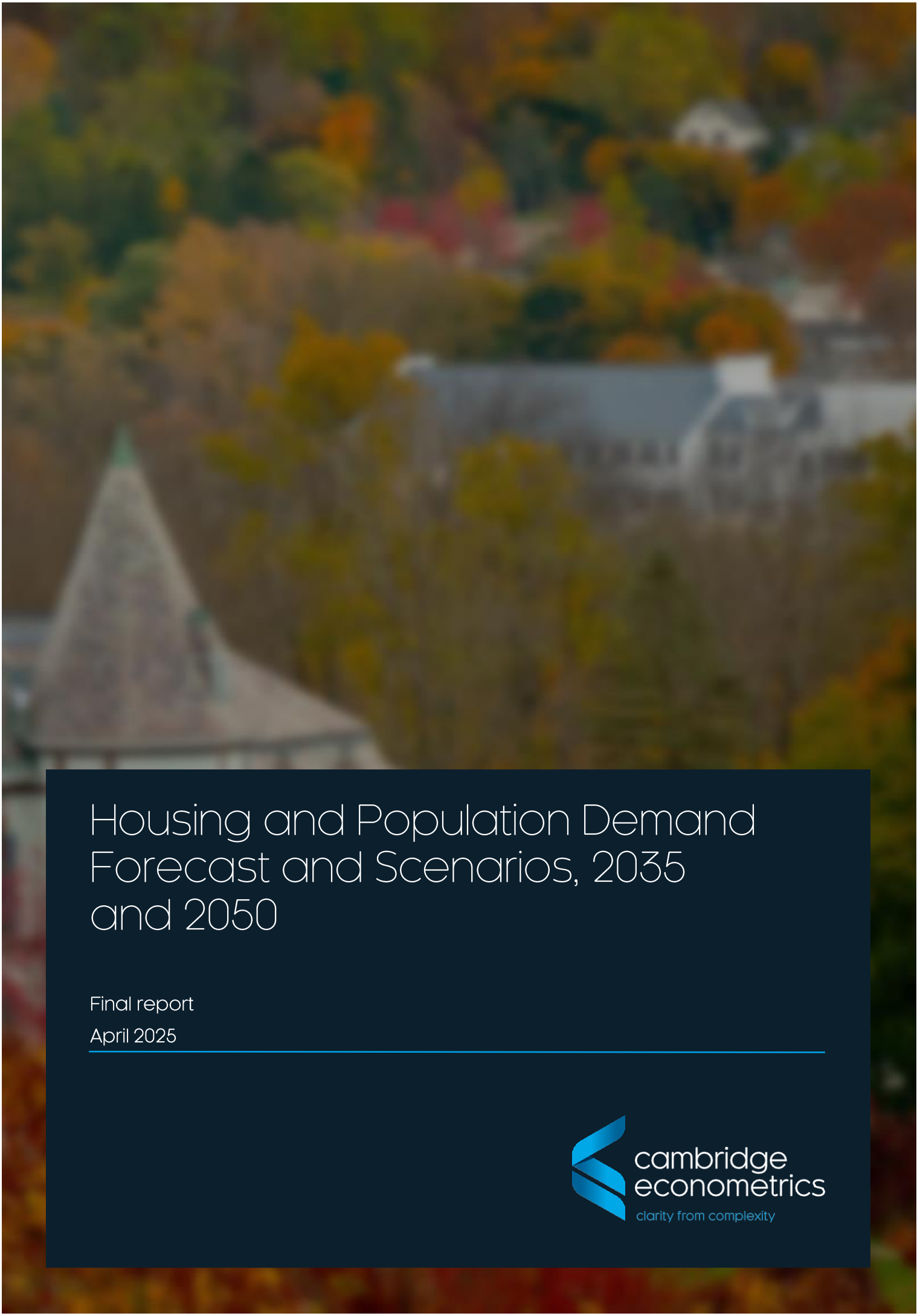


Housing and Population Demand Forecast and Scenarios, 2035 and 2050

Final report

April 2025

cambridge econometrics

clarity from complexity

Introduction

For Task 4, Cambridge Econometrics developed forecasts for population growth and housing demand in 2035 and 2050 for Addison, Chittenden, Franklin, Rutland, and Washington counties. The purpose of these forecasts is to understand what the demand for housing in these areas could be, based on the size of their future populations. To understand how housing demand could vary based on different levels of population growth, three scenarios were modelled.

1. A **baseline forecast** that forecasted population growth based on current trends continuing into the future
2. A **high growth scenario** which fixed a high level of household growth that is significantly above the current trend
3. A **low growth scenario** which fixed a moderate level of household growth that is above the current, but below the high growth scenario assumption

By modelling two scenarios with a defined level of household growth, the modelling revealed not only the level of housing demand associated with those population levels, but also the amount of net-migration that would be required to achieve such levels of household growth.

CE's proprietary Population and Housing Model (PHM), a well-established demographic model which is tailored to local geographies (in this case the five counties), is used to generate the population and housing estimates and evaluate alternative scenarios. The county-level forecasts are also disaggregated to provide population and housing estimates for ten communities that were selected to participate in the Northwest Vermont TOD RAISE grant project.[1]

This report provides the methodology underpinning the PHM (Chapter 1), results from the baseline forecast (Chapter 2), and results for the two additional forecasted scenarios (Chapter 3).

[1] The 10 selected communities to participate in the TOD RAISE grant project are Ferrisburgh, Middlebury, Vergennes, Essex Junction, Milton, St. Albans Town, Rutland City, Barre, Berlin, and Northfield.

1. Methodology

This analysis uses CE's PHM to forecast population and housing demand in 2035 and 2050 in the five northwest Vermont counties. At its core, the PHM models the interaction between population and housing in an area over time. The model can be used to understand how population changes over the long-term, both in terms of absolute number, as well as demographic characteristics. The model then relates total population to the demand for housing. The model forecasts changes in the characteristics of the population over time, based on a number of factors, such as demographic (e.g., natural aging of the current population) and social (e.g., trends in fertility rates, in and out migration). PHM uses a cohort survival projection methodology, meaning that the future population is influenced by the starting population profile, natural change (births and deaths) and migration (domestic and international). More specifically, the model uses the following inputs to forecast the population (and therefore housing demand) for the five counties:

- **Starting population:** The starting population for each county in 2022 comes from the US Census Bureau's American Community Survey (ACS) 5-year estimates. The population is disaggregated by age and sex.
- **Natural change:** The natural change in the population stems from vital events – births and deaths. The source of this data is the Vermont 2022 Vital Statistics Annual Report from the Vermont Department of Health, and it includes:
    - **Fertility rates:** Fertility rates indicate the number of births per woman by age group in each county.
    - **Mortality rates:** Mortality rates are measured as deaths per 10,000 and are disaggregated by age group and sex.
- **Group quarters population:** Group quarters population includes all residents who do not live in households. This value includes people in prison as well as those living in senior centers, dorms, or group homes. Group quarter population data comes from the Vermont Housing Finance Agency's (VHFA) Vermont Housing Data and is broken out by age group and sex using the Vermont communal population from the ACS.
- **Vacancy:** Vacancy rate, including all unoccupied or seasonal/recreational homes, comes from VHFA's Vermont Housing Data.
- **Household representative rates:** Household representative rates indicate the share of the population by age that is the householder (a.k.a. head of household). This information is used to translate household population into households and thus implicitly derives household size. The data come from VHFA's Vermont Housing Data and is used to estimate the number of households based on the population.
- **Net migration:** Net migration is the cumulative in- and out-migration for both domestic and foreign migrants. The source for this data is US Census Bureau's County Population Totals and Components of

Change. Because migration values can vary substantially year-to-year, the annual average net migration between 2010 and 2023 is used. We disaggregate the total estimates by age group and sex based on the share of people in these demographic categories that moved within the US, according to the US Census Bureau's Geographic Mobility dataset.

While these are the best available county-level data, there is evidence that they may be underestimates of the actual net migration:

- Between decennial censuses in 2010 and 2020, the Census substantially underestimated Vermont's population and net migration in its annual estimates. While our migration inputs for this period have been adjusted to match the 2020 value, it is possible that the annual estimates in the period 2021 to 2023 continue to be underestimated.

- The US Census Bureau's state-to-state migration flows survey tends to have substantially higher migration numbers for Vermont than the Census' County Population Total and Components of Change. For example, the survey suggests domestic net migration was almost 7,600 in 2023 while the other source shows 844 net domestic migration in that year. However, we did not use the state-to-state flows survey because 1) the data are not available at the county level, 2) the data do not include international migration, and 3) they do not align with the Census population estimates. That said, we include two scenarios that explore higher levels of migration than what is used in the baseline.

These data reflect the most recent year available, which in most cases was 2022 at the time of this analysis. For birth rates, death rates, and net migration, growth rates from the US Census' national population projections are applied to the base year data to forecast values. The group quarters population is forecasted based on the historical annual average percentage change by county. Alternatively, vacancy rate and household representative rate are held constant over the forecast period.

Based on these inputs, the model uses an iterative approach to produce the following outputs for each county:

- **Population:** For the purposes of this analysis, population refers to the full-time, year-round residents of an area. This includes household population as well as population living in group quarters**.** The population depends on natural change, such as fertility and mortality, as well as net migration.

- **Household population:** A subset of population, the household population refers to residents who live in households, apartments, or other similar dwelling units (i.e., not group quarters). Because this analysis is primarily concerned with housing demand, household population is the focus of this analysis rather than total population.

- **Households:** Based on household representative rate, household population is translated into households. Households are either single people or groups who occupy a single housing unit, regardless of their relationship with each other.

- **Homes/dwellings:** Homes include all residential dwelling units such as houses and apartments and include vacant as well as occupied units. Group quarters such as dorms, prisons, and senior living facilities are *not* included as homes.

Accounting for the Housing Deficit

It is widely recognized that there is a housing deficit in Vermont. The latest Vermont Housing Needs Assessment attributes the deficit to a number of factors, including low vacancy rates, lost homes that are not replaced, and homelessness.

Similar to VHFA's housing needs assessment, the housing demand forecasts produced by CE include additional considerations to calculate how many homes are needed to alleviate the housing deficit by focusing on vacancy rates and replacement homes. Further detail on these two additional considerations is provided below:

- **Vacancy rate**: Low vacancy rates (excluding seasonal/recreational homes) are a challenge facing most of the five counties in our study area and is one of the main drivers behind the current housing deficit. To account for this shortage, we calculate the number of additional homes that would need to be built in order to bring vacancy rates up to a 'healthy level' of 5 percent for rentals and 2 percent for owner-occupied homes, according to the Vermont Housing Needs Assessment. The housing numbers shown in our modeling have this vacancy rate being achieved by 2027 and maintained throughout the forecast period.

- **Replacement Homes**: The need to build replacement homes for homes lost due to age or damage is also factored into our calculations for the number of homes that need to be built by 2035 and 2050. These homes need to be replaced in order to maintain the housing stock each year. Replacement homes are therefore not additional to the overall housing stock but do require additional home building. They are a one-to-one replacement of lost homes and are needed to maintain the current stock. We estimate replacement homes based on the annual rate of home loss of 0.15 percent, the share quoted in the Vermont Housing Needs Assessment.

Community-Level Housing and Home Building Estimates

County-level results from the PHM are disaggregated to the 10 communities based on some assumptions about the distribution of new homes within each county. The distribution of new homes to each of the 10 communities is based on both qualitative and quantitative research by White & Burke on real estate market demand and trends with some consideration given to development constraints. It does not consider unique economic events in each community, which could significantly alter the population dynamics of a town (e.g., a new business opening employing many people, creating demand for new housing).

2. Baseline Projections

2.1. County-Level Baseline Results

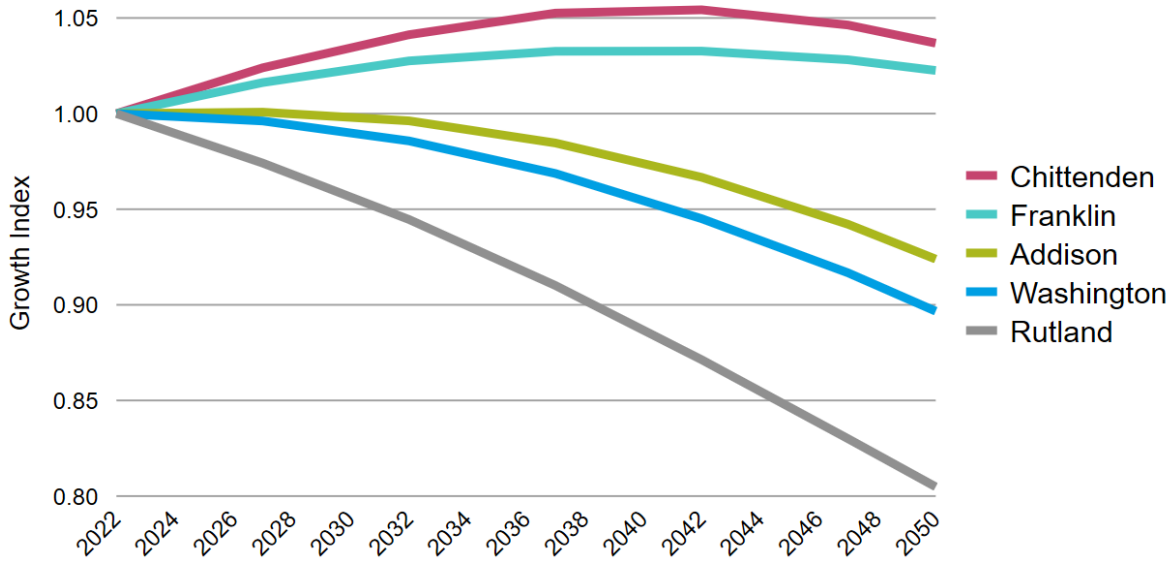
The county-level baseline projections are trend-based, meaning the input assumptions (Section 1.1) relating to population change (e.g. natural change, net migration) are drawn from recent past trends and applied to future years. In other words, this baseline forecast shows how the current population would change should recent trends stay the same.

Household population trends vary by county

As shown in Figure 2.1.1, the household population in Chittenden and Franklin counties is projected to increase until around 2042 and then start a slight downward trend. The starting household population in Chittenden County is 159,300 and the county is expected to have a household population of 165,200 in 2050 after reaching a peak population of 167,900 in 2042. Franklin County starts at 49,700 household residents in 2022, reaches 51,300 in 2042, and then declines to 50,800 by 2050.

Alternatively, the total household population in Addison County, Washington County, and Rutland County is estimated to decline in the baseline forecast over the period 2022 to 2050. Addison County starts at 34,300 household residents in 2022 but falls to 31,700 in 2050, while Washington County declines from 57,300 to 51,400. Rutland County sees the largest decline over the period, falling from 58,400 in 2022 to 47,000 in 2050.

Figure 2.1.1 Household Population Growth Index by County



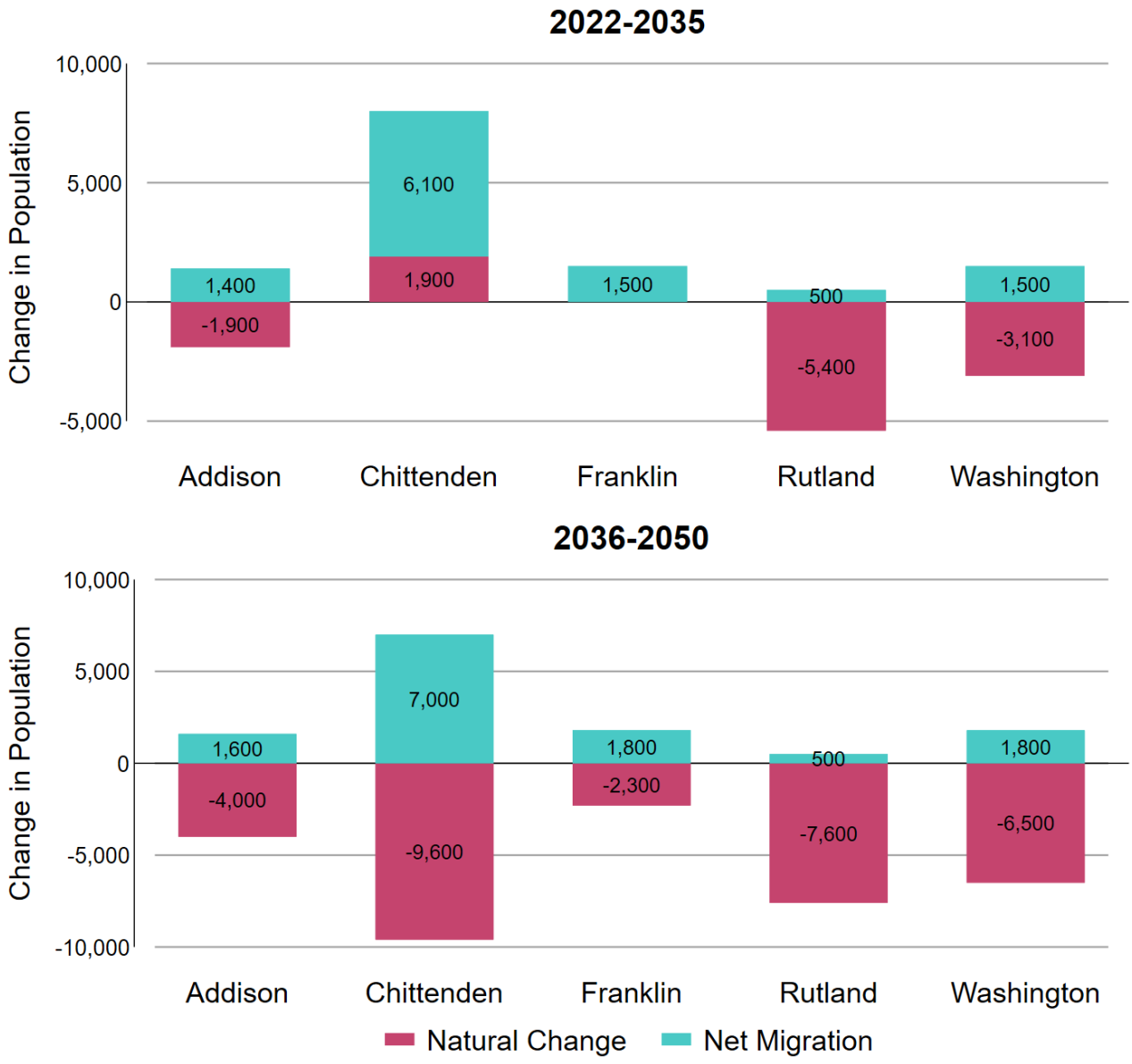
Source: Cambridge Economics' Population and Housing Model

Note: Household population is a subset of the total population, referring to residents who live in households, apartments, or other similar dwelling units (i.e., not group quarters). The household population values are indexed to 2022, the most current year of data available at the time of this analysis.

Population decline is driven by natural change (births and deaths)

The decline in household population is driven by natural change rather than net migration, which is positive in all counties and across the forecast time period (see Figure 2.1.2). Alternatively, natural change is negative (i.e., the number of deaths in a county is greater than the number of births) in Addison, Rutland, and Washington counties between 2022 and 2035 and all counties between 2036 and 2050.

Figure 2.1.2 Components of Change in Household Population by County



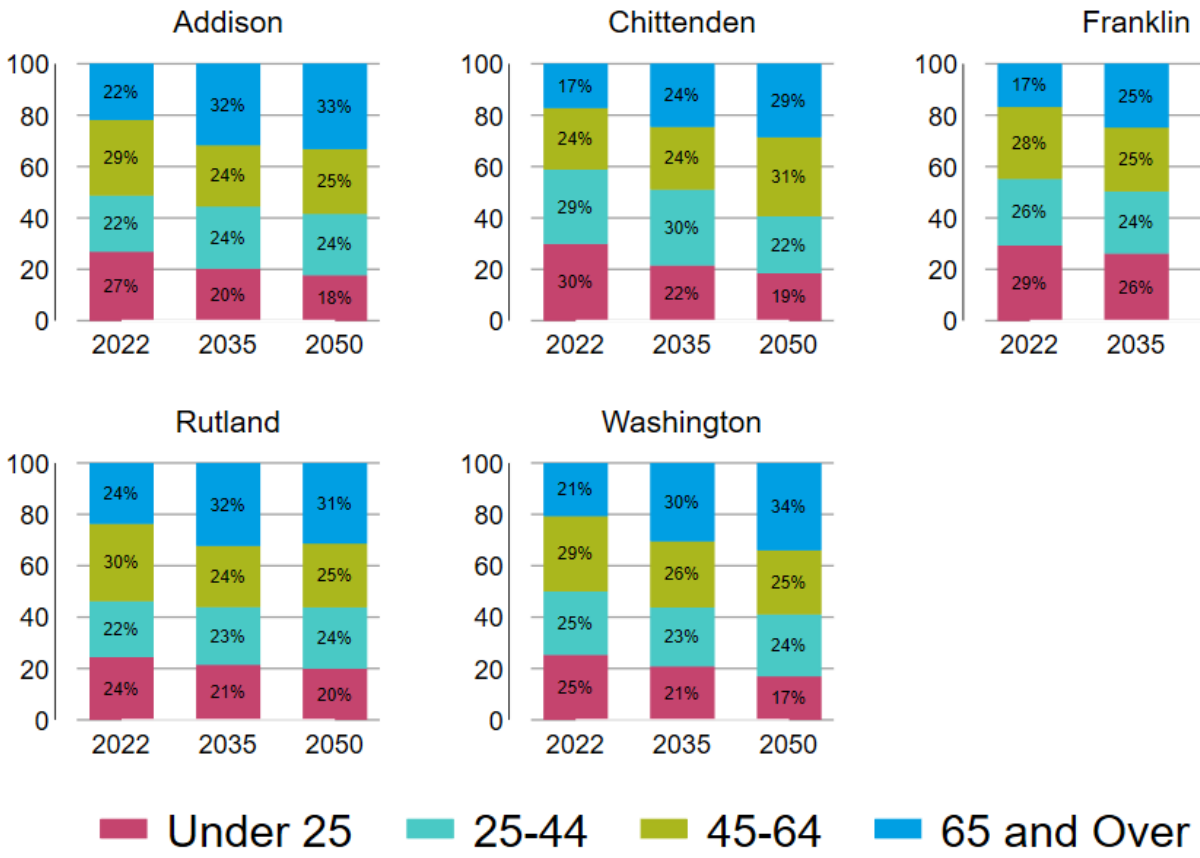
Source: Cambridge Economics' Population and Housing Model

Note: Natural change includes births and deaths and net migration is the sum of in and out migration, including both foreign and domestic. The values shown in the figure are the cumulative change over the specified time period.

The population is shifting towards an older demographic in all counties

The number of births and deaths in a county is largely driven by the age demographic. Like the rest of the country, the household population in the five counties is trending towards an older population, as shown in Figure 2.1.3. However, this trend is more pronounced in Vermont compared to the rest of the country, with a median age in the state of 43 compared to under 39 in the US.[2] As a result, Vermont (and its counties) tends to have more deaths than births and therefore natural population decline.

Figure 2.1.3 Age Distribution of Household Population by County



Source: Cambridge Economics' Population and Housing Model
Note: The figure shows the share of the household population in each county within the specified age band.

Number of households increases by 2035 in all counties except Rutland

Despite the decline or stagnation in household population, the number of households increases in some cases because older residents (which are projected to increase) are more likely to live alone or form households with fewer people (see Figure 2.1.4). As a result, the aging population in the counties means there will be more

[2] US Census Bureau, 2022.

households in 2035 than in 2022 in all counties except Rutland. By 2050, the population decline offsets this dynamic and results in fewer households in Addison and Washington counties, but Chittenden and Franklin counties continue to see growth.

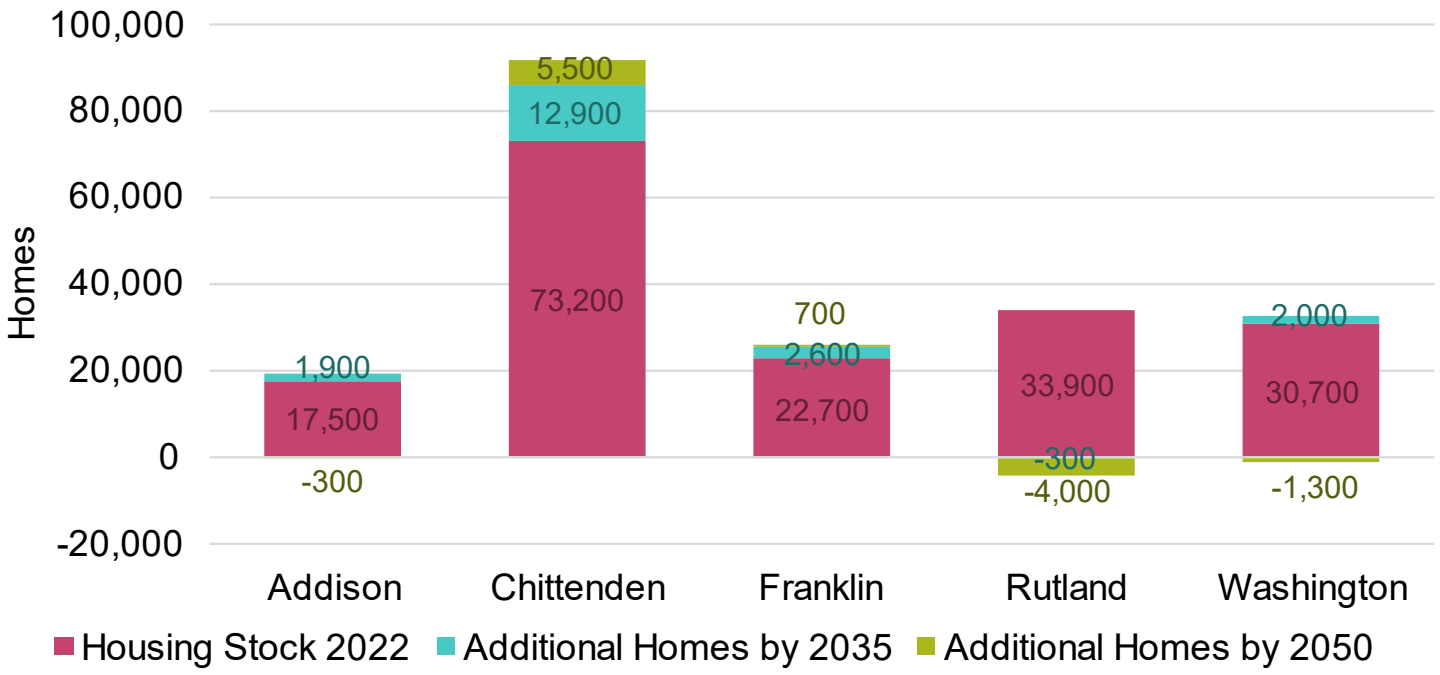
Figure 2.1.4 Total Households by County

Source: Cambridge Economics' Population and Housing Model

More homes are required in most counties in 2035

The total number of homes required considers the number of dwellings needed to accommodate these households as well as homes needed to achieve a healthy vacancy rate and seasonal or recreational homes that are not occupied by full-time residents. As shown in Figure 2.1.5, more homes will be required by 2035 in all counties except Rutland. Between 2035 and 2050 no additional new homes will be needed. Chittenden and Franklin counties will require continued growth in homes throughout the time period, though this growth slows over time.

Figure 2.1.5 Total Homes Required by County to 2050



Source: Cambridge Economics' Population and Housing Model

Note: This figure shows the total homes required by 2035 (i.e., between 2022 and 2035) and 2050 (i.e., between 2035 and 2050) and does not include additional homes needed to replace lost homes.

Additional homes required in most communities

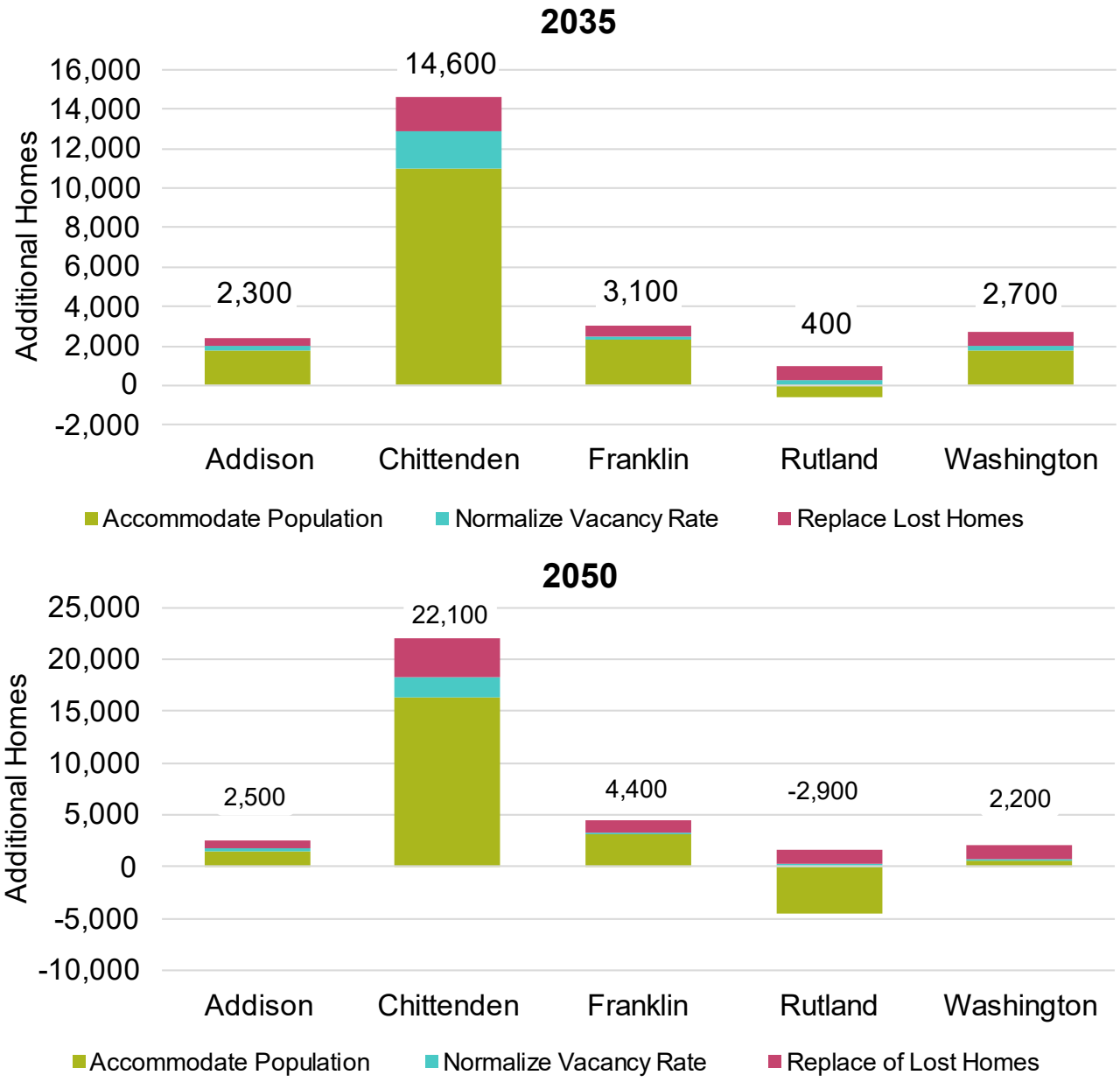
The total number of homes shown above is driven by the change in population and the number of homes needed to normalize the vacancy rate. However, when considering the additional homes needed in each community, it is important to also consider the natural loss of the current housing stock. Each year, homes are lost to disasters such as floods or fires or are rendered unlivable over time or due to neglect. These homes need to be replaced in order to maintain the housing stock each year. Replacement homes are not additional to the overall housing stock but do require additional home building. They are a one-to-one replacement of lost homes and are needed to maintain the current stock.

Replacement homes are included in Figure 2.1.6, showing additional homes required in each county. Our replacement homes assumption is based on the Housing Needs Assessment which identifies that 0.15% of the housing stock is lost each year in Vermont. The number of replacement homes needed is directly tied to a county's total housing stock each year, so it is largest for Chittenden County and smaller for the other counties.

Each county also requires additional homes in order normalize (raise) vacancy rates to a 'healthy' level of 5 percent for rentals and 2 percent for homes, as per the Housing Needs Assessment. Chittenden County will require over 2,000 homes by 2050 to normalize the vacancy rate. Each of the other counties will require about 200 homes by 2050 to normalize their vacancy rates.

Compared to the current housing stock, all counties except Rutland will require additional homes to accommodate the 2050 household population, normalize vacancy, and replace lost homes. In total, Chittenden will need to build 22,100 homes by 2050, a 30 percent increase from the county's 2022 housing stock. Franklin County's 4,400 additional homes by 2050 represent 19 percent of its current housing stock while Addison's 2,500 additional homes make up 14 percent of that county's current total homes.

Figure 2.1.6 Additional Homes Required by 2035 and 2050 by Demand Type



Source: Cambridge Economics' Population and Housing Model

Note: Additional homes reflect the difference between the number of homes required in 2035/2050 and the homes in the start year of 2022 as well as the replacement homes needed over the period. The data labels reflect the cumulative additional homes required by 2035 and 2050.

2.2. Community-Level Baseline Results

Participating communities assumed to get a high share of additional homes

The county forecasts are disaggregated to estimate housing demand in the ten participating communities. The county-level forecasted homes are allocated to the ten communities based on assumptions about the distribution of new homes within each county. These assumptions are shown in Table 2.2.1 below. As seen in the table, most communities are expected to absorb a greater proportion of new homes compared to their current proportion of county housing.

Research by White and Burke as part of Task 3 identified drivers of potential growth that informed the increased proportion of new housing in each of these communities. These ranged from some communities being employment hubs with a growing number of jobs, to other areas that had growing demand for housing and strong income levels. Furthermore, the analysis also considered the availability of undeveloped and underutilized parcels that could be used to deliver additional housing in these communities.

Table 2.2.1 Distribution of New Homes to Communities

	2022 Housing Stock (Existing)	Share of County's 2022 Housing Stock (Existing)	Share of County's Projected Additional Homes (Assumed)
Addison County	**17,455**	**100%**	**100%**
Ferrisburgh	1,521	9%	12%
Middlebury	3,287	19%	38%
Vergennes	1,153	7%	16%
Rest of county	11,494	66%	34%
Chittenden County	**73,209**	**100%**	**100%**
Milton	4,213	6%	7%
Essex Junction	4,970	7%	9%
Rest of county	64,026	87%	84%
Franklin County	**22,714**	**100%**	**100%**
St. Albans Town	3,198	14%	35%
Rest of county	19,516	86%	65%
Rutland County	**33,906**	**100%**	**100%**
Rutland City	10,367	31%	31%
Rest of county	23,539	69%	69%
Washington County	**30,697**	**100%**	**100%**
Barre City	4,088	13%	20%
Northfield	2,029	7%	10%
Berlin	1,204	4%	8%
Rest of county	23,376	76%	62%

Source: Vermont Housing Data, Vermont Housing Finance Agency, HousingData.org and assumptions about the distribution of new homes within each county provided by White and Burke.

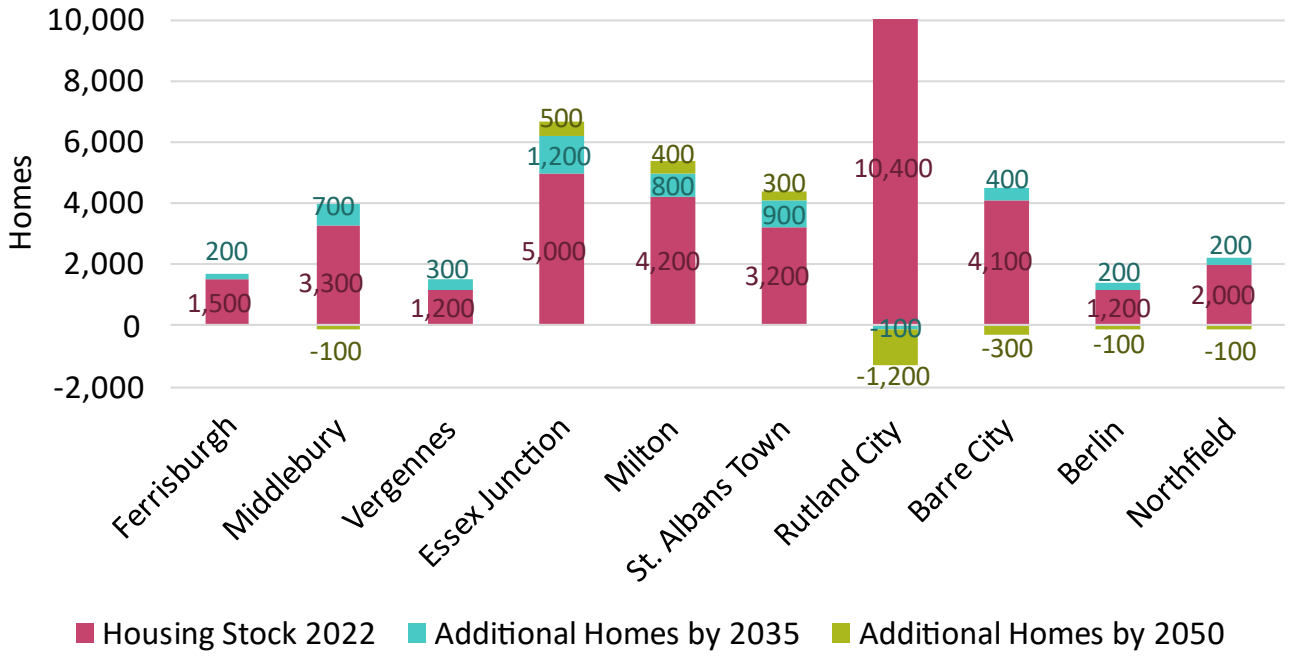
Note: The assumptions about the distribution of projected additional homes to communities are applied across all projected time periods (e.g., 12 percent of Addison County's additional homes will be allocated to Ferrisburgh in every projected year).

More homes required in most communities

As shown in Figure 2.2.1, in all of the communities except Rutland City, additional homes will be required over the forecast period. Essex Junction will require about 6,700 total homes by 2050 and Milton will require over 5,400 total homes.

Although by 2050 Rutland City will still need to have the highest number of total homes across all ten communities, the number of homes needed there is in decline over the forecast period. In other words, Rutland City will need fewer homes in 2035 and 2050 than it has today.

Figure 2.2.1 Total Homes Required by 2035 and 2050 by Community



Source: Cambridge Economics' Population and Housing Model

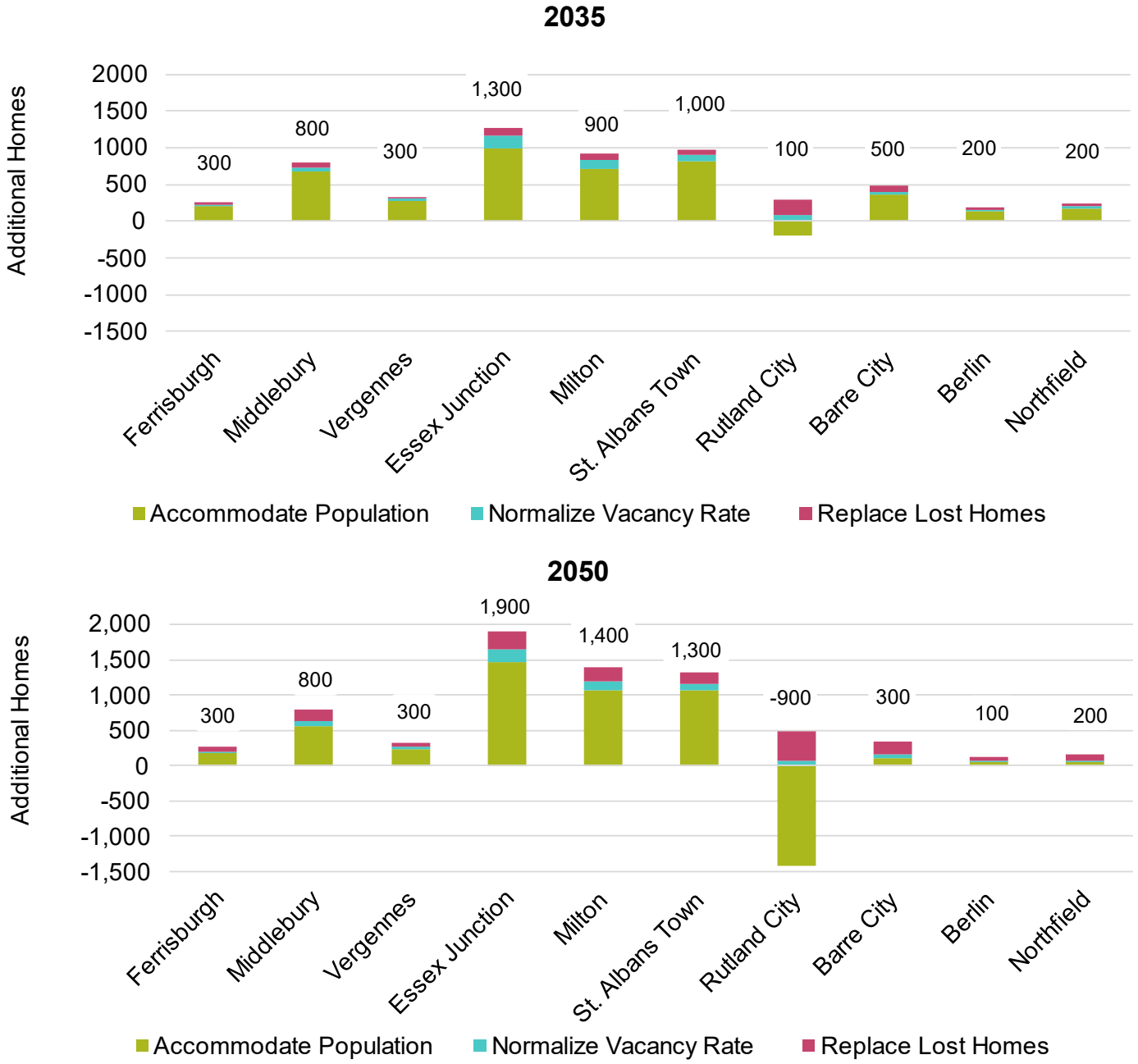
Note: This figure shows the total homes required by 2035 (i.e., between 2022 and 2035) and 2050 (i.e., between 2035 and 2050) and does not include additional homes needed to replace lost homes.

Essex Junction, Milton, and St. Albans Town expected to need the most additional homes

Additional homes needed in each community includes homes to accommodate population, normalize the vacancy rate, and replace lost homes.[3] As seen in Figure 2.2.2, Essex Junction will need the largest number of new homes, totaling about 1,900 by 2050. Milton will need to build 1,400 homes by 2050 and St. Albans Town will need 1,300 additional homes. Alternatively, Rutland City is forecasted to have a decline in housing demand and 900 fewer homes will be required by 2050 compared to the current housing stock.

[3] Replacement of lost homes is included in the number of additional homes required but does not appear in the above chart showing the total number of homes required. For a detailed breakdown of the calculation, see the Appendix.

Figure 2.2.2 Additional Homes Required by 2035 and 2050 by Demand Type



Source: Cambridge Economics' Population and Housing Model

Note: Additional homes reflect the difference between the number of homes required in 2035/2050 and the homes in the start year of 2022 as well as the replacement homes needed over the period. The data labels reflect the cumulative additional homes required by 2035 and 2050.

3. Scenario Analysis

The baseline analysis forecasts housing and population building from existing conditions and trends. This section, on the other hand, demonstrates how these future values might shift under alternative future scenarios.

The two scenarios assessed in this analysis are based on the household growth assumptions outlined in the VHFA Housing Needs Assessment. The assumptions are based around continuous growth in households through 2050, rather than the stagnation and decline shown in the baseline 25 years out. These household growth assumptions are applied (fixed) in CE's PHM to assess the population and housing demand in the five counties and ten communities.

Since the household growth in these two scenarios is a fixed input, the purpose of the scenario analysis is to show what level of net migration would be required to achieve those population levels. In addition, these scenarios help to highlight what the total home requirements in the ten communities would be if these higher household population levels are achieved.

3.1. Methodology

We developed a high and low scenario by adjusting the growth in households to be in line with the assumptions used in the VHFA Housing Needs Assessment. The high growth scenario assumes 1.77% annual growth in households until 2030 and then 1.4% growth through 2050 while the low scenario assumes 1.02% annual growth in households across the entire period.[4]

The model fixes the number of households based on the scenario assumptions for household growth rates. In order to reach these household levels, the model assumes that net migration numbers vary.

Scenario Assumptions

High Scenario assumes 1.77% annual growth in households until 2030 and then 1.4% growth through 2050

Low Scenario assumes 1.02% annual growth in households

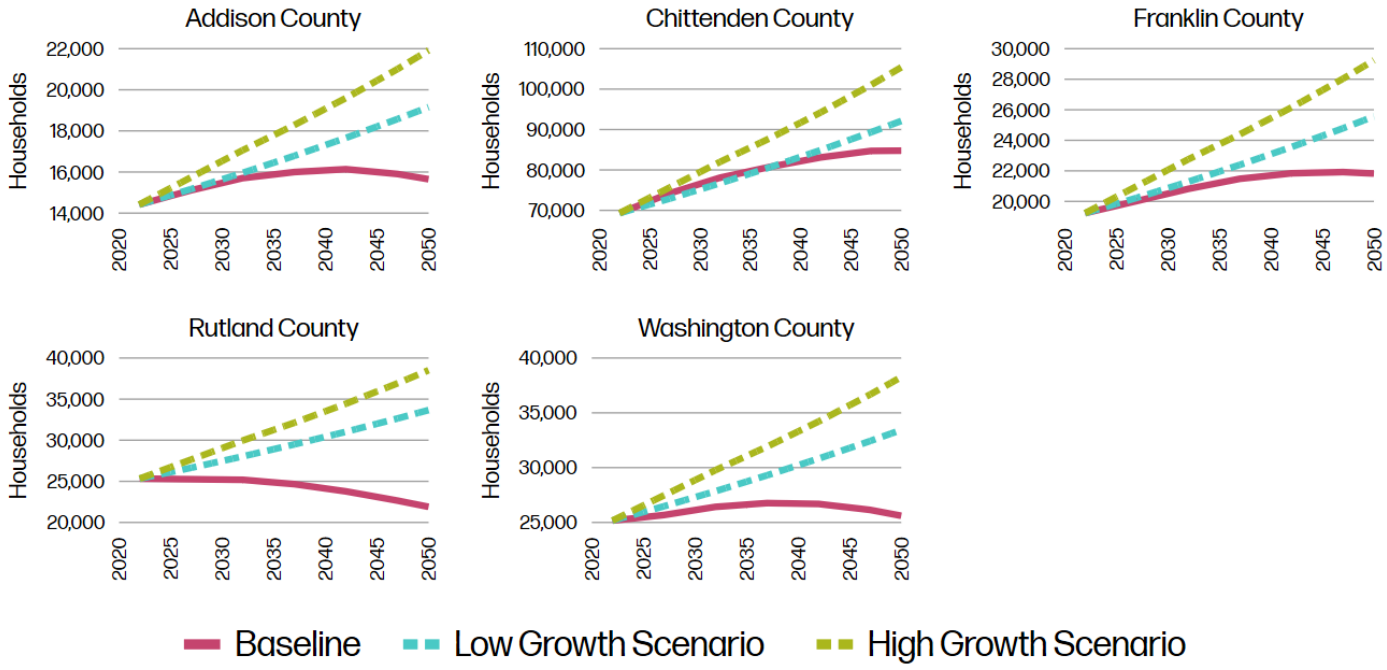
[4] The low growth scenario uses a single growth rate assumption throughout the forecast period. Alternatively, the Housing Needs Assessment analysis uses the 1.02% annual growth assumption from 2025-2030 and then switches to a migration-based assumption (0.49% annual average rate of net migration). As a result, the number of households under this lower scenario differ between the two models.

3.2. County-Level Scenario Results

The total number of households continuously grows in the two scenarios

Given the continuous growth assumptions in the scenarios, the number of households by 2050 under the scenarios is substantially higher than the baseline (see Figure 3.2.1). In Addison, Franklin, and Chittenden counties, the low scenario households estimates are similar to the baseline until about 2035 when the baseline estimates flatten out while the low scenario estimates continue to grow. In Rutland and Washington counties, this stagnation begins earlier, making the baseline consistently lower than the low scenario.

Figure 3.2.1 Total Households in the Baseline and Growth Scenarios by County

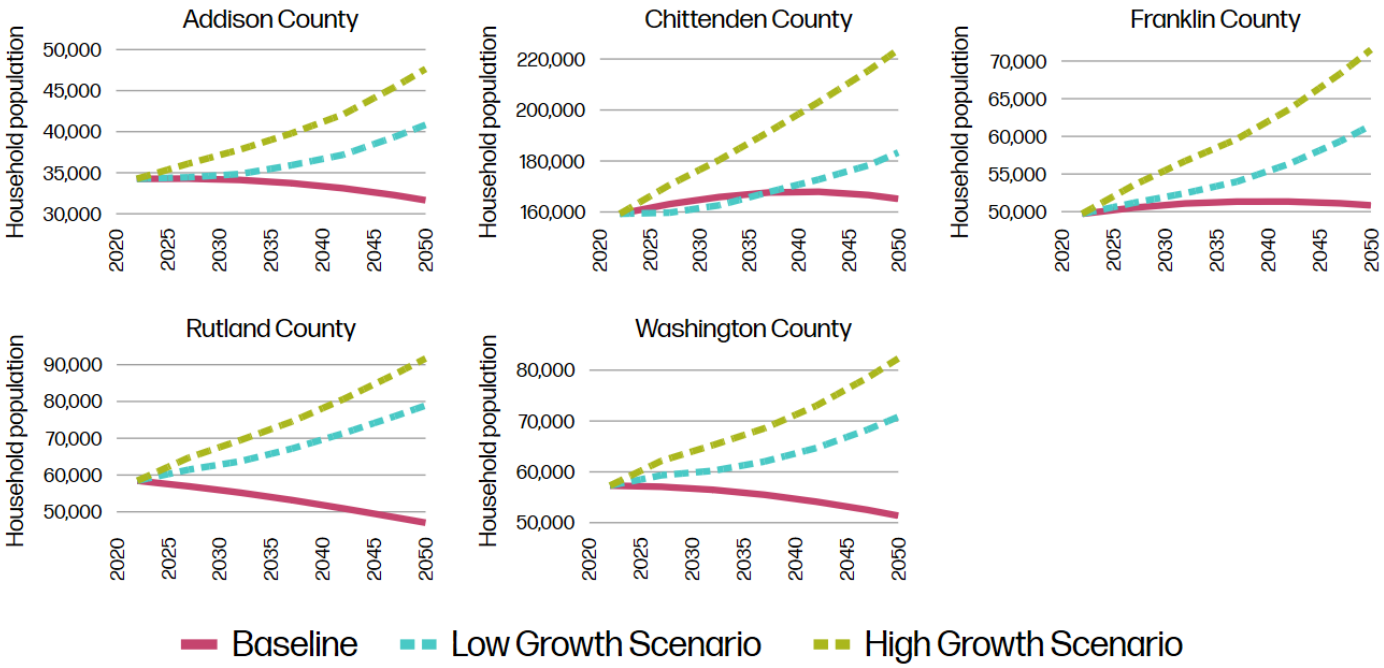


Source: Cambridge Economics' Population and Housing Model

Household population also grows under the scenarios

As seen in Figure 3.2.2, household population follows a similar trend to the number of households in the five counties shown above. However, household population is not linear because it also takes into account the size of each household which changes over time. For example, older people are more likely to live alone than younger residents, so an older population is often associated with smaller household sizes.

Figure 3.2.2 Household Population in the Baseline and Growth Scenarios by County



Source: Cambridge Economics' Population and Housing Model.

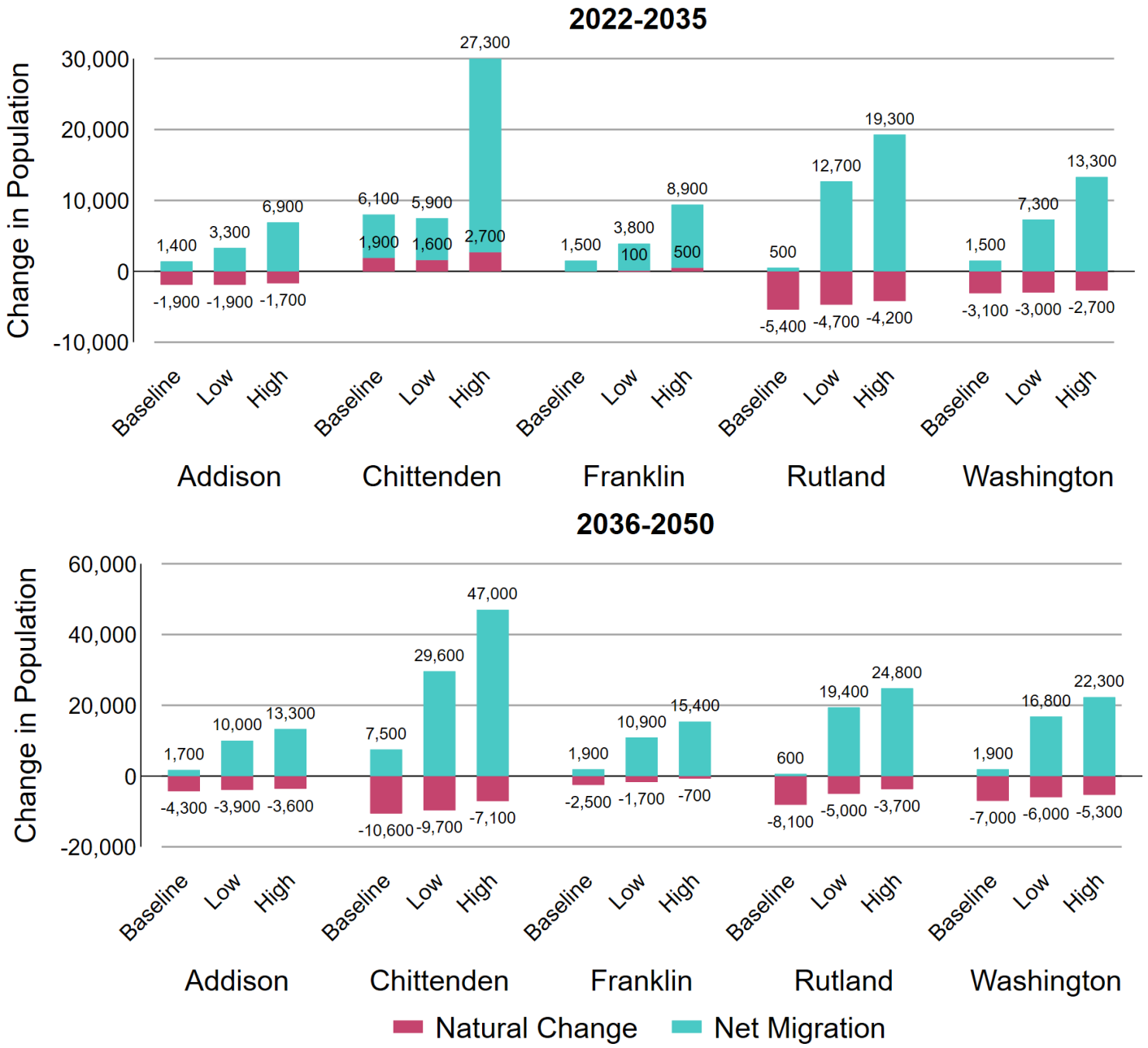
Note: Household population is a subset of the total population, referring to residents who live in households, apartments, or other similar dwelling units (i.e., not group quarters).

Household population growth requires large increases in net migration compared to the baseline

Net migration is the key mechanism used to achieve the household population under the scenarios. As shown in Figure 3.2.3, to achieve the household growth values set out on the scenario assumptions, each county would need to dramatically increase net migration. Between 2022 and 2035, the five counties would need a net migration of 76,000 under the high scenario, a substantial increase from the 11,000 forecasted in the baseline. An even larger increase in net migration is needed accommodate the increase in households under the scenarios between 2036 and 2050 because the scenarios assume sustained growth over time, unlike the baseline scenario that projects declining population by 2050. To achieve the high scenario's growth, the five counties would need a net migration of 123,000 in this later time period.

Although birth and death rates are the same across the scenarios, the natural change in population varies by scenarios because migrants are assumed to be younger than the existing population (more on this below). As a result, the natural change becomes 'less negative' with more births helping to offset the deaths compared to the baseline scenario.

Figure 3.2.3 Components of Change in Household Population in the Baseline and Growth Scenarios by County

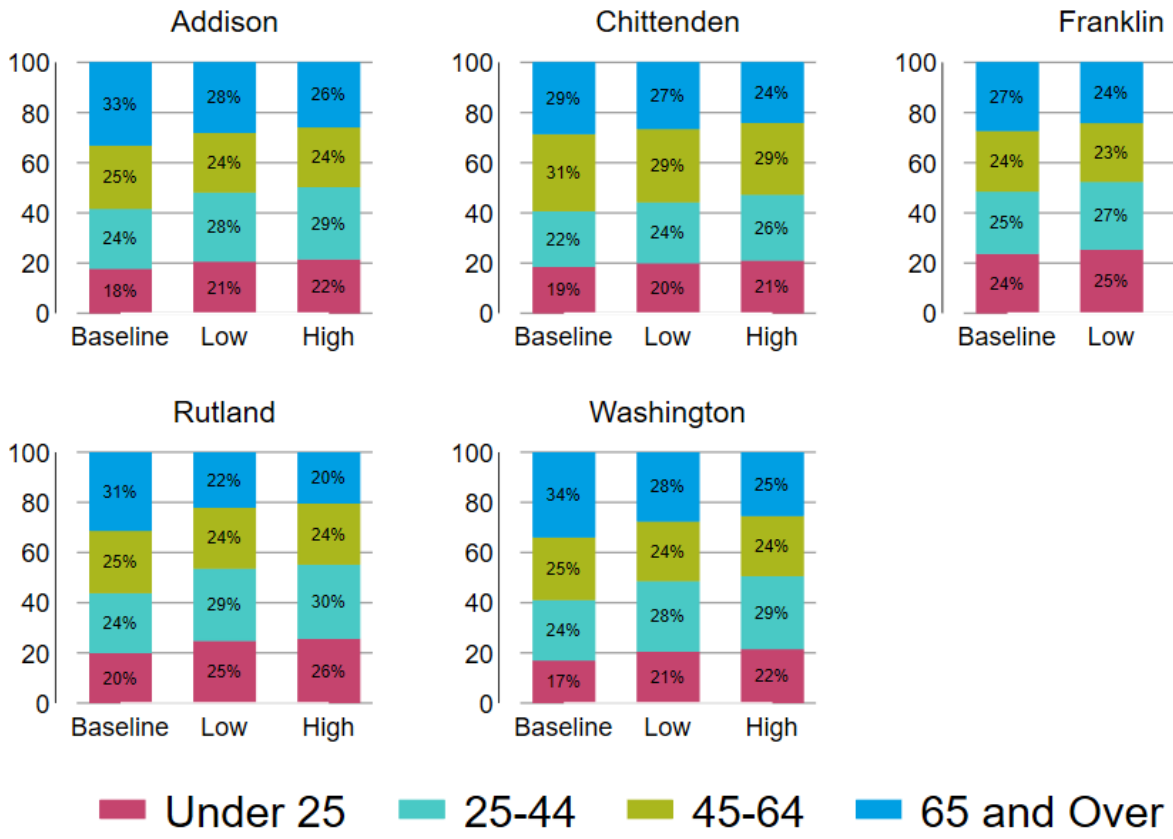


Source: Cambridge Economics' Population and Housing Model

The population is made up of a younger demographic in the scenarios compared to the baseline

As discussed in the methodology, the age distribution of migrants is based on the age distribution of people in the US who have moved. Because Vermont's population is generally older than the rest of the country, and because migrants tend to be a younger demographic, the migrant population in the two scenarios is made up of relatively young people. As shown in Figure 3.2.4, the population in the scenarios trends younger than the baseline population across all counties by 2050.

Figure 3.2.4 Age Distribution of Household Population in 2050 in the Baseline and Growth Scenarios by County



Source: Cambridge Economics' Population and Housing Model

More homes are required under the growth scenarios

To accommodate the growth in households in the two scenarios, the total number of homes would have to increase substantially from the baseline levels by 2050. In the high scenario, a total of 274,000 homes would be required in the five counties by 2050, compared to 198,000 in the baseline and 240,000 in the low scenario (see Table 3.2.1).

Table 3.2.1 Homes Required by 2035 and 2050 in the Baseline and Growth Scenarios by County

County	Existing	Baseline		Low		High	
	2022	2035	2050	2035	2050	2035	2050
Addison	17,500	19,400	19,100	20,100	23,400	21,700	26,800
Chittenden	73,200	86,100	91,500	85,400	99,500	92,400	113,800
Franklin	22,700	25,300	26,000	26,200	30,500	28,300	34,900
Rutland	33,900	33,600	29,600	39,000	45,400	42,200	52,000
Washington	30,700	32,700	31,500	35,300	41,100	38,200	47,000
Total	**178,000**	**197,100**	**197,700**	**206,000**	**239,900**	**222,800**	**274,500**

Source: Cambridge Economics' Population and Housing Model

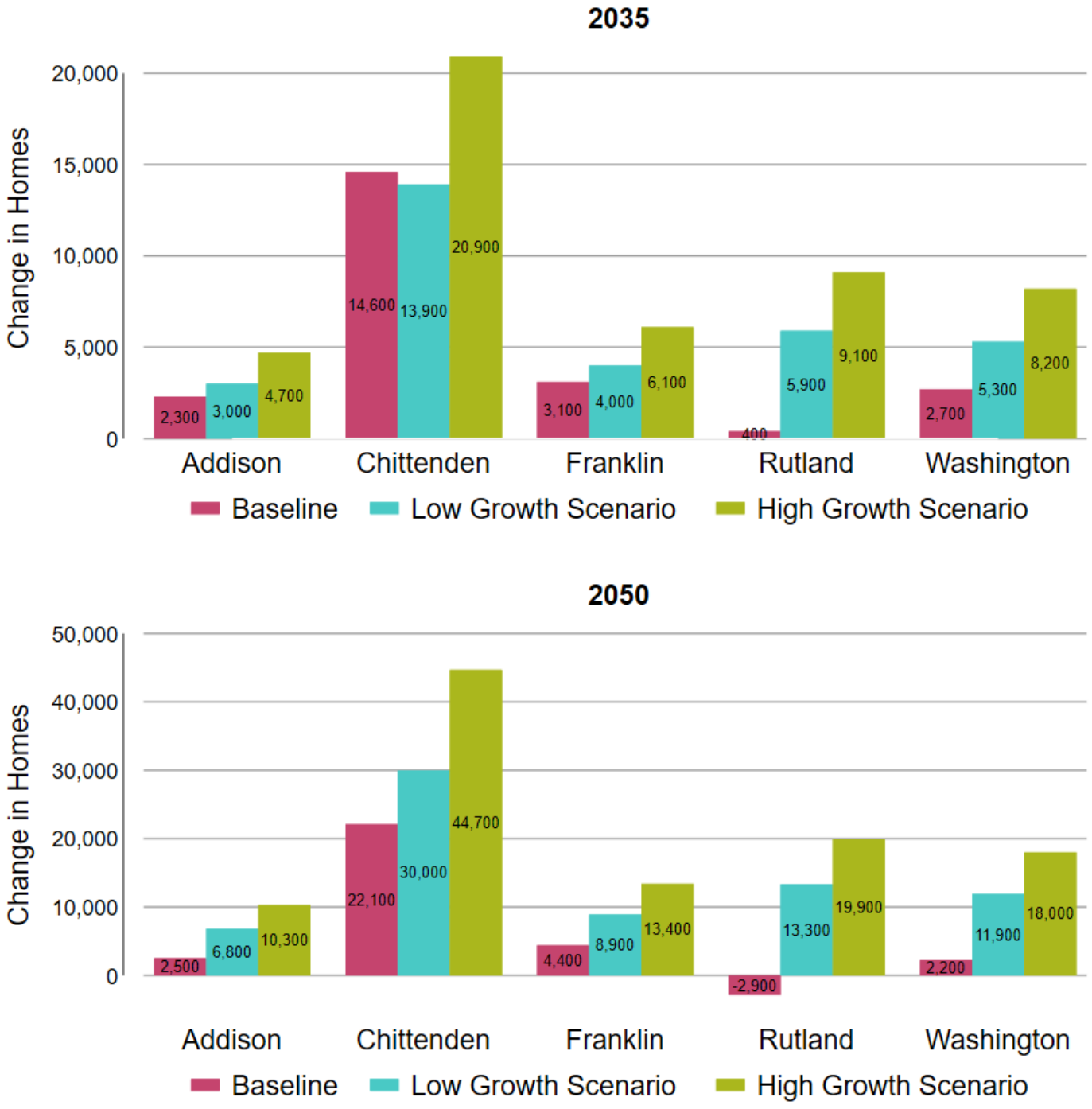
Note: This table shows the total homes required by 2035 and 2050 and does not include additional homes needed to replace lost homes.

The high scenario growth would require 94,000 additional homes in the five counties by 2050

The total number of homes shown above is driven by the change in population and the number of homes needed to normalize the vacancy rate. However, when considering the additional homes needed in each community, it is important to also consider the natural loss of the current housing stock. Therefore, the additional homes required, shown in Figure 3.2.5, includes homes needed to accommodate the population and address the deficit (which are considered the totals above) but also includes replacement of lost homes.

Under the high scenario, the five counties would need to build over 105,000 homes between 2022 and 2050, compared to 28,000 in the baseline and 70,000 in the low scenario. Most of this growth comes from Chittenden County, which would require over 44,000 additional homes under the high growth scenario.

Figure 3.2.5 Additional Homes Required by 2035 and 2050 in the Baseline and Growth Scenarios by County



Source: Cambridge Economics' Population and Housing Model

Note: Additional homes reflect the difference between the number of homes required in 2035/2050 and the homes in the start year of 2022 as well as the replacement homes needed over the period.

3.3. Community-Level Scenario Results

65,000 total homes required in the ten communities under the high scenario

Like in the baseline, additional homes are distributed to communities based on the assumed share of the county's new housing development in the community. Given the continuous growth assumptions in the scenarios, a larger number of homes would be required in all communities compared to the baseline. As seen in Table 3.3.1, under the high scenario, the ten communities would require a total of 65,000 homes, compared to 54,000 in the low scenario and 40,000 in the baseline. About a quarter of the total homes would be in Rutland City, the largest of the communities.

Table 3.3.1 Homes Required by 2035 and 2050 in the Baseline and Growth Scenarios by Community

County	Community	Existing	Baseline		Low		High	
		2022	2035	2050	2035	2050	2035	2050
Addison	Ferrisburgh	1,500	1,800	1,700	1,800	2,200	2,000	2,600
	Middlebury	3,300	4,000	3,900	4,300	5,500	4,900	6,800
	Vergennes	1,200	1,500	1,400	1,600	2,100	1,800	2,600
Chittenden	Essex Junction	5,000	6,100	6,600	6,100	7,300	6,700	8,600
	Milton	4,200	5,000	5,400	5,000	5,900	5,500	6,900
Franklin	St. Albans Town	3,200	4,100	4,400	4,400	5,900	5,200	7,400
Rutland	Rutland City	10,400	10,300	9,000	12,000	13,900	12,900	16,000
Washington	Barre City	4,100	4,500	4,200	5,000	6,200	5,600	7,300
	Berlin	1,200	1,400	1,300	1,600	2,000	1,800	2,500
	Northfield	2,000	2,200	2,100	2,500	3,100	2,800	3,700
Total		**36,100**	**40,900**	**40,000**	**44,300**	**54,100**	**49,200**	**64,400**

Source: Cambridge Economics' Population and Housing Model

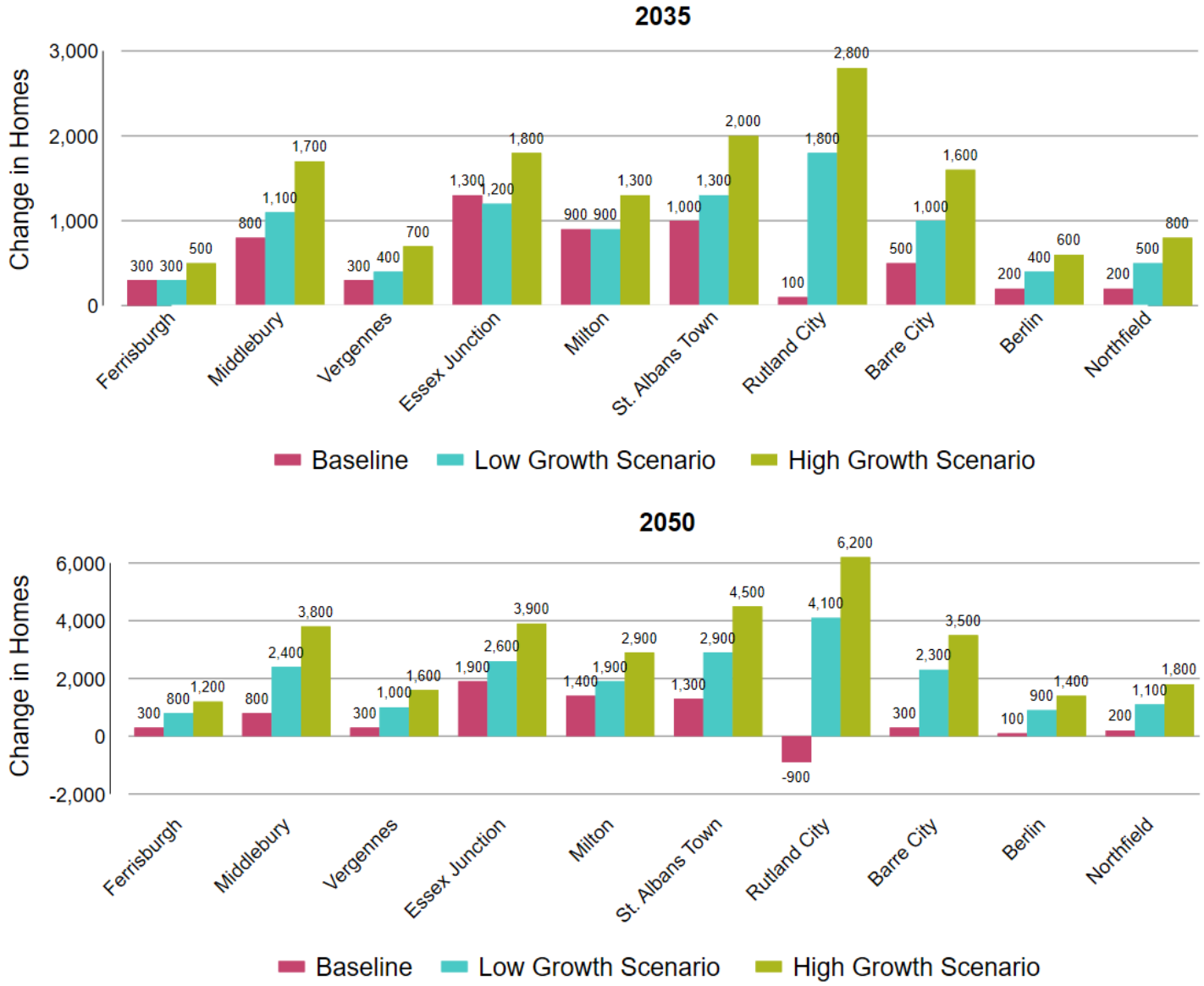
Note: This table shows the total homes required by 2035 and 2050 and does not include additional homes needed to replace lost homes

Under the growth scenarios, additional homes would be required in all ten communities

Additional homes need in each community includes homes needed to accommodate population, normalize the vacancy rate, and replace lost homes.[5] The contrast between the continuous growth under the scenarios and the baseline predictions is particularly stark in Rutland City, which would need 6,200 additional homes by 2050 under the high growth scenario rather than the decline of over 900 homes seen in the baseline (see Figure 3.3.1). Essex Junction and St. Albans Town would require 3,900 and 4,500, respectively, by 2050 under the high scenario. In total, the ten communities would need to build over 20,000 additional homes by 2050 in the low scenario and 31,000 in the high scenario.

[5] Replacement of lost homes is included in the number of additional homes required but does not appear in the above chart showing the total number of homes required. For a detailed breakdown of the calculation, see the Appendix.

Figure 3.3.1 Additional Homes Required by 2035 and 2050 in the Baseline and Growth Scenarios by Community



Source: Cambridge Economics' Population and Housing Model

Note: Additional homes reflect the difference between the number of homes required in 2035/2050 and the homes in the start year of 2022 as well as the replacement homes needed over the period.

4. Summary of Findings

- **The baseline forecast (based on current trends) shows stagnant or declining regional population in the forecast period**. The household population in Chittenden and Franklin counties is projected to increase until around 2042 and then start a slight downward trend. Meanwhile, the total household population in Addison County, Washington County, and Rutland County declines in the baseline forecast over the entire period of 2022 to 2050.

- **The population decline is driven by the aging population**. Natural change is negative (i.e., there are more deaths than births) in Addison, Rutland, and Washington counties between 2022 and 2035 and all counties between 2036 and 2050.

- **An aging population can increase demand for housing since older people tend to live alone and therefore make up more single-person households**. In the baseline scenario, there will be more households in 2035 than in 2022 in all counties except Rutland. By 2050, the population decline offsets this dynamic and results in fewer households in Addison and Washington counties, but Chittenden and Franklin counties continue to see growth.

- **The baseline forecast suggests that more homes will be required in most counties by 2035 to accommodate population and address the deficit**. By 2050, Addison and Washington counties will require slightly fewer homes compared to 2035, with Rutland's trend leading to fewer homes by 2035. Chittenden and Franklin counties will require continued growth in homes through to 2050, though this growth slows over time. Nevertheless, when replacement homes are considered, all counties will require additional homes by 2050, except for Rutland.

- **The scenarios demonstrate population and housing trends if households grew over the entire forecast period**. The high growth scenario assumes 1.77% annual growth in households until 2030 and then 1.4% growth through 2050 while the low scenario assumes 1.02% annual growth in households across the entire period.

- **A substantial increase in net migration would be needed to support continuous growth in households**. Between 2022 and 2035, the five counties would need a net migration of 76,000 under the high scenario, a substantial increase from the 11,000 forecasted in the baseline. An even larger increase in net migration (123,000) is needed to accommodate the household growth between 2036 and 2050, unlike the baseline scenario that projects declining population by 2050.

- **The high scenario growth would require 94,000 additional homes in the five counties by 2050, compared to 21,000 in the baseline and 63,000 in the low scenario**. If the number of households grew according to the two scenarios, 20,000 to 31,000 additional homes would be required in the participating communities.

Appendix

Table A.1 Total and Additional Homes Required by 2035 in the Baseline and Growth Scenarios

Community	Existing Housing Stock (2022)	Total Homes Required by 2035			Additional Homes Needed For Population & Deficit, 2022 to 2035			Replacement Homes Required, 2022 to 2035			Total Additional Homes Needed, 2022 to 2035		
		Baseline	Low	High	Baseline	Low	High	Baseline	Low	High	Baseline	Low	High
Addison County	**17,455**	**19,389**	**20,090**	**21,725**	**1,934**	**2,635**	**4,270**	**390**	**395**	**413**	**2,324**	**3,030**	**4,683**
Ferrisburgh	1,521	1,753	1,837	2,033	232	316	512	32	33	35	264	349	547
Middlebury	3,287	4,022	4,288	4,910	735	1,001	1,623	72	75	81	807	1,076	1,704
Vergennes	1,153	1,462	1,575	1,836	309	422	683	26	27	30	335	449	713
Chittenden County	**73,209**	**86,084**	**85,440**	**92,392**	**12,875**	**12,231**	**19,183**	**1,695**	**1,674**	**1,751**	**14,570**	**13,905**	**20,934**
Essex Junction	4,970	6,129	6,071	6,696	1,159	1,101	1,726	109	108	115	1,268	1,209	1,842
Milton	4,213	5,050	5,008	5,460	837	795	1,247	91	91	95	928	886	1,342
Franklin County	**22,714**	**25,290**	**26,164**	**28,293**	**2,576**	**3,450**	**5,579**	**506**	**514**	**538**	**3,082**	**3,964**	**6,117**
St. Albans Town	3,198	4,100	4,406	5,151	902	1,208	1,953	72	75	83	974	1,283	2,036
Rutland County	**33,906**	**33,564**	**39,022**	**42,198**	**(342)**	**5,116**	**8,292**	**713**	**766**	**802**	**371**	**5,883**	**9,093**
Rutland City	10,367	10,261	11,953	12,937	(106)	1,586	2,570	201	219	229	95	1,805	2,800
Washington County	**30,697**	**32,715**	**35,288**	**38,158**	**2,018**	**4,591**	**7,461**	**668**	**693**	**725**	**2,686**	**5,284**	**8,186**
Barre City	4,088	4,492	5,006	5,580	404	918	1,492	84	89	95	488	1,007	1,588
Berlin	1,204	1,365	1,571	1,801	161	367	597	25	27	30	187	395	627
Northfield	2,029	2,231	2,488	2,775	202	459	746	42	44	47	244	503	794

Source: Cambridge Economics' Population and Housing Model

Table A.2 Total and Additional Homes Required by 2050 in the Baseline and Growth Scenarios

Community	Existing Housing Stock (2022)	Total Homes Required by 2050			Additional Homes Needed For Population & Deficit, 2022 to 2050			Replacement Homes Required, 2022 to 2050			Total Additional Homes Needed, 2022 to 2050		
		Baseline	Low	High	Baseline	Low	High	Baseline	Low	High	Baseline	Low	High
Addison County	**17,455**	**19,110**	**23,394**	**26,763**	**1,655**	**5,939**	**9,308**	**829**	**885**	**960**	**2,484**	**6,824**	**10,268**
Ferrisburgh	1,521	1,720	2,234	2,638	199	713	1,117	71	79	88	270	792	1,205
Middlebury	3,287	3,916	5,544	6,824	629	2,257	3,537	161	186	215	790	2,443	3,752
Vergennes	1,153	1,418	2,103	2,642	265	950	1,489	58	69	81	323	1,019	1,570
Chittenden County	**73,209**	**91,549**	**99,489**	**113,816**	**18,340**	**26,280**	**40,607**	**3,714**	**3,760**	**4,078**	**22,055**	**30,041**	**44,685**
Essex Junction	4,970	6,621	7,335	8,625	1,651	2,365	3,655	253	260	289	1,904	2,625	3,944
Milton	4,213	5,405	5,921	6,852	1,192	1,708	2,639	209	214	235	1,401	1,922	2,874
Franklin County	**22,714**	**26,014**	**30,466**	**34,854**	**3,300**	**7,752**	**12,140**	**1,089**	**1,153**	**1,250**	**4,389**	**8,905**	**13,390**
St. Albans Town	3,198	4,353	5,911	7,447	1,155	2,713	4,249	167	192	226	1,322	2,906	4,475
Rutland County	**33,906**	**29,555**	**45,438**	**51,982**	**(4,351)**	**11,532**	**18,076**	**1,426**	**1,720**	**1,865**	**(2,925)**	**13,252**	**19,941**
Rutland City	10,367	9,018	13,942	15,971	(1,349)	3,575	5,604	417	512	557	(932)	4,087	6,160
Washington County	**30,697**	**31,462**	**41,089**	**47,006**	**765**	**10,392**	**16,309**	**1,398**	**1,555**	**1,686**	**2,162**	**11,948**	**17,995**
Barre City	4,088	4,241	6,166	7,350	153	2,078	3,262	182	216	242	335	2,294	3,504
Berlin	1,204	1,265	2,035	2,509	61	831	1,305	55	68	79	116	900	1,383
Northfield	2,029	2,105	3,068	3,660	76	1,039	1,631	90	107	120	167	1,147	1,751

Source: Cambridge Economics' Population and Housing Model