own a median-priced owner housing unit or to be able to affordably pay rent on a median-priced renter unit available in the local-regional housing market. This was accomplished using wage data from the American Community Survey ("ACS"). This data set allows comparison between median wages & salaries in a number of the economic sectors in the regional labor market and to the household income levels necessary to live in the locale without experiencing a more than 30% housing cost burden for the household. The data used in assessment includes the median wage & salary paid in each major economic sector for the town for calendar year 2016.

Relating Earnings to Housing Affordability:

Housing affordability, or evidence of housing cost stress, is typically measured by the proportion of income used to pay for the cost of housing in an area. If more than 30% of a household's income goes to renter housing costs (including rent and utilities) or owner housing costs (including mortgage payments, utilities, taxes, and insurance), then a household is determined to be "housing cost stressed" or "housing cost burdened" using widely accepted guidelines from the U.S. Department of Housing and Urban Development (referred to as HUD). For owners, the gap between income and home prices is typically measured by comparing household income needed to afford a median priced home without exceeding the 30% housing cost stress threshold. This study relates ACS wage estimates to typical owner housing costs (including mortgage payments) in the town. For renters, this analysis focuses on median wages-salaries paid to workers by major sector in comparison to the median renter housing costs for the town.

The housing wage concept is useful for assessing the potential for a single-earner household to be housing cost burdened. Because today's economy typically includes many households with more than one earner (e.g. households where both parents are working and therefore are participating in the regional labor force), a straight-forward housing wage comparison is in many ways a worst-case housing affordability scenario. This study uses earnings multiples for sector-by-sector comparison purposes for both one-wage-earner and two-wage-earner households.

Defining the Housing Wage:

The housing wage table used in the analysis for owners is the amount of household income per year required to afford a median priced house including the mortgage amount (assuming 5% down), property tax, private mortgage insurance, and housing insurance in the town divided by 2,080 work hours per year (40-hour work week times 52 weeks per year).

For renters, the housing wage is the amount of household income per year required to afford a median gross rent priced apartment in the town. Workers earning above the housing wage are considered able to

affordably rent. While income includes payments from sources other than wages such as capital gains and dividends from equities and other securities, the households of interest in this study (those at 120% or less of median income) receive most of their income from wages.

Queensbury Housing Wage Analysis

Queensbury Median Renter Housing Wage

Table D.1 and D.2 indicate that workers at four of the top nine sectors in the town earn median wages which would leave a single earner household potentially house cost burdened. It should be emphasized that these are median tables; 50% of workers in the sectors where the median is only barely above the housing wage likely earn wages at or below the housing wage. The gap between wages in the healthcare and social assistance, administration & waste services, retail trade, and accommodation & food services sectors suggests single-earner households in these industries would likely be house cost burdened. Additionally, it is possible that wages from tipping in the accommodation sector are under reported, exaggerating the magnitude of the gap.

Table D.1 Median Wages by Sector and Renter Housing Wage

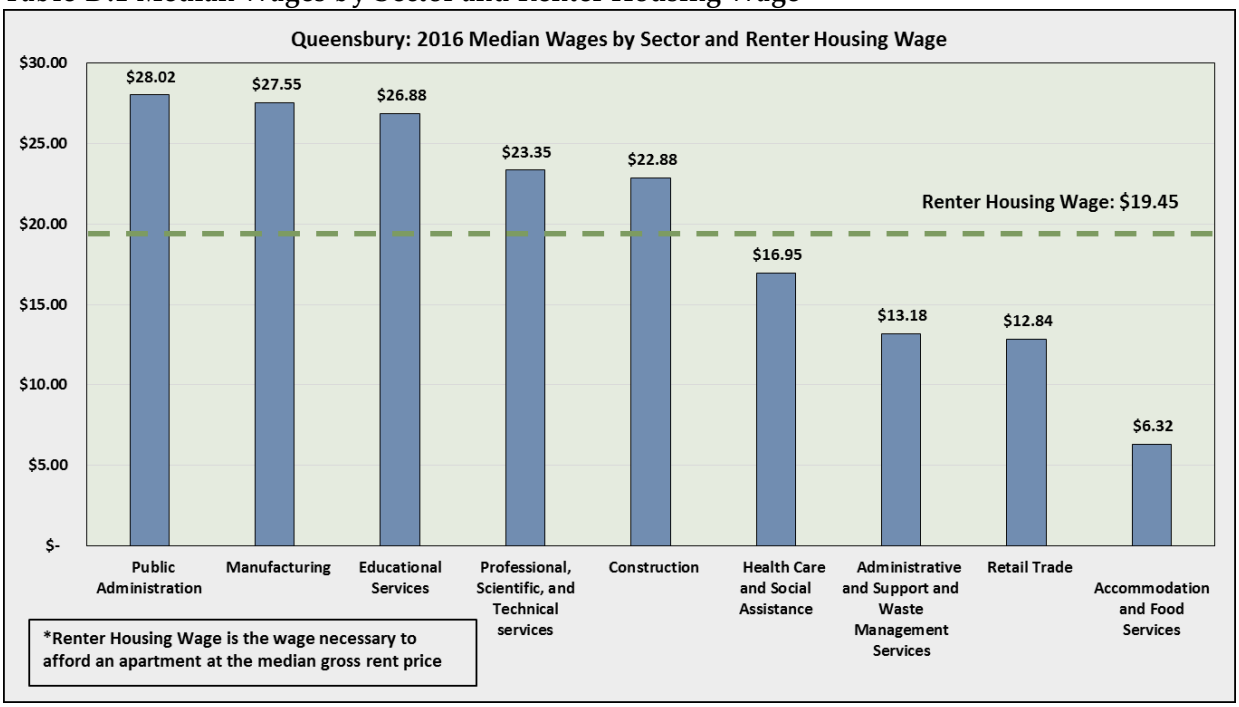
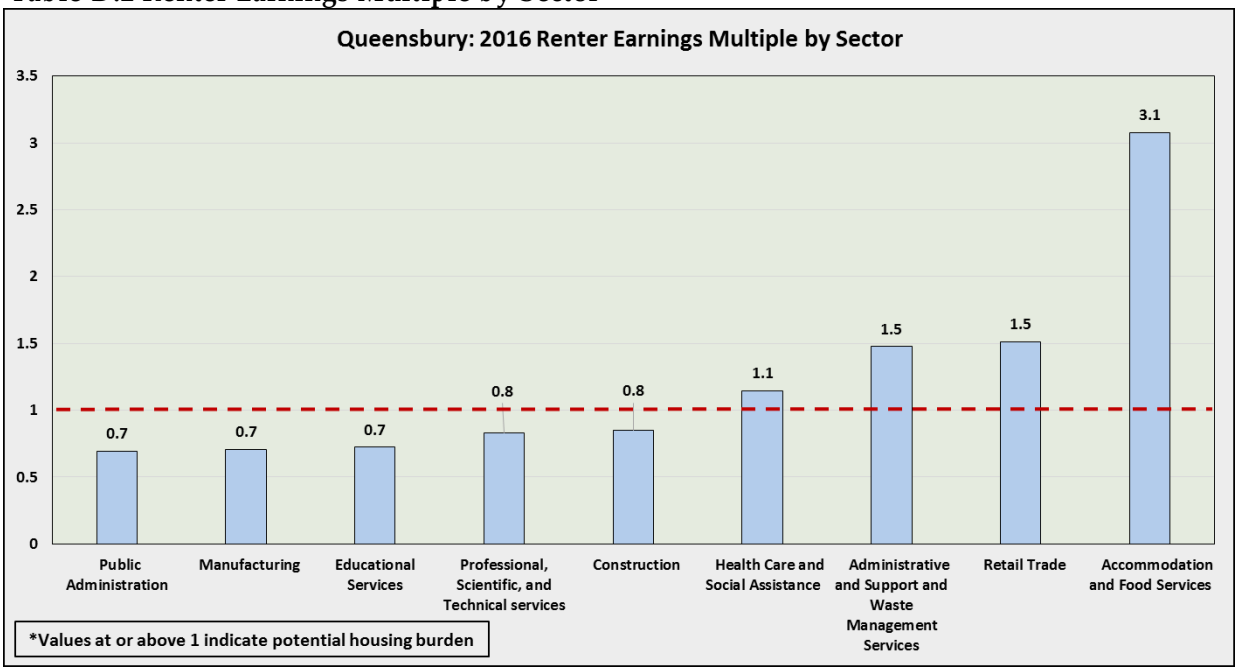


Table D.2 Renter Earnings Multiple by Sector

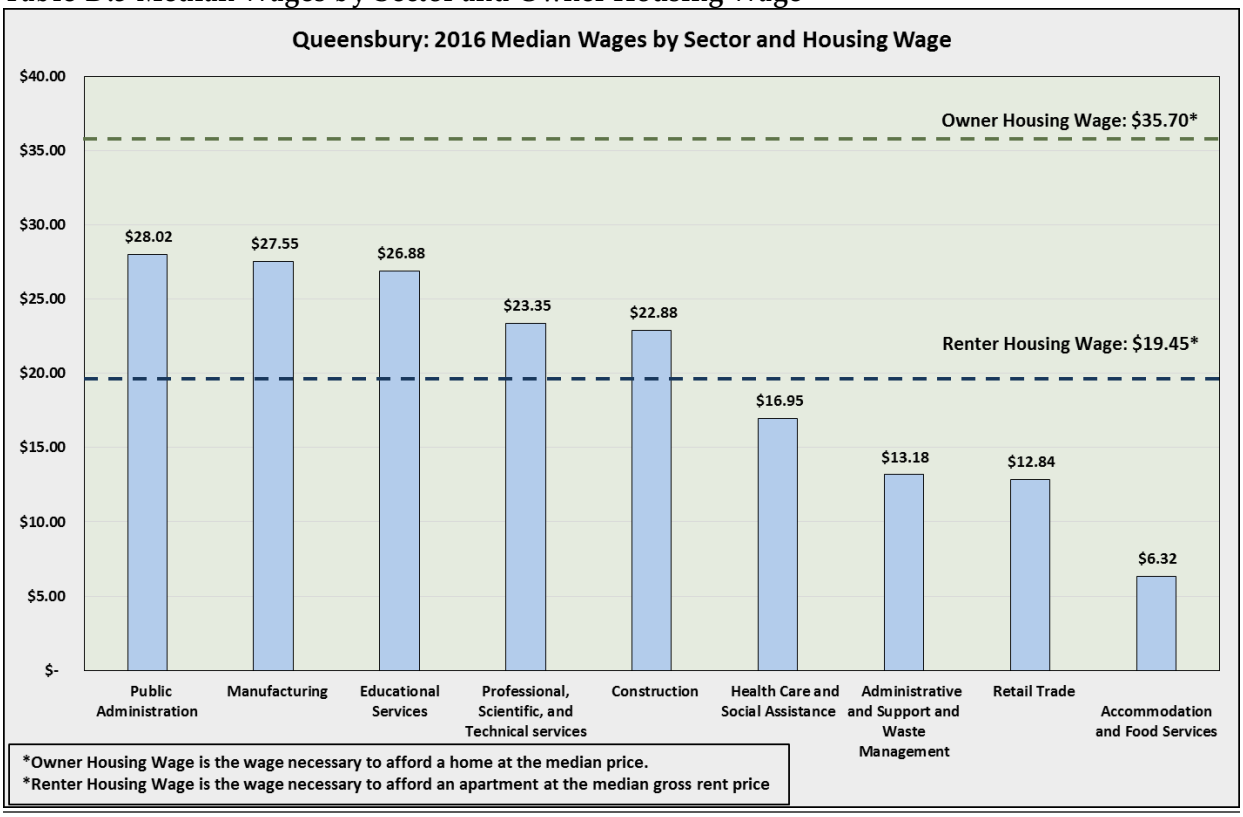


When the data are analyzed from the earnings multiple perspective, it is clear that in calendar year 2016 the median worker in the highest-paying major employment sectors in the town (such as Professional and Technical Services, Construction, Public Administration, Manufacturing, and Educational Services) appeared likely able to affordably rent a housing unit without being housing cost stressed in calendar year 2016. However, with earnings multiples at 0.7 to 0.8 all of those industries likely have many workers who earn less than the median wage who are unable to affordably rent. Those in the lower-paying employment sectors would require two or more household members with median earnings in those sectors to exceed the minimum housing wage affordability threshold—and therefore have sufficient household income to be able to afford the housing costs of such units without experiencing housing cost stress.

Queensbury Median Owner Housing Wage

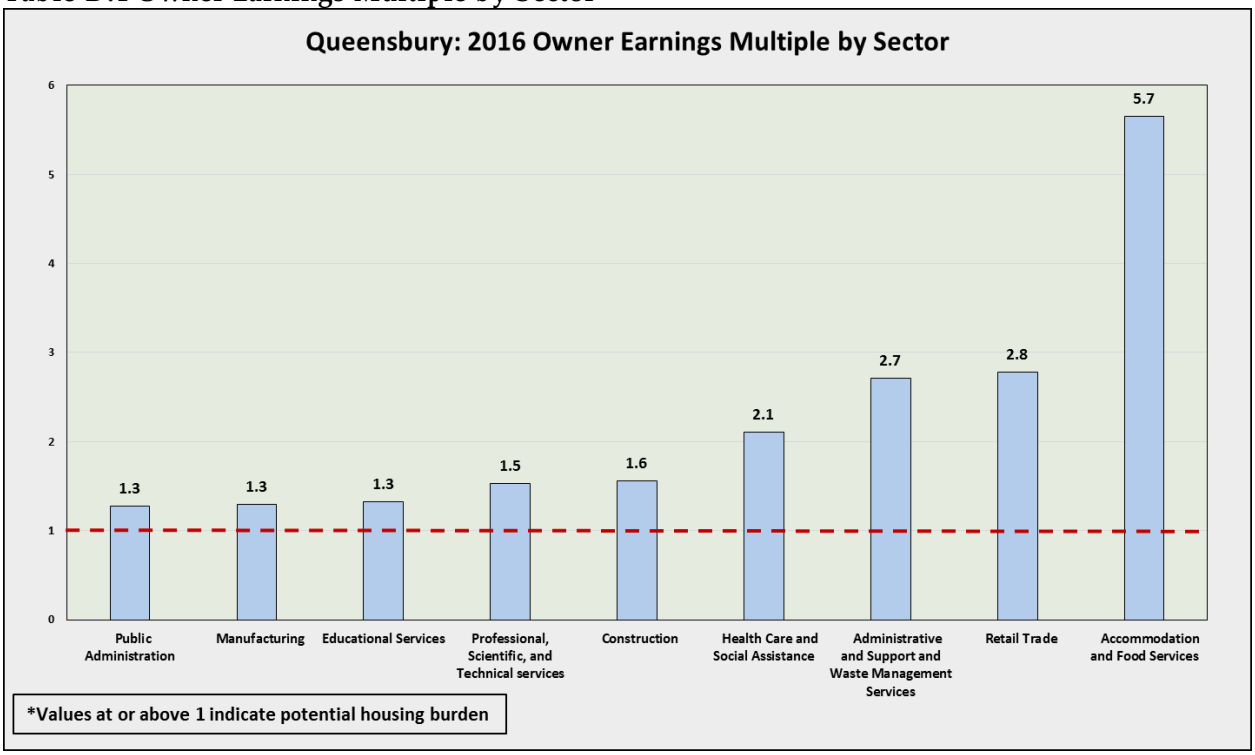
The gap between the owner housing wage and median wage level for many sectors in the town indicates that owning a home in calendar year 2016 in many cases is beyond the means of the single earner, and indeed for many households with two wage earners. Median wages in all of the top nine NAICS sectors is insufficient to meet the requirements of the owner housing wage; and it appears that only the highest paid employees within the town's major employment categories would be able to afford to own a house in calendar year 2016. The renter housing wage is also shown on this chart for comparison purposes. It's apparent from the differential between owner's and renter's housing wage levels that it requires a much higher income to own affordably than to rent affordably in the town.

Table D.3 Median Wages by Sector and Owner Housing Wage



The multiple-earner analysis suggests that median wages in the lowest-paying sectors also fail to provide adequate income for even a two-earner household to afford the housing cost burdens of a median-priced house. With an earnings multiple of 5.7, wages from Accommodation and Food Services would require more than five full-time workers per household to be able to afford to live in a median priced house "stress free." The analysis also indicates that median wages in the town are not high enough to provide single-earner households even in the highest-paying industries with the household income necessary to be able to afford the housing costs of owning a housing unit without experiencing housing cost stress at the 30% level of household income. In fact, in the highest-paying sector (Public Administration), with an earnings multiple of 1.3, a single-earner household would have to earn approximately 30% more than the median to afford a median-priced home.

Table D.4 Owner Earnings Multiple by Sector



Overview of Methods: Owner and Renter Affordability Calculations

This section describes the methods used to calculate the affordable house price and affordable gross rent level for the town.

To reiterate, the affordability calculations used in this study conforms to the generally accepted approach employed by HUD to identify housing cost stress in a housing market. According to HUD, a household that is not "housing cost stressed," is one that expends less than 30% of its household income on housing costs. If a household spends more than 30% of its income on housing costs, the household is considered housing-cost stressed. This study's approach builds on the HUD standard to determine: (1) "how much house" a household can be affordably purchased from net household income after paying the costs of utilities and home owner's insurance, property taxes, and debt service costs on a conventional 30 year-5% down payment mortgage for an owner unit in the town, and (2) "how much house" can be affordably rented from net household income after paying the costs of utilities associated with a rental housing unit in the town. A general description of the method is presented first, followed by additional details for each step in the affordability calculations process by tenure.

The starting point for the analysis was the estimate of 2016 median household income for the county and municipality in the study region. The estimates of 2016 household (HH) income were then segmented into four different groupings consistent with the traditional HUD approach as follows:

- <50% of HH median income
- >50% but <80% of HH median income
- >80% but <100% of HH median income
- >100% but <120% of HH median income

Calculations were made for each of the income groups described above based on the following general assumptions: (1) per the HUD definition, households would spend up to 30% of their household income on housing as "affordable payments" before feeling housing cost stress; (2) the analysis would use the mortgage interest rate of 3.65% for 2016—consistent with the prevailing 30-year, 5% down payment mortgage rates that were available in the U.S. in calendar year 2016 according to Freddie Mac's Primary Mortgage Market Survey, and (3) that households that own their house would insure their homes at market rates and would be required by their lender to purchase market rate private mortgage insurance.

Overview of Owner Unit Affordability Calculations: The housing affordability calculations for owners within the town employed a statistical formula which results in the "affordable" owner housing unit price point at which a typical town resident household can afford the typical monthly expenses of homeownership. The affordability calculation represents a snap shot or a "housing cost stress test," which compares the typical housing costs paid by a typical owner household to the price points that were present as of the year of the affordability analysis. The affordability snap shot does not offer any judgement on the affordability status or housing cost stress level of that household for that unit, or for a unit with the same price point going forward. The affordability analysis does carry the affordability/housing costs calculation forward to calendar year 2027 as part of the study's dynamic gap analysis to provide housing stakeholders with the direction and the likely magnitude of affordability pressures in the Town going forward.

For owners, the following diagram sets forth the step-by-step calculations used for each household income category for the town:

Table D.5 Owner Affordability Calculation Guide

Calculation	Step
	1. Annual HH Median Income for the household income category
$\div 12$	2. Equals monthly income
$\times 30\%$	3. Affordable monthly housing costs amount
Subtract property tax Subtract insurance Subtract private mortgage insurance	4. Equals: The amount available for affordable monthly mortgage payments
Reverse calculate the affordable mortgage payment (Based on a 30-year fixed rate mortgage at 3.65% interest rate with a 5% down payment)	5. Equals: Affordable home price for the household income category at the level not to exceed 30% of household income to be devoted to housing costs

The table below contains an example of the final owner affordability analysis for the town for calendar year 2016. All of the elements are laid out in this table. Included at the bottom of the table are estimates showing the number of housing units available at the calculated affordable price point for a given income category at or below the 30% of the estimated housing cost threshold. The market supply price points use two concepts: (1) the affordability profile of single-family housing unit sales for calendar year 2016 from the town assessor sales data, and (2) an estimate of the single-family housing units by assessed value.

The number of units by assessed value in the municipal grand list is another way to view affordable housing supply. The table below sets forth an overview of these calculations as an example for the town.

Table D.6 Queensbury Owner Affordability Study Findings

Owners					
2016 Affordable House Price: Town of Queensbury, NY					
	Median Household Income:				
@ Percent of Median Household Income	$76,714	@50%	@80%	@100%	@120%
Annual Household Income		$38,357	$61,371	$76,714	$92,057
Monthly Household Income		$3,196	$5,114	$6,393	$7,671
% of Income for Housing		30%	30%	30%	30%
Affordable Housing Expenses Per Month (@30% of Monthly Household Income)		$959	$1,534	$1,918	$2,301
Property Tax & Insurance Payments Per Month		$337	$520	$642	$764
Insurance	$108.23	$108	$108	$108	$108
Private Mortgage Insurance (1% of Loan Amount)	0.06%	$62	$112	$146	$179
Town, County, and School District Property Taxes (per $1,000)	$1.54	$166	$299	$388	$477
Utilities		$152	$171	$180	$191
Affordable Mortgage Payment (@3.65%)		$470	$844	$1,096	$1,346
Affordable Mortgage Amount (95% of Price, Assuming 5% Down)		$102,652	$184,542	$239,519	$294,258
Affordable House Price		**$108,055**	**$194,255**	**$252,125**	**$309,745**
Median House Price (2016)		$230,000	$230,000	$230,000	$230,000
Affordable Price-Difference from Median		**($121,945)**	**($35,745)**	**$22,125**	**$79,745**
Affordable Single-Family Year-Round Residential, FY 2017 Assessed Values	**Total**	**674**	**4,035**	**6,241**	**7,511**
% of Total Parcels	**9,146**	7.4%	44.1%	68.2%	82.1%

Property Tax Calculations:

The 2016 and forecast Property Tax rates for the Town of Queensbury were calculated using a combination of County, Municipality, and School District taxes levied in the town. The New York Department of Taxation and Finance provides a dataset of both the total taxes levied as well as the property tax rate (per $1,000) for each municipality.

Table D.7 Taxes Levied on Queensbury Households, by School Code

Fiscal Year Ending	Municipality	County	School Code	School Name	Type of Value on which Tax Rates are applied	County Tax	Municipality Tax	School District Tax	County Tax Rate (per $1000 value)	Municipal Tax Rate (per $1000 value)	School District Tax Rate (per $1000 value)
2016	Queensbury	Warren	520500	Glens Falls	Full Value	$14,034,896	$ 7,367,353	$ 5,717,673	3.85	2.08	17.66
2016	Queensbury	Warren	522201	Lake George	Full Value	$14,034,896	$ 7,367,353	$ 8,511,419	3.85	2.08	6.79
2016	Queensbury	Warren	523402	Queensbury	Full Value	$14,034,896	$ 7,367,353	$ 31,343,405	3.85	2.08	15.24
2016	Queensbury	Warren	534401	Hudson Falls	Full Value	$14,034,896	$ 7,367,353	$ 105,430	3.85	2.08	13.61

Source: New York State Department of Taxation and Finance, Office of Tax Policy Analysis *Prepared by: Economic & Policy Resources, Inc.*

The use of an effective tax rate is important because it evens-out the unique mixture of overlapping local taxes. Rather than calculated the tax rate of a particularly property which may be located within one of several light, water, sewer, and school districts, the 'average' or *effective* tax rate for the whole of the town is calculated. An effective tax rate for the town was determined by summing the total school district taxes levied, dividing by the sum of the school districts' tax base, and multiplied by $1,000 to arrive at an effective school district tax rate per $1,000 of home value and then adding the result to the County and Municipal tax rate. The result is an effective tax rate of $18.47 per $1,000 of value.

Table D.8 Effective Tax Rate on Queensbury Households

	County Tax Rate (per $1,000 value)	Municipal Tax Rate (per $1,000 value)	School District Tax Rate (per $1,000 value)	Effective Tax Rate (per $1,000 value)
	[A	+ B	+ C]	=D
Queensbury	**3.85**	**2.08**	**12.54**	**18.47**

Prepared by: Economic & Policy Resources, Inc.

Private Mortgage Insurance (PMI) Rate and Down Payment Percentage: The owner affordability calculations in this study assumed a 5% down payment, which typically would require that the owner pay the cost of private mortgage insurance (PMI). As a typical cost of house ownership for the prototypical housing transaction assumed in the housing cost affordability analysis, premiums for PMI were included in this analysis.

PMI is insurance that protects the lender against default and is usually required when the loan value is 80% or more of the house value (i.e. the down payment is less than 20%—although there are some exceptions). Borrowers continue to pay PMI premiums until the loan value is less than 80% of the value of the house or to the value in which the lender allows the owner to stop insuring the outstanding loan value if that percentage is greater than 80%. Lenders typically use third-party insurance companies to insure their loans, so rates and approval can vary across companies and depend on many factors such as the value of the loan, the value of the house, type of loan, the borrower's credit history, and type of property being purchased. While PMI makes it possible to buy a home with less of a down payment, it also represents an additional cost to borrowers even though it is insurance that protects the lender's financial exposure.

For the purpose of this study, the PMI rate for calendar year 2016 was published by the Urban Institute and utilizes the average credit score for New York of 735 from United States Mortgage Insurers (USMI) with a 5% down payment. Using these parameters the appropriate PMI amount per year was determined to be .73% of the loan amount, or .06% per month.

Following the "Great Recession" all mortgage insurance issuers revised their rates as the "riskiness" of certain classifications of homebuyers were re-assessed.[1] Even after this rate underwent significant re-assessment, the resulting impacts for the typical homebuyer's monthly housing expenses were marginal. Therefore, even if another event like the recent housing decline of the late-2000s crash were to occur again within the ten-year forecast time frame (which is not anticipated), the estimated .73% loan amount will likely remain a reasonable assumption for the forward-looking 2027 affordability analysis and was therefore unchanged for the forecast years included in the analysis horizon.

Owner Utility Expenditures: Owner expenditures for utilities costs were calculated based on the Consumer Expenditure Survey ("CES") for the Northeast region by income before taxes, including water/sewer, electricity, heat, and excluding telephone. The CES reflected consumer expenditure data collected from households during calendar year 2015-16 period. Because the base year of the housing affordability analysis was calendar year 2016, these data were used without adjustment for inflation.

[1] See Urban Institute. https://www.urban.org/urban-wire/private-mortgage-insurance-price-reduction-will-pull-high-quality-borrowers-fha

Utility costs for the town were calculated for each household income level (e.g. 50%, 80%, 100%, and 120%), based on the utilities expenditures for each income level provided in the CES consumer expenditure dataset.

Finally, the utilities expenditure Consumer Price Index ("CPI") concept was used to convert CES dollar values to 2027 from the 2015-16 CES data. The 2027 utilities cost estimate was derived by applying the forecasted rate of change to those utilities expenditure amounts using the CPI Urban Wage Earner-Energy, (Index 1982-84=100, SA) that was forecasted using the historical rate of change from 2000 to the second quarter of 2018. The specific rate of change and resulting utilities cost estimate for owners is set forth in the table below.

Table D.9 Current and Forecasted Utility Costs by Region

	2016	2022	2027
CPI Fuels and Utilities (Index 1982-1984=100), NSA	228.9	277.5	328.4
Median Household Monthly Utility Costs			
Queensbury	$180.08	$218.33	$258.40
Glens Falls City	$173.03	$209.78	$248.28
Kingsbury	$174.02	$210.98	$249.70
Warren County (Average)	$174.04	$211.00	$249.73

Prepared by Economic & Policy Resources, Inc.

Mortgage Rate Methodology

Once the affordable mortgage payment amount that could be paid by a household in each particular income category was determined, a calculation was made to estimate the total value of a mortgage loan that could be serviced. That total amount of mortgage loan value corresponds to the size of an affordable mortgage for the subject household. This was done using the following formula that yields the value of a loan assuming a fixed monthly payment, a fixed interest rate, and a 30 year loan term. The formula was employed as follows:

$$LoanValue = Payment \times \sum_{t=1}^{n} \frac{1}{(1+r)^t}$$

Where Loan Value is the size of the mortgage loan that can be serviced without causing housing cost stress; "n" is the number of payments (years times 12 months); "r" is the fixed monthly interest rate; and "t" is each monthly period up to "n." Once the affordable mortgage value was determined, this amount was adjusted up by 5% (e.g. the number was divided by .95) with the assumption that the household would be required to make at least a 5% down payment for the housing unit—the minimum for a conventional mortgage in the un-subsidized housing market. The result of that calculation then yields the estimated affordable house price for that household income category.

This calculation was required because there is no publicly available database which provides actual average mortgage rates specific to either the county or for smaller geographies. Similarly, no geographically-detailed forecast of future mortgage rates exists for the period out ten years into the future. However a data-driven estimate can be constructed using available information from multiple credible sources. The

2016 and forecasted mortgage rates used for the town were calculated from the actual calendar year 2016 annual average 30-year fixed mortgage rate provided by Freddie Mac. The table below shows the 2016 mortgage rate used in the study as supplied by the Freddie Mac's Primary Mortgage Market Survey data within the Moody's May-June 2018 Macro Forecast for the Federal Housing Finance Agency (or FHA) 30-Year Fixed Mortgage Rate from calendar year 2016 through calendar year 2027.

Table D.10 Current and Forecasted Mortgage Rates

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Freddie Mac: 30-Year Fixed Rate - National, (%, NSA)	**3.65**	3.99	4.67	5.30	5.24	5.36	**5.58**	5.56	5.58	5.69	5.86	**5.91**

Source: Moody's Analytics *Prepared by Economic & Policy Resources, Inc.*

Median Transactions Price

Data which contains the year, town location, classification, and sale price for all residential real estate transactions within Queensbury was gathered from The Town of Queensbury Assessor's Office. All residential real estate transactions which took place from July 2015 to April 2018 are contained within the data set. Since 2016 is the base year for this study, transaction price points were taken forward to 2027 using the Moody's Glens Falls MSA forecast, as set forth in the Moody's May-June 2018 Macro Forecast for the FHFA All Transactions Home Price Index for the metro area.

Table D.11 Median Transactions Home Price by Region

Median Transaction Price by Town (Indexed to 2016)	2016	2022	2027
Queensbury	-	117.5	143.1
Glens Falls City	-	120.5	150.6
Kingsbury	-	120.0	149.3
Warren County Average	-	121.5	152.9
Median Transaction Price by Town			
Queensbury	$230,000	$270,222	$317,479
Glens Falls City	$150,000	$180,816	$217,963
Kingsbury	$140,500	$168,630	$202,391
Warren County Average	$215,000	$261,168	$317,249

Prepared by: Economic & Policy Resources, Inc.

Overview of Renter Affordability Calculations: In addition to the above-described owner housing price affordability calculations, a separate set of affordability calculations was completed using the same general approach for renter housing units. This renter affordability analysis was undertaken in order to determine the distribution of affordable rents for the town. The estimated household income level in calendar year 2016, like the owner unit calculations, was the starting point for this analysis. Household income was divided by 12 to yield monthly income, and then multiplied by 30% in order to establish the rent-utilities cost (i.e. Gross Rent) maximum amount per HUD housing cost stress indicator guidelines described above. The rental affordability calculations for the town were based on: (1) household income data which was taken from the 2012-2016 Five-Year American Community Survey ("ACS") Financial Characteristics dataset, (2) Gross Rents Paid data from the Five-Year ACS dataset for households occupying renter units, and (3) utilities expenditures paid by household units derived from data from the Consumer Expenditure Survey ("CES") published by the U.S. Department of Labor for households in the northeastern region of the United States. Estimated rents and expenditures for utilities for renter households were then calculated specifically for the town. Data for the town was then analyzed to determine the number of households in

each income category that were estimated to be experiencing housing cost stress—defined as households that were estimated to be paying more than 30% of their household income for housing costs in their renter unit.

The following diagram describes the step by step affordability/housing cost stress calculations made for renter households:

Table D.12 Renter Affordability Calculation Guide

Calculation	Step
	1. Annual HH Median Income for the household income category
$\div 12$	2. Equals monthly income
$\times 30\%$	3. Equals a total affordable renter housing payment
Add utility costs	4. Equals the amount available for an affordable cash rent payment per month.

More specifically, the median renter-occupied household income data for the town was sourced from the ACS Five-Year data and used as a starting point for this analysis. The median renter-occupied household incomes for the town were then broken down into 50%, 80%, 100%, and 120% of the median household income level categories. Monthly household income was determined by the ACS-reported annual household income total divided by twelve (corresponding to twelve months per year). The "affordable gross rent[2]" was then calculated by taking 30% of monthly household income at each household income level to determine the affordable housing cost for each level (See the sample table below corresponding to the affordable gross rents for Queensbury).

Utility costs for renter units were calculated based on the Consumer Expenditure Survey ("CES") for the Northeast region by income before taxes for the years 2015-2016, including water/sewer, electricity, heat, and excluding telephone costs. The CES is conducted twice every year. Utility costs for the town are calculated for each household income level (50%, 80%, 100%, and 120%) for renters, based on the utilities expenditures for each income level provided in the CES data for the likely households to occupy renter units.

Using the CES data for 2015, the table below sets forth monthly utilities costs for each median renter-occupied household income level.

[2] Gross rent for this affordability analysis is defined as payment of rent plus estimated utilities expense—not including telephone and/or internet expenditures for the household.

Table D.13 Queensbury Renter Utilities Payments by Household Income Category

Queensbury, NY	$38,095	Utilities Calculation			
100% of Median HH Income		# Consumer Units	Per Year [1]		
	<$5k	1,081	$	1,301	1,406,381
	$5k-$9,999	775	$	1,208	936,200
	$10k-$14,999	1,423	$	1,401	1,993,623
	$15k-$19,999	1,405	$	1,874	2,632,970
	$20k-$29,999	2,407	$	2,133	5,134,131
	$30k-$39,999	1,687	$	2,320	3,913,835
	Sum	8,778			16,017,140
	Per Year				$1,824.69
	Per Month				**$152.06**
	Notes:				
	[1] Less Telephone				
					Prepared by Economic & Policy Resources, Inc.

The affordability gap for renters for each household income level for the town was then calculated based on the difference between the affordable gross rent and the monthly gross rent. The exhibit below presents this data for Queensbury.

Table D.14 Queensbury Renter Affordability Study Findings and Gap Analysis

Renters					
2016 Affordable Rent: Queensbury, NY					
	Median Household Income:				
@ Percent of Median Household Income	$38,095	@50%	@80%	@100%	@120%
Annual Household Income		$19,048	$30,476	$38,095	$45,714
Monthly Household Income		$1,587	$2,540	$3,175	$3,810
% of Income for Housing		30%	30%	30%	30%
Monthly Utilities		$122	$143	$152	$160
Affordable Asked Rent		$354	$619	$800	$983
Affordable Gross Rent		**$476**	**$762**	**$952**	**$1,143**
Monthly Gross Rent (Includes Utilities)		$1,011	$1,011	$1,011	$1,011
Affordability Gap		**($535)**	**($249)**	**($59)**	**$132**

The number and type (zero, one, two, or three-plus bedroom) of rental unit for the Town is also considered. These totals were calculated based on the Bedrooms by Gross Rent 2012-2016 ACS Five-Year Estimates data sets, adjusted to match the Census total housing units for the town.

The number and type of units in the rental market at each affordable gross rental rate was then obtained from the historical 2016 data. For example, at 100% of median renter-occupied household income for the town, there were an estimated 1,217 renter units at or below the affordable gross rental rate of $952 based on the ACS 2012-2016 estimates. Among those units, there were an estimated 54 no-bedroom units, 488 one-bedroom units, 595 two-bedroom units, and 81 three-plus-bedroom units in 2016.

Table D.15 Renter Affordability by Bedroom (ACS)

Queensbury	**50%**	**80%**	**100%**	**120%**	
Median HH Income	$19,048	$30,476	$38,095	$45,714	
Affordable Gross Rent	$476	$762	$952	$1,143	
Available Units at Affordable Gross Rent (%)					**Total Number of Rental Units***
No bedroom:	-	4%	62%	76%	87
1 bedroom:	24%	43%	72%	84%	676
2 bedrooms:	6%	12%	45%	66%	1,321
3 or more bedrooms:	1%	3%	9%	28%	798
Total Units at or Below	**9%**	**17%**	**42%**	**61%**	**2,881**

*Excluding units with no cash rent

In order to understand the gap analysis tables, a few terms, concepts, and assumptions need to be explained. First, prior to calculating housing supply and demand, it was assumed that a household was able to spend up to 30% of its household income on housing, before the household would become "housing cost-stressed" according to HUD guidelines. Supply at a particular income level is the number of units (either owner or renter) that are affordable at that price point, if all units within that geographic area were to be available for sale or rent. Demand at a particular income level is the number of households at or below that level of income which currently own or rent. This supply and demand results in a unit gap at each income level, which is the difference between the number of units available, (supply) and the number of households that could afford them (demand). This theoretical gap initially assumes that households would not occupy units within other income levels. This means that if a household was occupying a unit at either more or less than 30% of their income they do not appear in the demand for the income category that their housing unit falls into, only the income category the household is in. This assumption was necessary to do meaningful and orderly analysis of the data. The data has shown that Queensbury is relatively affordable at nearly all levels of income for owners. The only owner households that appear to be housing cost burdened are those that make 50% or less than median household income. Finding an affordable rental unit is shown to be much more difficult for the renters of Queensbury. There are a number of renter households at or below 50% of median income competing for the units that would be affordable for households above 50% to 100% income levels, because there are not enough units within their affordable range. This creates a cumulative gap for those income levels until the affordable supply finally meets demand in the 100% to 120% income bracket.

Estimated unit demand was the number of units demanded by households that make between one income category and the next. For example, in Queensbury, the 1,592 units demanded at 80% of median income was the number of households between 50% and 80% that own. Estimated unit supply is the number of units available at the affordable price for each income level. So for 80% of median income the affordable price was $189,321, there was a supply of 2,393 units above $99,679 and below the 80% affordable price of $189,321. The affordability gap is the number of units demanded minus the number of units available at each income category. All of the measures in the top part of the chart are for the indicated income level

only. They do not include any values to the left or right. For example, the 2,393 units supplied at 80% of median income does not include the 865 units supplied at 50% of median income.

Cumulative demand is the estimated unit demand at that income level plus the estimated unit demand for each lower income level. Therefore, the cumulative demand for 80% of median income was 3,042, or 1,592 (the estimated demand at 80%) plus 1,450 (the estimated demand at 50%). Cumulative Supply is the estimated unit supply for each income level, plus all of the unit supply for each lower income level. At 80% of median income, there was a cumulative supply of 3,258 units at affordable prices, or 2,393 (the estimated unit supply at 80%) plus 865 (the estimated supply at 50%). The cumulative gap is calculated by subtracting cumulative supply from cumulative demand. As a result, the cumulative gap at the 50% to 80% of median household income level is shown to be -216, or 3,042 (cumulative demand) minus 3,258 (cumulative supply). Alternatively, it can be calculated by summing the affordability gap at a particular income level and the gap from each lower income level. So the cumulative gap at 80% was -216, or -801 (affordability gap at 80%) plus 585 (affordability gap at 50%).

It's important to note that cumulative numbers are generally a better measure of the real state of the market as someone who is making 100% of median income would be able to purchase a house that is affordable to someone at 80% or even 50% of median income if the opportunity arose. Also, if there are not enough units available at an affordable price, those households will still need to live somewhere and so will likely purchase a unit at a price outside of their affordable range. This means that even though there was a theoretical oversupply of units at 100% and 120% of median income, the full picture of the market was shown more clearly by the cumulative gap values which show those "surplus" units likely being purchased by people in the lower income categories because they have few other options. This leaves a still substantial cumulative gap at high income levels. The columns in red indicate the first income category that has a theoretical cumulative oversupply, indicated by the negative cumulative gap value.

Table D.16 2016 Town of Queensbury Affordability Gap Analysis

Town of Queensbury-Estimated Affordable Gap for Owner Units, 2016					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$38,357	$61,371	$76,714	$92,057	
Affordable Price [Excludes Transportation Costs]	$99,679	$189,321	$243,646	$297,735	
Estimated Unit Demand	1,450	1,592	1,092	850	3,403
Estimated Unit Supply	865	2,393	1,620	1,440	2,069
Affordability Gap in Units (Demand minus Supply)	585	-801	-528	-590	
Cumulative Demand	**1,450**	**3,042**	**4,134**	**4,984**	**8,387**
Cumulative Supply	**865**	**3,258**	**4,878**	**6,318**	**8,387**
Cumulative Gap	**585**	**-216**	**-744**	**-1,334**	
Town of Queensbury-Estimated Affordable Gap for Renter Units, 2016					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$19,048	$30,476	$38,095	$45,714	
Affordable Rent [Excludes Transportation Costs]	$476	$762	$952	$1,143	
Estimated Unit Demand	804	190	494	284	1,212
Estimated Unit Supply	265	206	763	653	1,099
Affordability Gap in Units (Demand minus Supply)	539	-15	-268	-368	
Cumulative Demand	**804**	**995**	**1,489**	**1,773**	**2,985**
Cumulative Supply	**265**	**471**	**1,234**	**1,886**	**2,985**
Cumulative Gap	**539**	**524**	**256**	**-113**	
Source: U.S. Census Bureau, American Community Survey				Prepared by Economic & Policy Resources	

Affordability Forecast:

Median Residential Sales Price/Home Value

All forecasts for prices of 'owned' single family residences are based on a univariate regression model, with the actual price data series set as the dependent variable and the Federal Housing Finance Agency (FHFA) House Price Index for Glens Falls MSA geographic area set as the independent variable. This mathematical model measures the historical relationship between the FHFA price index data and the historical home price data, developing a line-of-best-fit regression equation based on this historical relationship. Since forecasted FHFA value for the Glens Falls MSA area is available from the Moody's forecasted data, forecasted values for the independent variable were input into the model/equation, resulting in the forecasted value for the dependent variable, house price, for each year of the forecasted timeline between 2017 and 2027. Typically the further back historical data goes into the past, the more accurate a regression model will be. However, the availability of data specific to some of the peer communities and geographies is limited. The American Communities Survey, for instance, provides a geographically precise public source of home price data that is self-reported by homeowners, but complete data is only available for the 2009 through 2016 time period, which does not allow for a reliably predictive forecast model.

Utilities

Utilities expenditure CPI was used to convert CES dollar values to 2027 from the 2015-16 CES data. The 2027 estimated utilities cost was derived by applying the forecasted rate of change to those utilities expenditure amounts using the CPI Urban Wage Earner-Energy, (Index 1982-84=100, SA) that was developed using the historical rate of change from 2000 to the second quarter of 2018. The specific rate of change and resulting utilities cost estimate for owners is set forth in the table below.

TABLE D.17 CURRENT AND FORECASTED UTILITY COSTS BY REGION

	2016	2022	2027
CPI Fuels and Utilities (Index 1982-1984=100), NSA	228.9	277.5	328.4
Median Household Monthly Utility Costs			
Queensbury	$180.08	$218.33	$258.40
Glens Falls City	$173.03	$209.78	$248.28
Kingsbury	$174.02	$210.98	$249.70
Warren County (Average)	$174.04	$211.00	$249.73

Prepared by Economic & Policy Resources, Inc.

Property Tax

The 2016 property tax rates were escalated to 2027 values using the ratio between Moody's May-June 2018 Forecast for National Income and Product Accounts Index for Non-Defense Government Consumption Expenditures and Gross Investments and the forecast of home value in the town (to represent the tax base). The tables detailing the tax rates "per $1,000 of house value" are found in the table below.

Table D.18 Current and Forecasted Property Tax Rates

	2016	2022	2027
Queensbury Property Tax Growth Rate (Indexed to 2016)	-	120.6	118.7
Glens Falls City Property Tax Growth Rate (Indexed to 2016)	-	117.6	112.8
Kingsbury Property Tax Growth Rate (Indexed to 2016)	-	118.1	113.7
Warren County Property Tax Growth Rate (Indexed to 2016)	-	116.7	111.1
Queensbury	**$18.47**	**$22.28**	**$21.93**
Glens Falls City	**$30.30**	**$35.62**	**$34.17**
Kingsbury	**$22.77**	**$26.88**	**$25.90**
Warren County Average	**$16.49**	**$19.23**	**$18.31**

Prepared by: Economic & Policy Resources, Inc.

Homeowner Insurance Calculation and Escalation Methodology

The 2016 and forecasted homeowner insurance rates for the town was calculated using the average premium of HO-3 policies in the State of New York from the National Associations of Insurance Commissioners for calendar year 2015, the latest year available. The HO-3 policy is the most common type of homeowner insurance primarily for its broad range of coverage and affordability. Because this estimated cost was from calendar year 2015, the Tenants' and Household Insurance component of the Consumer Price Index from the U.S. Department of Labor—Bureau of Labor Statistics was used to convert the 2015 dollar values to 2016, 2022, and 2027 values.

TABLE D.19 CURRENT AND FORECASTED HOMEOWNERS INSURANCE COSTS

	2015	2016	2022	2027
CPI-All Urban Comsumers Tneants' and household insurance (Indexed to 2015)	-	100.9	112.1	124.5
2000-2018 Q2 Compound growth rate = 2.12% per year		0.9%	2.12%	2.12%
Average Homeowners' HO-3 Insurance Premiums (Annual)	**$ 1,287**	**$ 1,299**	**$ 1,443**	**$ 1,603**

Prepared by Economic & Policy Resources, Inc.

This historical rate was then escalated to 2027 values using the actual rate of increase from the Tenants' and Household Insurance Consumer Price Index to 2016 (as described above) and then using the compound annual change of the index from calendar year 2000 to the second quarter of 2018 as the basis for forecasting to 2027.

The following tables show the results of the Affordability and Gap Analyses for Queensbury in 2022 and 2027.

Table D.20 Town of Queensbury 2022 Owner's Affordability Analysis:

Owners					
2022 Affordable House Price: Town of Queensbury, NY					
	Median Household Income:				
@ Percent of Median Household Income	$86,222	@50%	@80%	@100%	@120%
Annual Household Income		$43,111	$68,977	$86,222	$103,466
Monthly Household Income		$3,593	$5,748	$7,185	$8,622
% of Income for Housing		30%	30%	30%	30%
Affordable Housing Expenses Per Month (@30% of Monthly Household Income)		$1,078	$1,724	$2,156	$2,587
Property Tax & Insurance Payments Per Month		$337	$512	$629	$746
Insurance	$120.14	$120	$120	$120	$120
Private Mortgage Insurance (1% of Loan Amount)	0.06%	$59	$107	$139	$171
Town, County, and School District Property Taxes (per $1,000)	$1.54	$157	$285	$370	$455
Utilities		$185	$207	$218	$232
Affordable Mortgage Payment (@5.58%)		$556	$1,006	$1,308	$1,609
Affordable Mortgage Amount (95% of Price, Assuming 5% Down)		$97,168	$175,681	$228,421	$280,913
Affordable House Price		**$102,282**	**$184,927**	**$240,443**	**$295,698**
Median House Price (2022)		$269,047	$269,047	$269,047	$269,047
Affordable Price-Difference from Median		**($166,765)**	**($84,120)**	**($28,605)**	**$26,651**

Table D.21 Town of Queensbury 2022 Renter's Affordability Analysis:

Renters					
2022 Affordable Rent: Town of Queensbury, NY					
	Median Household Income:				
@ Percent of Median Household Income	$42,984	@50%	@80%	@100%	@120%
Annual Household Income		$21,492	$34,387	$42,984	$51,581
Monthly Household Income		$1,791	$2,866	$3,582	$4,298
% of Income for Housing		30%	30%	30%	30%
Monthly Utilities		$148	$173	$184	$194
Affordable Asked Rent		$389	$686	$890	$1,095
Affordable Gross Rent		**$537**	**$860**	**$1,075**	**$1,290**
Monthly Gross Rent (Includes Utilities)		$1,242	$1,242	$1,242	$1,242
Affordability Gap		**($704)**	**($382)**	**($167)**	**$48**

Table D.22 Town of Queensbury 2027 Owner's Affordability Analysis:

Owners					
2027 Affordable House Price: Town of Queensbury, NY					
	Median Household Income:				
@ Percent of Median Household Income	$97,998	@50%	@80%	@100%	@120%
Annual Household Income		$48,999	$78,399	$97,998	$117,598
Monthly Household Income		$4,083	$6,533	$8,167	$9,799.83
% of Income for Housing		30%	30%	30%	30%
Affordable Housing Expenses Per Month (@30% of Monthly Household Income)		$1,225	$1,960	$2,450	$2,940
Property Tax & Insurance Payments Per Month		$405	$618	$761	$903
Insurance	$133.55	$134	$134	$134	$134
Private Mortgage Insurance (1% of Loan Amount)	0.06%	$65	$116	$151	$185
Town, County, and School District Property Taxes (per $1,000)	$1.83	$206	$368	$477	$585
Utilities		$185	$207	$218	$232
Affordable Mortgage Payment (@5.91%)		$636	$1,135	$1,471	$1,805
Affordable Mortgage Amount (95% of Price, Assuming 5% Down)		$107,098	$191,296	$247,803	$304,077
Affordable House Price		**$112,735**	**$201,365**	**$260,845**	**$320,081**
Median House Price (2027)		$327,601	$327,601	$327,601	$327,601
Affordable Price-Difference from Median		**($214,866)**	**($126,236)**	**($66,756)**	**($7,520)**

Table D.23 Town of Queensbury 2027 Renter's Affordability Analysis:

Renters					
2027 Affordable Rent: Town of Queensbury, NY					
	Median Household Income:				
@ Percent of Median Household Income	$48,217	@50%	@80%	@100%	@120%
Annual Household Income		$24,109	$38,574	$48,217	$57,860
Monthly Household Income		$2,009	$3,214	$4,018	$4,822
% of Income for Housing		30%	30%	30%	30%
Monthly Utilities		$175	$205	$218	$230
Affordable Asked Rent		$428	$759	$987	$1,217
Affordable Gross Rent		**$603**	**$964**	**$1,205**	**$1,447**
Monthly Gross Rent (Includes Utilities)		$1,461	$1,461	$1,461	$1,461
Affordability Gap		**($858)**	**($496)**	**($255)**	**($14)**

Table D.24 Town of Queensbury 2022 Affordability Gap Analysis:

Town of Queensbury-Estimated Affordable Gap for Owner Units, 2022 [PRELIMINARY]					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$48,999	$78,399	$97,998	$117,598	
Affordable Price [Excludes Transportation Costs]	$116,918	$208,837	$270,525	$331,959	
Estimated Unit Demand	1,526	1,634	1,058	919	3,547
Estimated Unit Supply	744	1,551	1,528	1,442	3,419
Affordability Gap in Units (Demand minus Supply)	781	84	-470	-523	
Cumulative Demand	**1,526**	**3,160**	**4,218**	**5,137**	**8,684**
Cumulative Supply	**744**	**2,295**	**3,823**	**5,265**	**8,684**
Cumulative Gap	**781**	**865**	**395**	**-128**	
Town of Queensbury-Estimated Affordable Gap for Renter Units, 2022 [PRELIMINARY]					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$19,048	$30,476	$38,095	$45,714	
Affordable Rent [Excludes Transportation Costs]	$476	$762	$952	$1,143	
Estimated Unit Demand	870	407	507	286	1,141
Estimated Unit Supply	273	146	557	718	1,519
Affordability Gap in Units (Demand minus Supply)	598	261	-49	-432	
Cumulative Demand	**870**	**1,277**	**1,785**	**2,071**	**3,212**
Cumulative Supply	**273**	**418**	**975**	**1,693**	**3,212**
Cumulative Gap	**598**	**859**	**810**	**378**	
Source: U.S. Census Bureau, American Community Survey				*Prepared by Economic & Policy Resources*	

Table D.25 Town of Queensbury 2027 Affordability Gap Analysis:

Town of Queensbury-Estimated Affordable Gap for Owner Units, 2027 [PRELIMINARY]					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$48,999	$78,399	$97,998	$117,598	
Affordable Price [Excludes Transportation Costs]	$116,918	$208,837	$270,525	$331,959	
Estimated Unit Demand	1,585	1,726	1,220	796	3,804
Estimated Unit Supply	695	1,356	1,411	1,334	4,335
Affordability Gap in Units (Demand minus Supply)	890	370	-191	-538	
Cumulative Demand	**1,585**	**3,311**	**4,530**	**5,326**	**9,130**
Cumulative Supply	**695**	**2,051**	**3,462**	**4,795**	**9,130**
Cumulative Gap	**890**	**1,260**	**1,069**	**531**	
Town of Queensbury-Estimated Affordable Gap for Renter Units, 2027 [PRELIMINARY]					
% of Median Household Income	**<50%**	**50% to 80%**	**80% to 100%**	**100% to 120%**	**>120%**
Median Household Income	$19,048	$30,476	$38,095	$45,714	
Affordable Rent [Excludes Transportation Costs]	$476	$762	$952	$1,143	
Estimated Unit Demand	915	428	350	273	1,431
Estimated Unit Supply	283	116	500	687	1,810
Affordability Gap in Units (Demand minus Supply)	632	312	-150	-414	
Cumulative Demand	**915**	**1,343**	**1,692**	**1,965**	**3,396**
Cumulative Supply	**283**	**399**	**899**	**1,586**	**3,396**
Cumulative Gap	**632**	**943**	**793**	**379**	
Source: U.S. Census Bureau, American Community Survey				*Prepared by Economic & Policy Resources*	

APPENDIX E: ANALYSIS OF DEVELOPABLE LAND

As part of this study, EPR conducted an analysis of all of the large parcels suitable for development in the Town to determine how many of these parcels could accommodate affordable workforce housing projects. To undertake this analysis, "developable" parcels were organized by property class, zoning district, and access to municipal water and sewer. A previous assessment of developable parcels was conducted in the context of the 2003 Town of Queensbury Affordable Housing Strategy. In the prior 2003 Town of Queensbury Affordable Housing Strategy, developable land was defined as parcels of at least 10 acres from the following property classes: (1) all types of agricultural land (property class 140); (2) rural residential property (property class 240); (3) vacant residential land (property class 311); (4) abandoned agricultural land (property class 321); (4) vacant residential land over 10 acres (property class 322); and (5) vacant land in industrial areas (property class 340 and 341).

Since the time of the previous housing study, the Town has revised its zoning code and some of the residential codes and designations have changed or are no longer available. In EPR's analysis of developable land, we began by replicating the previous study's property class list[1] but expanded it to include similar property classes such as vacant rural land[2] and misclassified "residential vacant land under 10 acres" parcels that have more than 10 acres[3]. The inclusion of these two property classes adds 10 more parcels totaling 485 acres to the list of developable land. These parcels could be suitable for larger-scale housing projects and developments that could take advantage of higher density and/or cheaper costs associated with building at scale.

In addition to replicating the previous analysis, EPR also analyzed vacant parcels under 10 acres[4] and added to the total number of acreage and parcels that could potentially be developed. These smaller parcels are likely not suitable for large-scale development projects unless several contiguous parcels are purchased and combined, but they could be used for smaller or individual projects that could meet future housing needs. The tables below show the results of these analyses and their comparability to the previous 2003 Affordable Housing Strategy.

[1] Property class 140, 240, 311, 321, 322, 340, and 341.
[2] Property class 323.
[3] Property class 314.
[4] Property codes 311, 312, 314, 322, 323, 330, 331, 340, and 341.

Table E.1 Developable Parcels with Access to Public Water and Sewer Systems

EPR Findings	All Zoning Districts		Residential Zoning	
Category (10 or More Acres)	**Acreage**	**# of Parcels**	**Acreage**	**# of Parcels**
Developable Land with Water Service (Only)	1,238	44	997	36
Developable Land with Sewer Service (Only)	308	8	308	8
Developable Land with Both Water and Sewer	326	15	295	13
Developable Land with Neither Water and Sewer	5,454	179	5,203	174
Total	**7,326**	**246**	**6,803**	**231**
Category (Less than 10 Acres)	**Acreage**	**# of Parcels**	**Acreage**	**# of Parcels**
Developable Land with Both Water and Sewer	249	207	122	109
Developable Land without Both Water and Sewer	2,330	1,691	2,053	1,473
Total	**2,579**	**1,898**	**2,175**	**1,582**
Category (All Acreage)	**Acreage**	**# of Parcels**	**Acreage**	**# of Parcels**
Total Developable Land with Both Water and Sewer	575	222	416	122
Total Developable Land without Both Water and Sewer	9,330	1,922	8,562	1,691
Total Developable Land	**9,905**	**2,144**	**8,978**	**1,813**

Table E.2 Developable Parcels determined by the 2003 Affordable Housing Strategy

	All Zoning Districts		Residential Zoning	
Category (Over 10 Acres)	**Acreage**	**# of Parcels**	**Acreage**	**# of Parcels**
Developable Land With Water Service	2,585	183	1,819	103
Developable Land with Sewer Service	332	48	249	21
Developable Land with Water and Sewer Service	332	48	249	21
Developable Land with Neither Water Nor Sewer	4,757	184	4,707	177

EPR's analysis indicates that there is still a large amount of developable land for affordable workforce housing projects in the Town, even when considering those parcels that are currently zoned as residential[5]. The number of large parcels with connections to both municipal water and sewer has increased due to expansion of the Town's infrastructure. Of the ten-or-more-acre parcels, 295 acres (4%) are zoned residential and have access to both municipal sewer and water but another 997 acres (14%) have access to Water (only) and 308 acres (4%) have access to Sewer Service. When including smaller parcels (i.e., less than 10 acres) as well, the results indicate that 122 parcels encompassing 416 acres have access to both public water and sewer services and could be developable, which indicates additional residential development could be accommodated.

The Town has a diverse range or topographic and environmental features that could limit the development of some the large parcels noted above. Areas with steep slopes are less desirable for development because they typically require additional costs and environmental review (e.g. in order to reduce erosion from runoff, etc.). Most areas with sloped elevation are located west

[5] Zoning codes LC-10A, LC-42A, MDR, NR, PUD, RR-3A, RR-5A, SPLIT, and WR.

of the aptly-named West Mountain Road and west of Country Route 7 and much of this land is currently forested land. The other natural building restriction are wetland areas. The Town has a diverse mix of wetland types from riparian zones (along river banks) to swampy marshland to prime, lakefront real estate. Ensuring that these parcels are properly protected and preserved benefits not just the town's evolving economy but also the natural aesthetic that makes the Town feel like home to so many residents.

For our analysis we utilized GIS wetland areas from the National Wetlands Inventory (NWI), used by the U.S. Fish and Wildlife Service; the New York Department of Environmental Conservation (DEC), and the Adirondack Park Agency (APA); and slope data provided by the Town's GIS Department. Parcels that were more than 50% covered by wetland areas or sloped terrain were considered encumbered and would require significantly more time devoted to mitigating environment concerns and addressing building constraints.

Of parcels between the Hudson River to the south and Halfway Creek to the north, see *Figure E.1*, there are relatively few large, unencumbered parcels available for development. Most parcels in this area will be small (<1 acres) and more suitable for single-family residences or high-density multi-family residences. West of the Northway and north of Halfway Creek, see *Figure E.2*, most large parcels available for development are along Gurney Lane near Butler Pond. Most of this area is encumbered by sloped terrain and wetland area surrounding Rush Pond. North of NY-149, see *Figure E.3*, the large Dunham Bay Marsh stands prominent in the low-lying north of the Town. To the west, French Mountain overlooking Lake George and marking the southern edge of the Adirondacks. Several large parcels along either side of NY-149 appear unencumbered by terrain restrictions and could be developed, see *Figure E.4*. South of NY 149 and east of the Northway, the primary restriction are the numerous small, scattered wetlands, see *Figure E.5*. Even still, there appears to be several parcels unencumbered from these natural restrictions.

Even with those environmental constraints, available building space should not be a restrictive factor when considering future land supply growth in the town. Another important factor to note from this analysis is the availability of water and sewer. While there does appear to be developable land available serviced by water and sewer, there is much more land that is outside water and/or sewer districts. Expanding these services would likely make a much greater percentage of these vacant lands attractive for potential buyers and developers.

Figure E.1 Map of the Developable Parcels in West Glens Falls

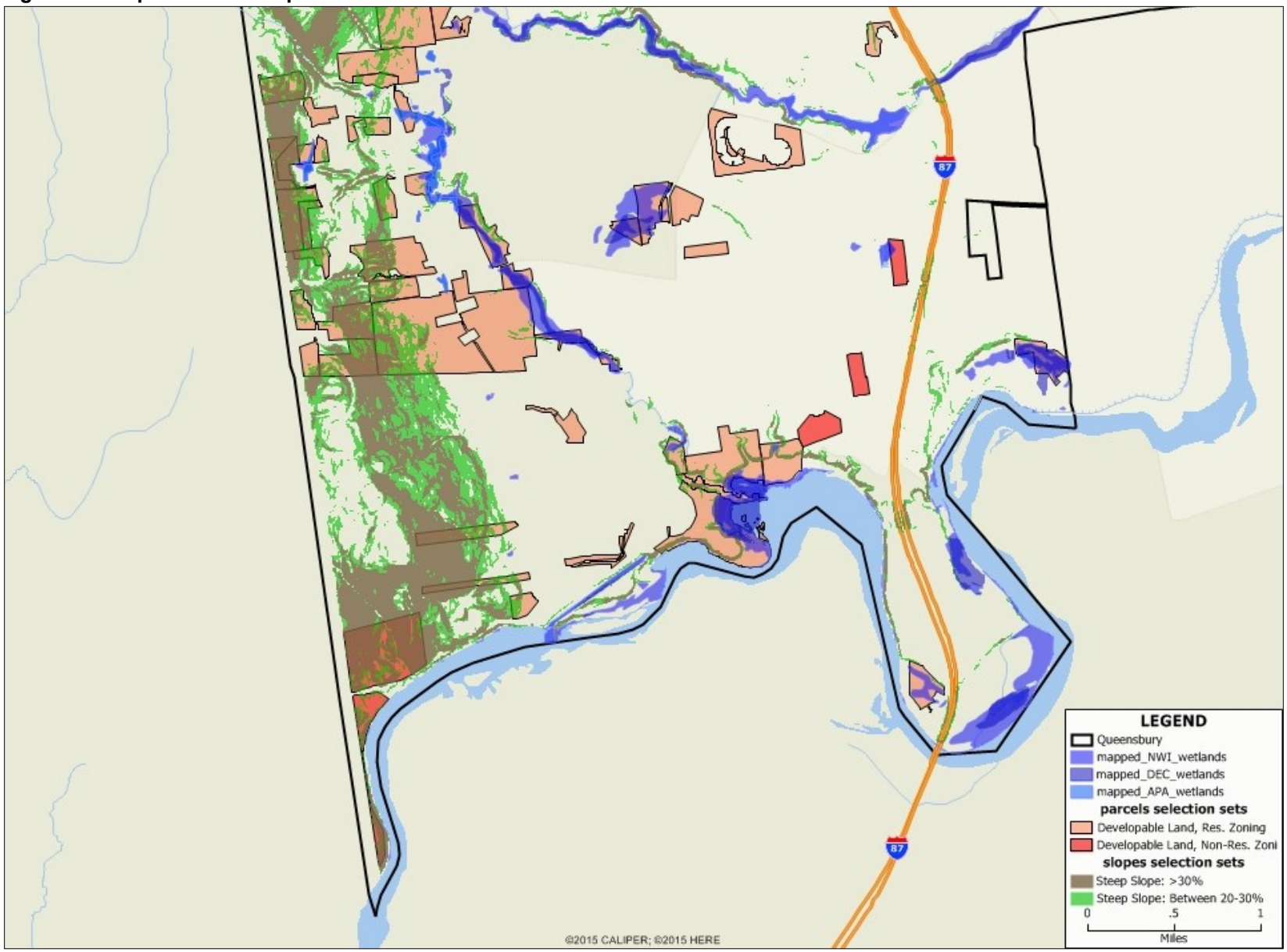


Figure E.2 Map of the Developable Parcels Northwest of Glens Falls

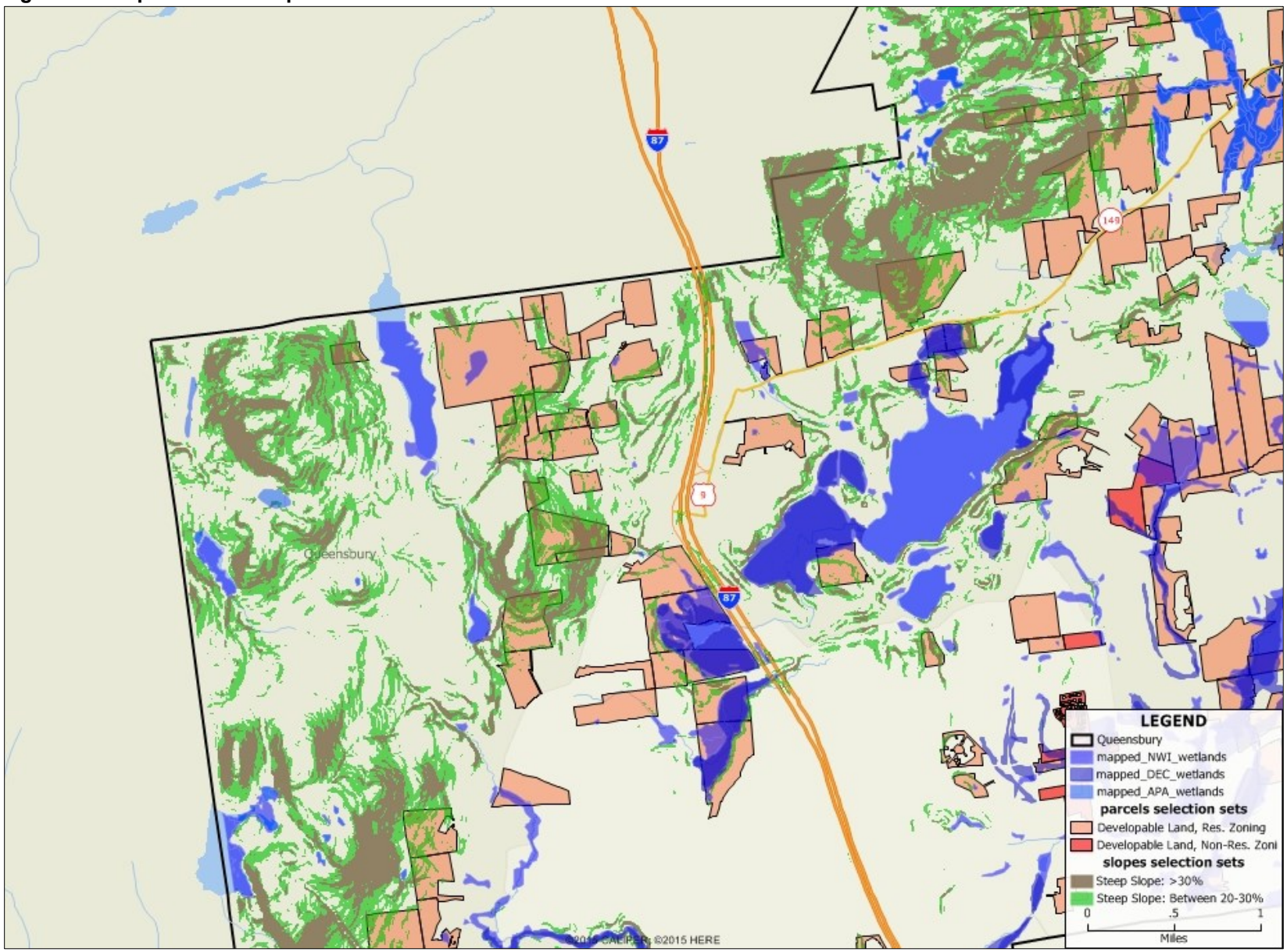


Figure E.3 Map of the Developable Parcels in North Queensbury

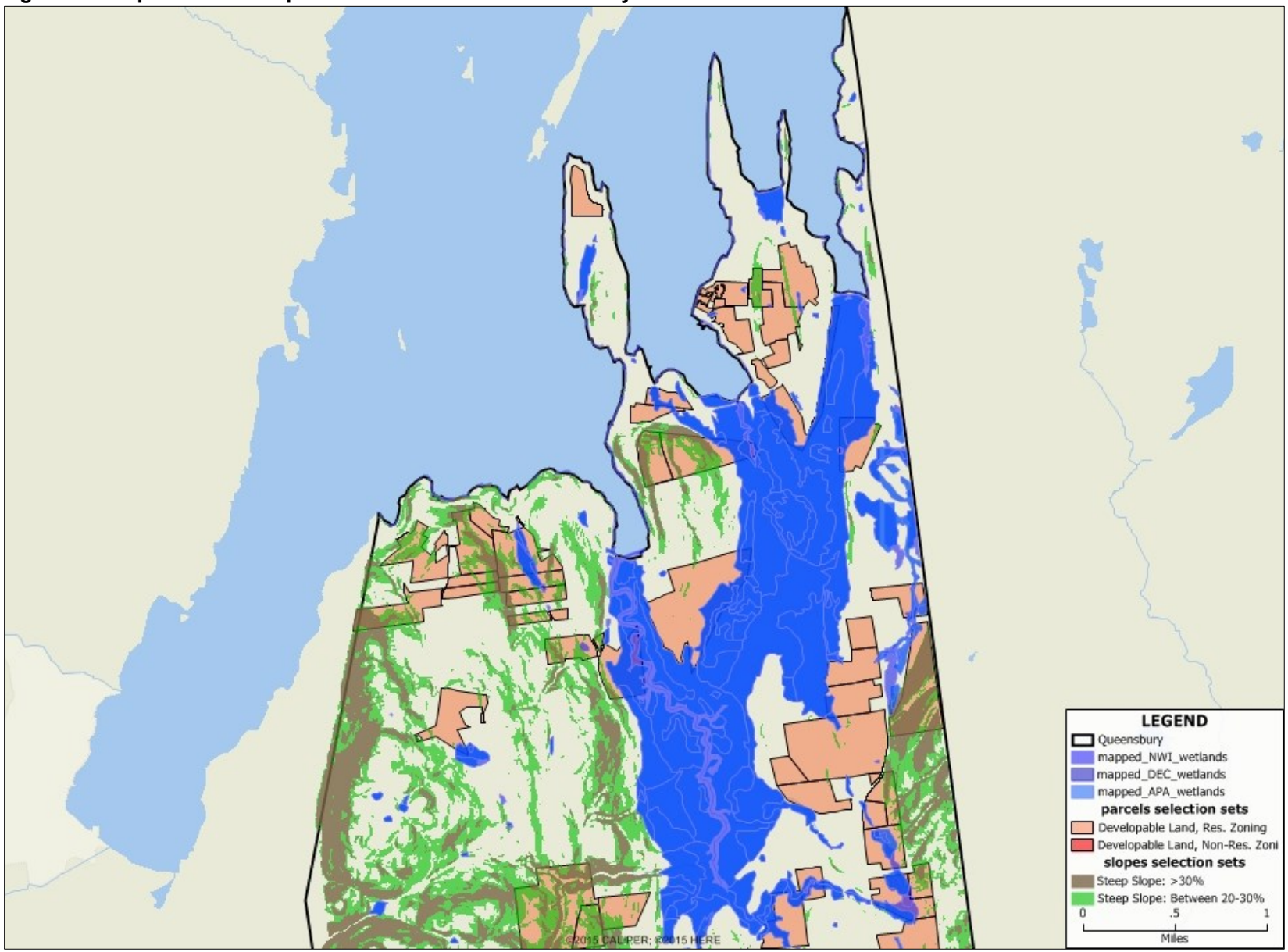


Figure E.4 Map of the Developable Parcels in Eastern Queensbury

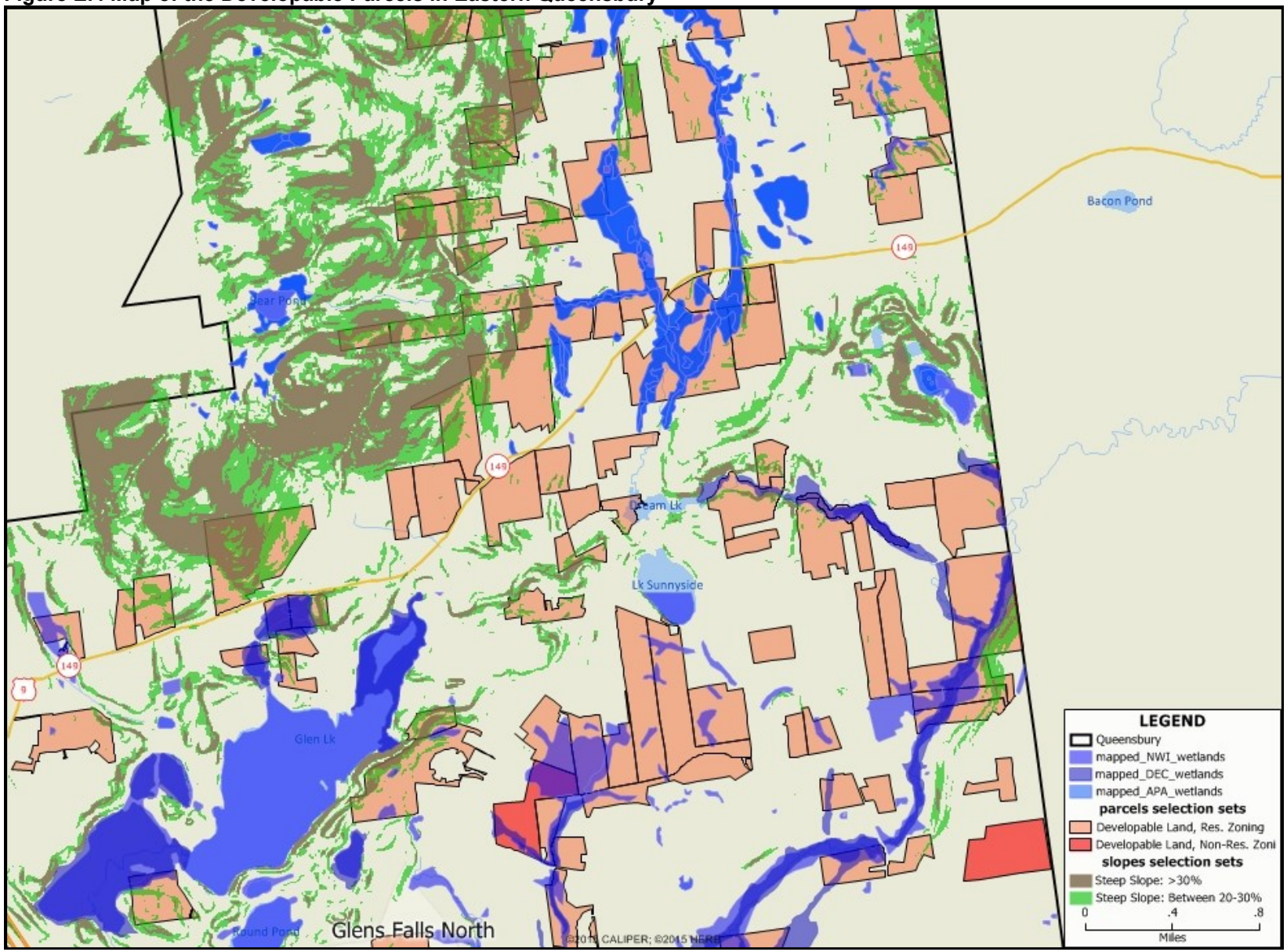
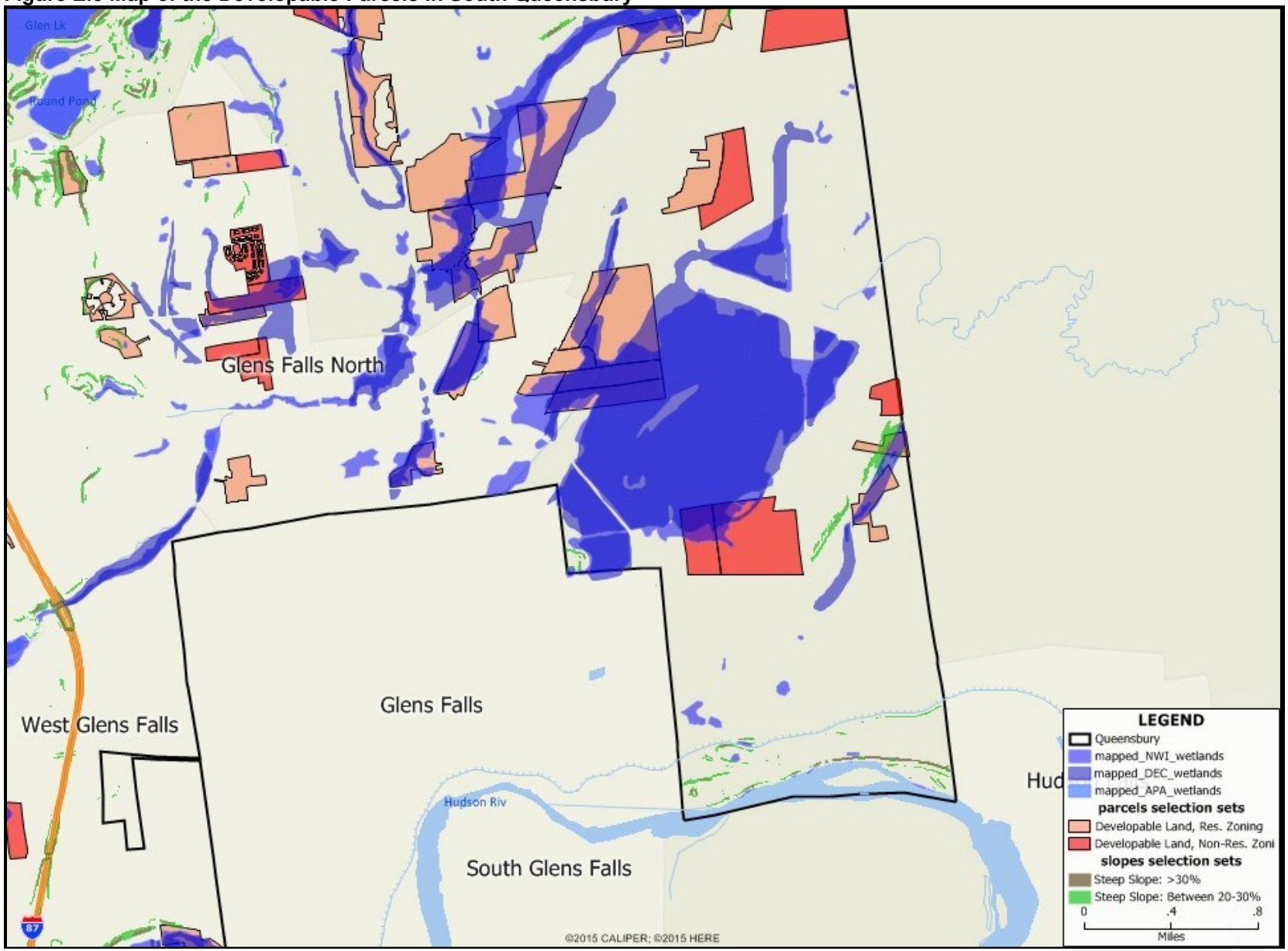


Figure E.5 Map of the Developable Parcels in South Queensbury



APPENDIX F: ZONING REGULATION MODEL LANGUAGE

Current Density Bonus Language (with addition highlighted yellow)

Residential density.

(1)

Base residential density. Base residential density (BRD) in a PUD is that density as permitted in the original district or districts in the current Zoning Ordinance. The residential density allowed in a PUD (PUD density) shall not exceed 100% of the original base residential density except as set forth below. The overall residential intensity of the project cannot exceed the amount of available development potential of the individual APA Land Use Intensity Zone if the proposed PUD is located within the Adirondack Park.

(2)

Density bonuses. The Town Board may award a density bonus to increase the number of dwelling units beyond the base residential density. The density bonuses shall not make the total number of dwelling units to exceed a maximum of 120% of the base residential density as described below. Computations shall be rounded to the lowest number. Density bonuses may be awarded the following:

(a)

For the inclusion of one LEED-certified dwelling unit under the United States Green Building Council's LEED (Leadership in Energy and Environmental Design) program, one dwelling unit may be added as a density bonus. The bonus unit must also be LEED-certified. The level of LEED certification does not matter.

(b)

For the inclusion of three dwelling units certified as energy-efficient under the federal government's ENERGY STAR program, one dwelling may be added as a density bonus. The bonus unit must also be certified as energy-efficient under the federal government's ENERGY STAR program. This density bonus shall not exceed 10% of the base residential density.

(c)

For the inclusion of *X* owner units at a price affordable* to a household whose income is *80%* or below the median owner household income in the Town X dwelling units may be added as a density bonus

(d)

For the inclusion of *X* owner units at a price affordable* to a household whose income is *60%* or below the median owner household income in the Town, which will remain affordable at this income level for *X* years, *X* dwelling units may be added as a density bonus.

*Affordable is defined as requiring no more than 30% of household income to be spent on gross housing costs as determined by the XXX.

COTTAGE HOUSING

MODEL REGULATIONS[1]

Section 1: Intent

A) These regulations authorize Cottage Housing Developments (CHDs) as a permitted use in certain residential zones with certain standards.

B) Cottage Housing is a type of housing appropriately sized for smaller households. This housing type encourages efficient use of land, affordability and energy conservation. Cottage Housing allows for a higher density development than is normally allowed. This is made possible by smaller home sizes, clustered home sites and parking and design standards.

Section 2: Definitions

A) Cluster: A group of four to 12 cottages, arranged around a common open space.

B) Common open space: An area improved for passive recreational use or gardening. Common open spaces are required to be owned and maintained commonly, through a homeowners' or condominium association or similar mechanism.

C) Cottage: A single family detached dwelling unit that is part of a cottage housing development.

D) Cottage Housing Development (CHD): One or two clusters of cottages developed under a single land development plan, or as part of another land development plan.

E) Footprint: The gross floor area of a cottage's ground-level story.

Section 3: Districts

A) CHDs shall be permitted only in medium density single-family residential, and medium density multi-family residential districts.

B) CHDs shall only be permitted in areas served by public sewer and water.

Section 4: Density

A) Cottages may be built at up to twice the underlying zoned density for single family detached housing.

B) A CHD is composed of clusters of cottages.

1. Minimum units per cluster: 4
2. Maximum units per cluster: 12
3. Maximum clusters per CHD: 2

Section 5: Community Assets

A) Common open space

1. Each cluster of cottages shall have common open space to provide a sense of openness and community for residents.
2. At least 400 square feet per cottage of common open space is required for each cluster.
3. Each area of common open space shall be in one contiguous and useable piece.
4. To be considered as part of the minimum open space requirement, an area of common open space must have a minimum dimension of 20 feet on all sides.
5. The common open space shall be at least 3,000 square feet in area, regardless of the number of units in the cluster.

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[1] Model Regulation Language from Cottage Housing Development by the Lehigh Valley Planning Commission, updated December 2015. http://www.lvpc.org/pdf/cottageHousingDev.pdf

6. Required common open space may be divided into no more than two separate areas per cluster.

7. At least two sides of the common open area shall have cottages along its perimeter.
8. Parking areas, yard setbacks, private open space and driveways do not qualify as common open space.
9. Any municipal requirements for contributions to off-site recreation facilities shall be reduced for the CHD by the amount of common open space included in the development.

B) Community Building
1. Community buildings are permitted in CHDs.
2. Community buildings shall be clearly incidental in use and size to dwelling units.
3. Building height for community buildings shall be no more than one story.

Section 6: Ownership

A) Community buildings, parking areas and common open space shall be owned and maintained commonly by the CHD residents, through a condominium association, a homeowners' association, or a similar mechanism, and shall not be dedicated to the municipality.

Section 7: Design

A) Cottage Size
1. The gross floor area of each cottage shall not exceed 1,200 square feet.
2. At least 25% of the cottages in each cluster shall have a gross floor area less than 1,000 square feet.
3. Cottage areas that do not count toward the gross floor area or footprint calculations are:
   a. Interior spaces with a ceiling height of six feet or less, such as in a second floor area under the slope of the roof;
   b. Basements;
   c. Architectural projections—such as bay windows, fireplaces or utility closets—no greater than 24 inches in depth and six feet in width;
   d. Attached unenclosed porches;
   e. Garages or carports;
4. The footprint of each cottage shall not exceed 850 square feet.

B) Unit Height
1. The maximum height of cottage housing units shall be 25 feet.

C) Orientation of Cottages
1. Each dwelling unit shall be clustered around a common open space. Each unit shall have a primary entry and covered porch oriented to the common open space.
2. Lots in a CHD can abut either a street or an alley.
3. Each unit abutting a public street (not including alleys) shall have a façade, secondary entrance, porch, bay window or other architectural enhancement oriented to the public street.

D) Cottage Setbacks
1. The minimum setbacks for all structures (including cottages, parking structures and community buildings) in a CHD are:
   a. Ten feet from any public right-of-way.
   b. Ten feet from any other structure.

2. Cottages shall be no more than 25 feet from the common open area, measured from the façade of the cottage to the nearest delineation of the common open area.

3. No part of any structure in the CHD (including but not limited to cottages, parking structures and community buildings) shall be more than 150 feet, as measured by the shortest clear path on the ground, from fire department vehicle access.

E) Porches

1. Cottage units shall have covered front porches. The front porch shall be oriented toward the common open space.
2. Covered porches shall have at least 60 square feet in area.

F) Basements

1. Cottages may have basements.

Section 8: Parking

A) Minimum Number of Off-Street Parking Spaces

1. Units up to 700 square feet: 1 space per dwelling unit.
2. Units 701-1000 square feet: 1.5 spaces per dwelling unit, rounded up to the next whole number.
3. Units with more than 1000 square feet: 2 spaces per dwelling.
4. The CHD shall include additional guest parking. A minimum of .5 guest parking spaces per dwelling unit, rounded up to the next whole number, shall be provided for each cottage cluster. Guest parking may be clustered with resident parking, however, the spaces shall include clear signage identifying them as reserved for visitors.
5. The requirement for off-street parking may be waived or reduced by the municipality if sufficient on-street parking is available.

B) Parking Design

1. Parking shall be separated from the common area and public streets by landscaping and/ or architectural screening. Solid board fencing shall not be allowed as an architectural screen.
2. Parking areas shall be accessed only by a private driveway or a public alley.
3. The design of garages and carports—including roof lines—shall be similar to and compatible with that of the dwelling units within the CHD.
4. Parking areas shall be limited to no more than five contiguous spaces.

Section 9: Walkways

1. A CHD shall have sidewalks along all public streets.
2. A system of interior walkways shall connect each cottage to each other and to the parking area, and to the sidewalks abutting any public streets bordering the CHD.
3. Walkways and sidewalks shall be at least four feet in width.

Current Cottage Housing Language:

Not a currently allowed use in the town. Language above (with modifications as decided by the appropriate authority) could be added to PUD section (Chapter 179 Article 12 of Town code), General Regulations section (Chapter 179 Article 4), Mobile Home Section (Chapter 113), Supplementary Regulations (Chapter 179 Article 5), or in a different or new section as deemed appropriate by the appropriate authority.

ACCESSORY UNITS[2]

ACCESSORY DWELLING UNIT MODEL ORDINANCE	EXPLANATION
I. Authority	
This section is enacted in accordance with the provisions of RSA 674:71 – 73 and RSA 674:21.	*RSA 674:71-7341 is the new statutory reference for accessory dwelling units (ADU) and RSA 674:21 Innovative Land Use Controls is the statutory reference for administering conditional use permits.*
II. Purpose	
The purposes of the accessory dwelling unit ordinance are to: (a) Increase the supply of affordable housing without the need for more infrastructure or further land development. (b) Provide flexible housing options for residents and their families. (c) Integrate affordable housing into the community with minimal negative impact. (d) Provide elderly citizens with the opportunity to retain their homes and age in place.	*These purposes are based on the purposes from the State law. The municipality may add additional purposes as desired.* *An ADU may be deemed a unit of workforce housing for purposes of satisfying the municipality's obligation under RSA 674:59 if the unit meets the criteria in RSA 674:58, IV for rental units.*
III. Definition	
An "accessory dwelling unit" means a residential living unit that is within or attached to a single-family dwelling [OPTIONAL: or is located in a detached structure} and that provides independent living facilities for one or more persons, including provisions for sleeping, eating, cooking, and sanitation on the same parcel of land as the principal dwelling unit it accompanies.	*This is the State definition for an ADU. Because the State law allows the use of detached structures for an accessory dwelling unit, the ordinance definition should be expanded to state such, if a municipality wishes to allow accessory dwelling units in or as detached structures.*

[2] Model Language for Accessory Dwelling Units from the Town of Wolfeboro, New Hampshire. https://ecode360.com/10187309

IV. Conditional Use Permit Required

Pursuant to RSA 674:21 the Planning Board is hereby authorized to grant a Conditional Use Permit to allow for accessory dwelling units in accordance with the restrictions and requirements of this section.

Accessory Dwelling units can be permitted by right, as: 1) a Conditional Use Permit by the Planning Board (appeal to Superior Court); 2) a Special Exception by the Zoning Board of Adjustment (appeal to the ZBA); or 3) a building permit approved and issued by the Building Inspector. This model recommends approval as a Conditional Use Permit by the Planning Board. If a municipality uses the Conditional Use Permit or Special Exception process items in section IV, (a)-(g) are recommended as criteria for approval of an ADU application.

Current Density Bonus Language (with addition highlighted yellow)

§ 179-5-020**Accessory structures.**

A.

Accessory structures (up to two totaling no more than 500 square feet) shall be a permitted use in all residential zoning districts on parcels of three acres or less. Accessory structures over 120 square feet outside the Adirondack Park must comply with the setback requirements applicable to the principal building; within the Adirondack Park, principal building setbacks shall apply to accessory structures over 100 square feet. For residential parcels larger than three acres, up to three accessory structures totaling up to 750 square feet shall be allowed. Accessory structures in nonresidential zones that exceed an area of 120 square feet shall be subject to site plan review in the zoning districts shown in the Schedule of Permitted Uses (see Table 1).[1]

(1)

Accessory Structures are permitted to be used as “Accessory Dwelling Units” which is defined as a residential living unit that is within or attached to a single-family dwelling [OPTIONAL: or is located in a detached structure} and that provides independent living facilities for one or more persons, including provisions for sleeping, eating, cooking, and sanitation on the same parcel of land as the principal dwelling unit it accompanies.

B.

Minimum yard regulations.

(1)

Accessory structures, which are not attached to a principal structure, may be erected in accordance with the following restrictions:

(a)

Accessory structures of less than 120 square feet may be erected at a minimum of five feet from side and rear lot lines or buffer zones where required, provided that they may not be located closer to the street or shoreline than the required setback line of the principal structure; and

[Amended 1-28-2011 by L.L. No. 2-2011]

(b)

Accessory structures greater than 120 square feet require a building permit and must comply with the setback requirements applicable to the principal structure.

(2)

When an accessory structure is attached to the principal building, it shall comply in all respects with the requirements of this chapter applicable to the principal buildings.

(3)

No accessory structure may be erected without a principal structure and/or use.

C.

Private swimming pools. Private swimming pools, permanent and/or portable, which shall be accessory to a principal, noncommercial dwelling use, shall be regulated as follows, except that these regulations shall not apply to portable swimming pools which shall be not more than three feet in height nor more than 15 feet in length or diameter.

(1)

Pools may be erected only on the same lot as the principal structure.

(2)

Pools may be erected only in the rear yard of such structure and shall be of a distance not less than 20 feet from the rear lot lines or buffer zone, where appropriate, nor less than 10 feet from the side lot line or buffer zone, where appropriate.

(3)

(Reserved)

(4)

All private swimming pools shall be enclosed by a permanent fence of durable material at least four feet in height.

(5)

In the case where a lot fronts on two or more public rights-of-way, a private swimming pool shall be erected only on that portion of said lot that is directly adjacent to that side of the principal building which is directly opposite the architectural main entrance of said building and the neighboring side lot line. In no case shall the pool be any nearer to the lot lines abutting any public right-of-way than the required front setback for the principal building of the zoning district in which it is located. Furthermore, the pool shall be screened from the view of the public right-of-way and the neighboring property by means of landscaping. (See the definition of "landscaping" in Article 2 and the landscaping design standards set forth in Article 8 of this chapter.)

D.

Garages. Only one garage is permitted per dwelling. On lots less than five acres, garages may not exceed 1,100 square feet. On lots larger than or equal to five acres, garages may be up to 2,200 square feet. In no case shall the garage size exceed the size of the principal structure on the lot.