



STRATEGIC ECONOMIC DEVELOPMENT ASSESSMENT

Town of Highgate Infrastructure Expansion Study

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I. Background and Context

The overriding objective of this water/wastewater infrastructure enhancement assessment project is to work towards developing a coordinated and strategic approach for utilizing the development of an expanded/enhanced water/wastewater infrastructure resource in the area of Vermont Route 78 and the Franklin County Airport in the Town of Highgate. The purpose is to devise a practical way to leverage current strategic economic development efforts in the Town and region that would make progress towards increasing the performance and resiliency of the Town’s and surrounding region’s economic base.

The first step in this assessment is to undertake an “existing conditions analysis” of circumstances on the ground through a variety of approaches, including an analysis of the various socioeconomic statistical data related to the Town and region’s evolving economic structure and their recent performance.¹ The objective is to first “let the data objectively speak” for the purposes of identifying key issues related to what may be of significance to this effort. The information below represents an overview of available economic, demographic, and other data of significance via a “desk-top” review and analysis,² where the findings of the statistical analysis and their possible implications will be further synthesized for the purposes of this assessment when complete.

The data and charts below highlight the initial, key findings of the desktop research and analysis work that are potentially significant to this infrastructure expansion assessment project. Although the results of the initial water/waste water survey of existing property owners in the area where this infrastructure expansion is being actively considered were initially inconclusive (and more data gathering and research appears needed), the labor market and other data regarding the underlying structure and recent performance of the regional economy have been more revealing. These results are presented in Sections II. through V. below.

At this juncture, undertaking such an assessment of the Town’s and region’s economic structure and recent performance is

A WORD ABOUT COVID-19

As this study was nearing its conclusion, the COVID-19 pandemic emerged as a once per hundred years challenge to the economy and our national, state, and municipal leaders. Not surprisingly, with the onset of recession, there was a lot of concern expressed about the timing of this effort...was it in fact prudent in these uncertain times to even undertake such a project? Part of the answer to that question is grounded in the recognition that the COVID-19 pandemic is at its heart a public health issue. In addition, the overwhelming majority of the related economic disruptions were a direct effect of the public health measures taken to slow the spread of the disease. Now, as the state succeeds in addressing the health aspects of the pandemic and moves back along the path to “a sense of normalcy,” there will be new challenges and opportunities. This study is an effort to more favorably position the Town to take advantage of those new opportunities toward a better, more sustainable economic future—once the immediate public health challenges have been resolved.

¹ As well as conducting an initial property owner survey of their needs/attitudes towards a possible expansion of water and wastewater in a defined area in and around the Franklin County Airport.

² Which will be supplemented in the near future will be followed up with a number of targeted conversations-interviews with stakeholders in the Town and region.

important for two general reasons: (1) it is an important starting point for the process of reaching a consensus on where the Town and region want to go economically in the future, and (2) how those objectives might be most efficiently and effectively achieved. The objective of this part of the research is to lay the strategic groundwork for moving forward with whatever approach is decided upon, and to ascertain—at least in general terms—the likely resource allocations and strategic partnerships among the Town’s and region’s stakeholders that are likely required to effectively move the Town and the region towards meeting the collaboratively articulated goals for this effort.

Strategic economic development efforts of this kind are vitally important to building a high performance and resilient local and regional economic base. Strategic assessment efforts like this assessment are also important for creating an environment where continuous and sustainable improvements in the internal workings-functioning of the local and regional economies can be achieved over both near-term and long-term time horizons.

Devising and providing strategic and measured support-assistance undertaken to support the “strategic development” of the local and regional economic base is an approach that is well known to economic development and community development professionals-stakeholders. Undertaking such an active (versus passive) approach to strategic economic development such as this is important for at least two reasons. First, it is generally understood that strategic assistance initiatives are needed to support the local and regional economic base because the economy must continually evolve to meet on-going changes and the challenges those changes entail in order to continually renew itself over time. This is because new firms/growing firms and new sectors/growing sectors in a local or regional economic base are needed to replace or off-set the firms and sectors of the economic base that may be declining and even potentially be lost as an economic “natural selection process” among firms and sectors within the local and regional economy for individual firms and sectors transpires over time. Unless a local and regional economy can on-balance successfully and renew and refresh itself with enough new entrants into and growing sectors to replace the parts of the economy that are failing and/or even dying, it would be difficult for the local and regional economy to achieve the degree of sustained improvement and resiliency that is important to providing for an acceptable quality-of-life for a locality’s or a region’s residents.

The second reason why assistance for “strategic development” is necessary is because the resources provided by a healthy, sustainable, and resilient economy is important to providing the resources needed to fund a just society and decent quality-of-life. A sustained, high-performance local and regional economy is a crucial part of what is required to provide the public and private resources that are needed to fund, among others: (1) a humane social safety net, (2) high quality public services, (3) the protection of our natural amenities and environmental resources, and (4) access to economic opportunity. This interrelated resource provision-public investments funding linkage to the performance of the economy has been articulated through the years as the “Circle of Prosperity.” Within the region, the Franklin County Industrial Development Corporation back in the early 2000s³ presented an initial “Circle of Prosperity” as part of its strategic economic

³ The “Circle of Prosperity” was a part of Franklin County Industrial Development Corporation strategic plans dating back as far as 2003. More recently, an updated “Circle of Prosperity” was presented as part of the regional ECOS Plan as articulated by the Chittenden County Regional Planning Commission for northwest Vermont. The concept was initially introduced in Vermont by the Vermont Business Roundtable’s economic development policy assessment back in 1997.

development plan at the time. Recognizing the financial inter-relatedness between on-going economic success and the resource needs of enjoying a high and sustainable quality of life are fundamental to achieving long-term and sustainable prosperity.

Every local or regional economic base has a finite amount of resources available to support the growth and resiliency of its economy. From a strategic economic development perspective, and more specifically for the purposes of this current water/wastewater assessment study, the above means that this effort seeks to articulate a recognition that “not all economic development opportunities are created equal.” In other words, there are some strategic economic development opportunities for the Town and region that may offer a higher rate of economic return versus others if they were to gain access to utilize a part of the Town’s/region’s finite water/wastewater infrastructure asset base. The objective of this part of the overall water/wastewater infrastructure assessment-planning effort is to use research and analysis to first identify and develop a hierarchy of strategic development options that will enable the Town/region to distinguish between potential strategic economic development opportunities that may be facilitated by this potential infrastructure expansion. The main goal being to develop a prioritized list of strategic development opportunities—if the infrastructure expansion was developed—that would delineate between opportunities that offer a higher rate of economic return versus those opportunities that may not provide as high an economic return potential to the Town and region.

The overriding goal would be to develop a useable typology that will enable strategic economic development professionals-stakeholders to differentiate between higher return and lower return strategic opportunities that might be pursued (or perhaps not pursued) given the region’s valuable and finite existing and potential (e.g. to-be-developed) water/wastewater built-resource. In the alternative, strategic economic development professionals-stakeholders would have no systemic way to differentiate between different opportunities as they present themselves.

Having a fully researched, hierarchical matrix of “best fit,” “good fit,” and/or “poor fit” strategic industries is one way for Town and regional economic development professionals and stakeholders to be able to thoughtfully differentiate between opportunities. As such, this effort has the objective to develop this hierarchy based on objective rate of economic return metrics that could be used to assure the wise, strategic use of this potential water/wastewater infrastructure expansion over time. Without such guidance, the Town and region risk the underutilization of this important built infrastructure asset that otherwise has the potential to offer great promise for increasing the long-term, sustained high performance and resiliency of the Town and regional economic base.

II. Geography and Land of the Town of Highgate and Franklin County

Franklin County is located in the northwest corner of the State of Vermont, bounded by Lake Champlain and the Islands to the west, the Canadian Province of Quebec to the north, the Vermont County of Orleans to the east, and the Counties of Chittenden and Lamoille to the south. Situated within Franklin County, the Town of Highgate is itself located to the northwest between Lake Champlain, the Canadian border, and the Towns of Swanton, Sheldon, and Franklin.

Much of the County is covered with mixed forests and gentle rolling farmlands rising up to the Green Mountains in the east, some with elevations of more than 3,000 feet above sea level. Big Jay is the highest mountain (3,786 feet) in the County near the border with Orleans County. The Missisquoi River and its tributaries drain a large portion of the County and flow into Lake Champlain near the Canadian border. Lake Carmi is the largest body of water contained within the County and is a prominent outdoor recreational and camping area.

North-South transportation to and from the Canadian border is serviced primarily by Interstate-89, which runs south to Burlington before cutting across the State eastward through Montpelier into New Hampshire, and Route 7 which runs south to Burlington and continues south through Rutland toward Massachusetts and Connecticut. Numerous interconnected State highways crisscross the County (including the immediate area within the Town) allowing for efficient travel between rural communities not connected to the interstate highway system. There are fifteen border crossings between Vermont and Canada, six of which are in Franklin County. Highgate—with the U.S. terminus of Interstate-89—has the highest volume of border crossings in Vermont, averaging 4,000 crossings per day, with additional crossings in the Town of Franklin, the Town of Berkshire, and three crossings in the Town of Richford.

The only rail line in Franklin County, New England Central Railroad, traverses the County from the border with Quebec toward Essex Junction where it connects with the Vermont Railway and continues south. The line is owned by Genesee & Wyoming Inc., the nation's largest short-line railroad holding company with over 120 (105 in North America) subsidiary railroads, operating over 13,000 miles of track in North America. Amtrak operates the *Vermont* passenger rail services on a portion of the line, linking St. Albans to Essex Junction and continuing south through White River Junction, and connecting to major cities along the eastern seaboard including Hartford; New York City; Philadelphia; Baltimore; and Washington D.C.

Figure 1. Franklin County, Vermont

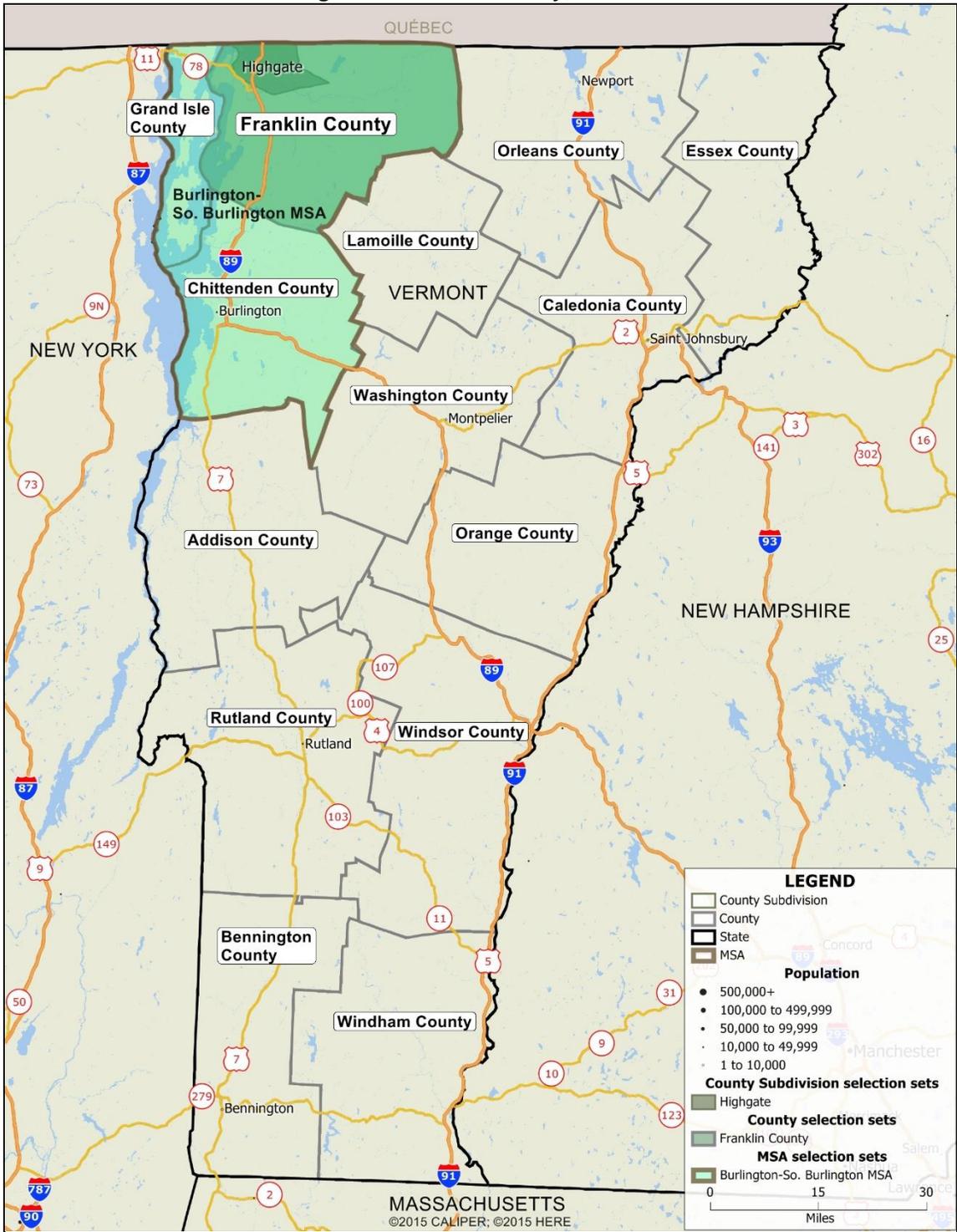
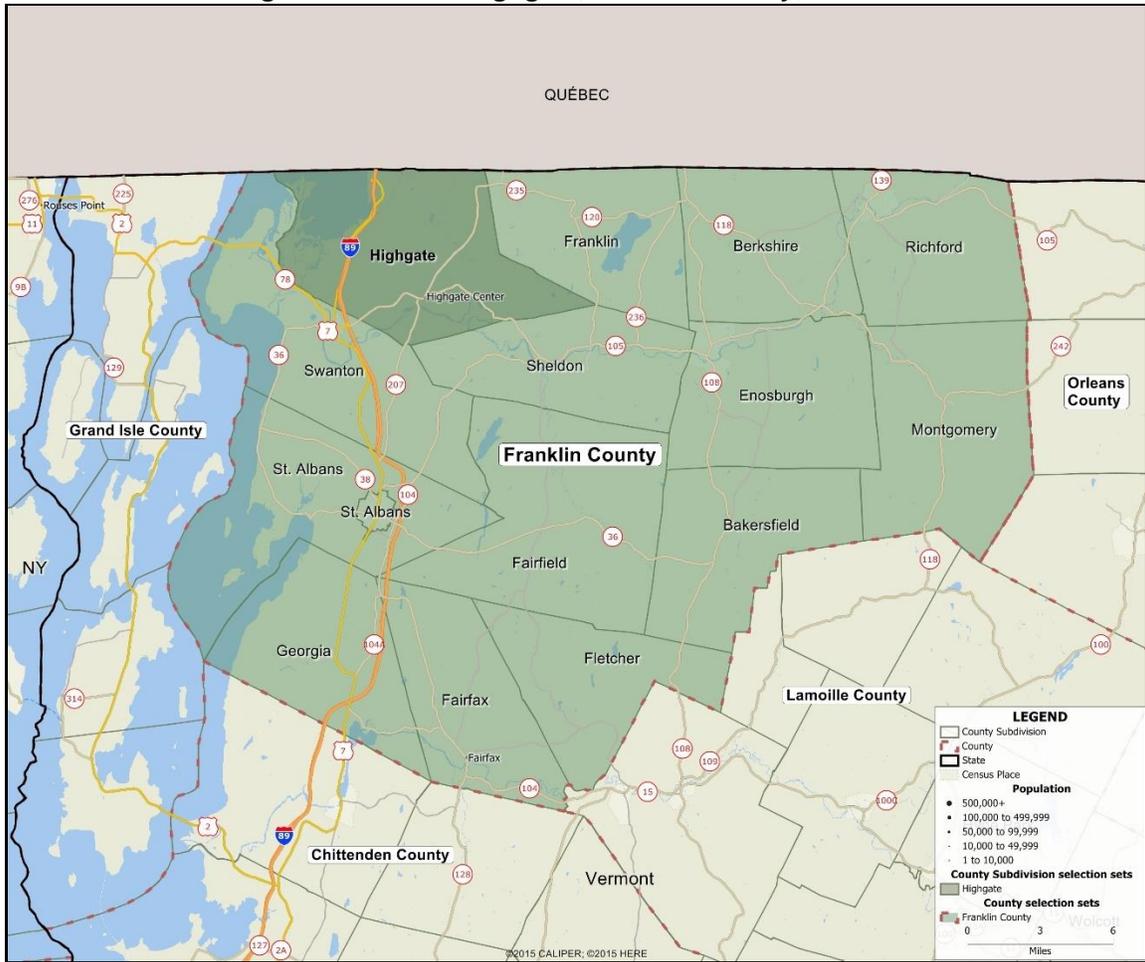


Figure 2: Town of Highgate, Franklin County, Vermont



Franklin County State Airport is a public-use category 3 airport⁴ located about three miles west of the central business district of the Town of Highgate and is owned by the State of Vermont. The primary runway is 3,000 feet with design for a runway extension of additional 1,000 feet; along with improved apron, new fuel farm, and additional hanger area development.⁵

⁴ According to Vermont Agency of Transportation, Category 3 Airports can accommodate jet plane activity during a broader range of weather conditions and serve as regional gateways for such activities as corporate aviation, charter services, and small-feeder operations.

⁵ State of Vermont Agency of Transportation. Vermont Airport System Plan Update: Plan Update and Overview Process. Public Meeting Presentation in Highgate, October 15, 2018

https://vtrans.vermont.gov/sites/aot/files/aviation/pdf/Public%20Meetings%20Presentation-Franklin_10-15-18.pdf

<https://vtrans.vermont.gov/sites/aot/files/aviation/pdf/ASP%20Highgate%20-%202010-15-18.pdf>

Figure 3. Franklin County State Airport, Town of Highgate: Study Area for Infrastructure Expansion



From an economic development perspective, the Town and the County are ideally situated to take advantage of its proximity to Canada and the Province of Quebec to support Canadian business who seek to gain a foothold in the U.S. market. The North American Free Trade Agreement (NAFTA) negotiated and adopted roughly 30 years ago provided the backdrop for recent rounds of U.S.-Canadian business cooperation. The recently re-negotiated U.S.-Mexico-Canada Trade Agreement (USMCA) offers the Town and region an opportunity to continue, and perhaps even strengthen, their current ties to neighboring businesses in Canada seeking access to the U.S. marketplace. Although U.S. trade policy remains uncertain, this issue may “cut both ways” – simultaneously increasing the risk of developing additional cross-border business relationships— while at the same time possibly making them all the more important to establish (e.g. in case domestic U.S. sourcing requirements increase).

There have been a number of on-going regional and State strategic economic development efforts that have emphasized the active pursuit of closer ties with Canadian businesses seeking greater access to U.S. markets.⁶ We expect this activity to continue and potentially intensify over the next ten to twenty years. This would make the potential development of a number of “appropriately infra-structured” parcels in and around the Franklin County Airport facility a well-timed venture—if it could be completed within a reasonable time frame. Such a strategic effort offers the possibility of substantial economic benefits to the Town, region, and the State as a whole, as the number of suitable, potential economic development sites has recently decreased in the northwestern region of the State.

⁶ A recent economic development initiative of the Lake Champlain Regional Chamber of Commerce—Vermont-Quebec Enterprise Initiative (VQEI) is focused on bilateral, value-added business development; in particular, for Quebec-based companies considering expansion opportunities across the border in Vermont. See <https://www.vermont.org/chamber/programs-affiliations/economic-development/vqei/>.

III. Population

Within the 634-square-mile area of Franklin County resides a population of 49,421 residents, with an implied population density of approximately 78 people per square mile in 2018. In comparison, the State of Vermont and United States had a 2018 population density of approximately 68 people per square mile and 93 people per square mile, respectively.

Table 1. Population Change by Selected Jurisdictions, 2000, 2010, and 2018

Jurisdiction State/Metro/County/Town	2000	2010	2018	2010-2018	2010-2018
				Absolute Change	Percent Change
Vermont	609,618	625,880	626,299	419	0.1%
Burlington-South Burlington Metro Area	199,600	211,534	221,083	9,549	4.5%
Chittenden County	147,161	156,773	164,572	7,799	5.0%
Grand Isle County	6,909	6,948	7,090	142	2.0%
Franklin County	45,530	47,813	49,421	1,608	3.4%
Bakersfield, Town	1,222	1,324	1,342	18	1.4%
Berkshire, Town	1,391	1,695	1,762	67	4.0%
Enosburgh, Town	2,809	2,778	2,771	-7	-0.3%
Fairfax, Town	3,567	4,295	4,770	475	11.1%
Fairfield, Town	1,781	1,900	1,934	34	1.8%
Fletcher, Town	1,170	1,281	1,339	58	4.5%
Franklin, Town	1,278	1,421	1,434	13	0.9%
Georgia, Town	4,328	4,523	4,771	248	5.5%
Highgate, Town	3,392	3,540	3,673	133	3.8%
Montgomery, Town	991	1,202	1,206	4	0.3%
Richford, Town	2,327	2,307	2,308	1	0.0%
St. Albans, City	7,446	6,918	6,813	-105	-1.5%
St. Albans, Town	5,619	6,032	6,492	460	7.6%
Sheldon, Town	2,000	2,172	2,230	58	2.7%
Swanton, Town	6,209	6,425	6,576	151	2.4%

Notes: Official population estimates as of July 1 of each year. Burlington-South Burlington Metro Area is comprised of Chittenden, Grand Isle and Franklin Counties.

Sources: Census Bureau, American FactFinder *Prepared by Economic & Policy Resources, Inc.*

Franklin County is part of the Burlington-South Burlington Metropolitan Statistical Area (“Burlington MSA”), which also includes Chittenden and Grand Isle Counties.⁷ While both Chittenden and Franklin Counties have comparable land areas, their respective regional population shares differ. As of July 1, 2018, Chittenden County held the largest share of the Burlington MSA’s regional population with 74.4 percent, corresponding to 164,572 people (Table 1). Franklin County comprised most of the remaining share at 24.4 percent (or 49,421 residents). Grand Isle County with a population of 7,090 residents, accounted for only 3.2 percent of the total regional population.

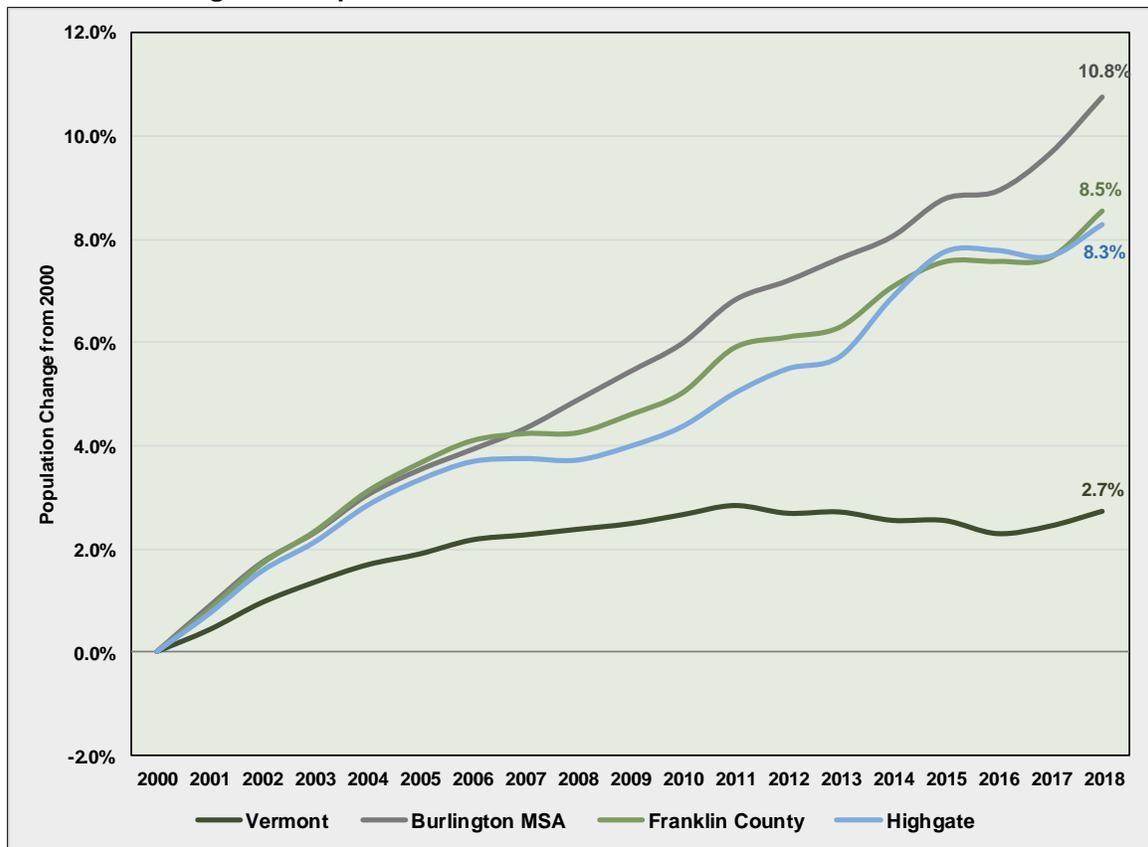
There are 14 Towns and one City within Franklin County. According to the 2018 estimates of the U.S. Census Bureau, the largest population centers in Franklin County are:

⁷ An MSA area is defined by the U.S. Office of Management and Budget (of the Office of the President) as generally consisting of a core urban center—Burlington and South Burlington, and surrounding communities that have a high degree of economic and social integration with that core center.

- St. Albans City (6,813 residents);
- Swanton (6,576 residents);
- St. Albans Town (6,492 residents);
- Georgia (4,771 residents);
- Fairfax (4,770 residents); and
- **Highgate (3,673 residents).**

All of these prominent centers are located near Lake Champlain or within the I-89 corridor. With the exception of St. Albans City, these major population centers grew faster than other municipalities in the County and relative to many municipalities throughout the State overall. Combined, these six municipalities accounted for two-thirds of the population but 85 percent of the population growth in the County overall.

Figure 4. Population Growth in Northwest Vermont Since 2000



Source: U.S. Census Bureau

Prepared by: Economic & Policy Resources, Inc.

Population growth is occurring within these larger centers in the County for a variety of reasons including relative housing price affordability (see below), proximity to employment centers, access to quality health care, quality educational opportunities, a “sense of community,” and other quality of life factors (e.g. natural and recreational amenities). While the rate of population growth in Vermont has slowed since 2000—and estimated population counts from the U.S. Census Bureau have even declined for a few years between 2011 and 2016 (Figure 4), Burlington MSA has grown more rapidly and steadily. Both Franklin County and Highgate have grown at similar rates of

growth even though they grew more slowly than the Burlington MSA as a whole. This is due to the “starts and stops” following the onset of the Great Recession and the continuing now more than 10-year historically restrained pace of recovery-expansion for the regional economy overall.

From an economic development perspective, the Town and County seem to offer better prospects for future economic development and economic growth because of a generally growing population. This is in contrast to other areas outside of the northwest region of the State (comprised of Burlington MSA region), where U.S. Census Bureau estimates of actual population declines have been reported to be a constraint for job growth and forward economic progress particularly over the recent past and likely for the near-term future. Although population growth for the Town and County has not been as robust as the resident population growth within the urban core of the Burlington MSA, the fact that the Town and County have had population growth at all offers some advantage for supporting future job growth and economic progress for the Town and region as a whole in contrast where the lack of available workers and labor force has been reported to have become a constraint elsewhere in the State.

Components of Population Change

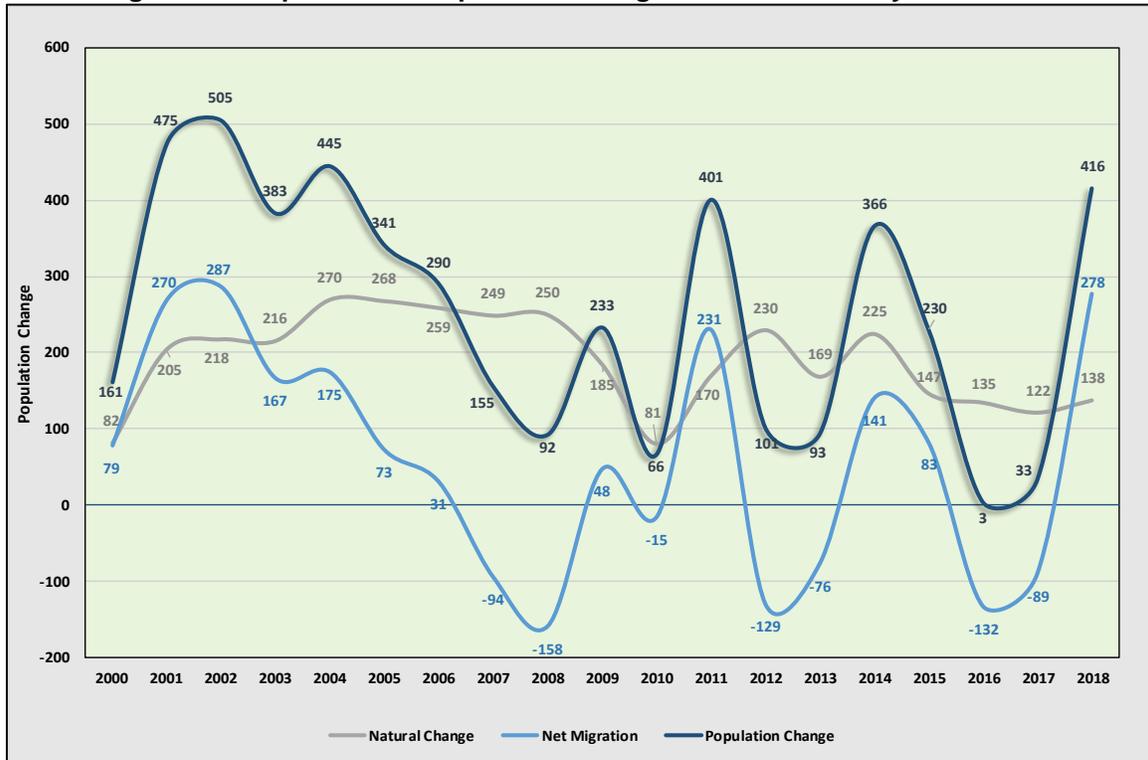
Why does regional population growth vary over time? In the case of the County, why has population growth been relatively weak at times while relatively strong at other times? An area’s population can change in two ways. First, there is the natural increase (or decrease)—representing the number of births minus the number of deaths, and net population migration—reflecting the balance of persons moving into and out of an area. The latter is largely driven by perceived availability of employment opportunities and items such as the perceived cost-of-living and/or the perceived quality of life. As such, migration tends to fluctuate in response to economic conditions—opportunity, affordable housing prices, and the other quality of life factors that attract the requisite professionals to a region to fill an area’s economic opportunity. *Figure 5* (below) shows the contribution of natural increase and net migration to total population change in the Franklin County between 2000 and 2018.

During the early half of the 2000s, the population growth was due to a combination of strong net migration and a relatively stable natural increase. Beginning in 2007, a greater number of people started moving out of the County than moving in, leading to a negative out-migration for the population. The chart shows that while the natural change in the County has remained positive, net migration growth or decline is the major driver of the County’s population growth and this trend will likely continue as the population ages.

Statewide, much of the population change over the last decade was due to net migration as the natural change began to shift from positive to negative as the population ages and have fewer children. In general, the migration component tends to react more quickly to economic factors than does natural increase. For instance, as job prospects increase within an area, workers and their families would tend to migrate to that area from elsewhere, attracted by the likelihood of obtaining access to quality employment opportunities. These migrants, however, tend to arrive well after economic expansion is underway; thus, an area’s population growth will tend to lag behind its employment growth. Population migration also can include a net influx or outflow of residents for non-economic reasons. These can include, among others, a preferred climate for the destination as compared to the source region, a preferred natural environment and other perceived amenities consistent with a “high quality of life” relative to the source region (e.g. access to arts, superior natural and recreational amenities, and on-going higher educational opportunities), and re-

locations due to family ties (e.g. re-location to be closer to family members who may be less mobile or in need of assistance from other family members).

Figure 5. Components of Population Change in Franklin County: 2000-2018



Source: U.S. Census Bureau

Prepared by Economic & Policy Resources, Inc.

Population migration has many impacts. In-migration into a region affects the migrants themselves, who generally move to find a perceived better place to reside. If they find a better opportunity/a preferred place to live, they are likely to remain as residents in that preferred location. If not, they may well re-locate again.

On a more aggregate level, migration affects both the areas of origin and destination. Receiving areas are likely to enjoy strengthened economic activity as the demand for goods and services, including housing unit and price increases as a result of additional demand. Economic multiplier effects further enhance the economic benefits of in-migration. By contrast, those areas with outmigration are likely to experience weaker economic activity and weaker growth in local and state tax bases. However, this view does not fully consider the resident population gains from: (1) those in-migrants no longer in the labor force (e.g. retirees); and/or (2) the effects of re-locations of residents from neighboring/adjacent locations (e.g. nearby counties).

Demographic Composition of Franklin County and the Town of Highgate

In the near-term, the age composition of the regional population is somewhat favorable for continued relative economic development-population gains. The 2018⁸ median age of the County’s population was 40.0 years, which was lower than the State, but higher than both the Town the

⁸ 2018 represents the most current year available from U.S. Census Bureau and American Community Survey for population by age cohorts for sub-state jurisdictions of counties, cities and towns.

national average (Table 2). In 2010, the median age of the County and the Town was 39.6 years and 37.8, respectively, compared with the State’s median age of 41.5 years. Eight years later, the Town’s median age is little changed at 37.9 years, substantially lower than the State (42.9 years) and still lower than the County (40.0 years).

Table 2. Age Composition in Selected Jurisdictions, 2018

Jurisdiction Nation/State/Metro Area/County/Town	Median Age	Percent of population in each age bracket									
		Under 15	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	
United States	37.9	18.9%	13.5%	13.8%	12.6%	13.2%	12.8%	8.8%	4.5%	1.9%	
Vermont	42.9	15.4%	14.3%	11.7%	11.3%	13.8%	15.4%	10.9%	5.1%	2.2%	
Burlington-South Burlington Metro Area	37.7	15.6%	17.6%	13.5%	11.7%	13.4%	13.7%	8.6%	3.9%	2.0%	
Chittenden County	36.5	14.8%	19.6%	13.9%	11.5%	13.0%	13.1%	8.2%	3.8%	2.0%	
Grand Isle County	47.8	14.1%	10.9%	10.3%	10.7%	15.5%	19.1%	13.6%	4.5%	1.3%	
Franklin County	40.0	18.6%	11.9%	12.5%	12.7%	14.7%	14.7%	9.1%	4.0%	1.9%	
Enosburgh	42.0	18.3%	10.9%	12.2%	12.8%	14.4%	14.2%	10.4%	2.9%	3.9%	
Fairfax	34.4	24.6%	8.8%	18.4%	11.9%	9.7%	16.3%	6.6%	3.7%	0.0%	
Georgia	39.4	18.0%	15.6%	10.5%	14.0%	16.7%	13.6%	7.5%	2.8%	1.3%	
Highgate	37.9	19.0%	11.3%	11.2%	14.5%	11.2%	12.8%	14.4%	3.9%	1.7%	
Richford	42.0	18.1%	11.5%	15.6%	8.6%	15.9%	16.2%	9.5%	3.2%	1.5%	
St. Albans, City	35.1	19.8%	12.3%	17.6%	12.1%	13.8%	11.7%	6.9%	3.7%	1.9%	
St. Albans, Town	43.1	14.0%	14.8%	13.2%	9.9%	12.6%	14.8%	10.2%	7.1%	3.4%	
Swanton	44.2	18.3%	11.8%	6.7%	14.4%	19.3%	14.6%	8.6%	3.8%	2.5%	

Sources: U.S. Census; American Community Survey

Prepared by Economic & Policy Resources, Inc.

For the purposes of assessing local labor force prospects, population trends can be further analyzed by grouping the data into six broad age categories. These age categories are:

- Under 15 years old: Infants and adolescents a decade or two removed from entering the labor force;
- 15-19 years: Prospective new entrants into the labor force, excluding college students;
- 20-24 years: New entrants into the labor force;
- 25-44 years: Workers in their prime years of productivity;
- 45-64 years: Mature workers with years of accumulated skill and experience; and
- 65 years and over: Retirees.

Recent population trends indicate a shrinking labor pool in the Town. In 2010, two out of every ten persons in the County and the Town were aged 14 years and under. While this ratio was slightly above both the State and Nation, by 2018 it had dropped to more-or-less match the national average.

The 15-19 age group in the Town decreased between 2010 and 2018 as did the 20-24 age group. This was in contrast to the 2010-2018 period where both the County and State experienced an increase in the 20-24 age group. The 25-44 age group had the second largest 2010 share among all age cohorts within the region. This pattern in the County was consistent with both the State and the nation. However, this age group did decline substantially between 2010-2018 within the Town.

Like other areas, the County’s population will continue to age over at least the near-term future unless significant there are changes in the population’s current aging trajectory. The size of the County’s 45-64 age cohort had the largest share among all age groups and this share increased over the 2010-2018 period. In contrast, this share has begun to decline for both the State and for the Town--following a sharp increase in share between 2000 and 2010. The share size of the 65 years and older group experienced the greatest change particularly in Highgate, where this cohort

increased from 10.5 percent of the Town’s population to 20.0 percent. These gains are likely due to both natural aging of the Town’s residents and what may be a net in-migration of retirees.

From an economic development perspective, as the general population continues to age, this over 65-year age cohort elderly will likely comprise an increasing share of region’s population base over at least the near-term future. This likely “graying” of the Town’s and County’s population base has significant implications for the size of the future workforce for the Town and the regional economy. Since the Town and regional population appear to be “graying” somewhat more slowly than the State as a whole, there may in fact be less pressure on the size of the available labor force to support economic development in the future versus other parts of the State. Still, the aging of the population will present challenges that will need to be addressed over time and economic development professionals-stakeholders should get prepared to address the labor force implications of a likely declining number of working age persons in the Town and region for the foreseeable future unless current aging trajectory changes.

Population and Labor Force by Race and Gender

The racial composition of the Town of Highgate in 2018 was similar to that of the State of Vermont. White, non-Hispanic is the overwhelming majority race in all of Vermont as well as its sub-state regions. Less than two-thirds of all Americans are white, non-Hispanic; in the Town, County, and the State, white, non-Hispanics represent 89.6 percent, 93.9 percent, and 93.0 percent of their respective total populations. When compared to the national average, all other races (with the exception of Native American/Indian and two or more races) are significantly under-represented in the State and its sub-state regions.

Table 3. Racial and Ethnic Distribution in Selected Jurisdictions, 2018

Jurisdiction Nation/State/Metro/County/Town	Total Not Hispanic or Latino	Not Hispanic or Latino							Total Hispanic or Latino
		White	Black/African American	American Indian	Asian	Pacific Islander	Other	Two or More Races	
United States	82.2%	61.1%	12.3%	0.7%	5.4%	0.2%	0.2%	2.3%	17.8%
Vermont	98.1%	93.0%	1.2%	0.3%	1.7%	0.0%	0.1%	1.8%	1.9%
Burlington-South Burlington Metro Area	97.9%	90.1%	2.0%	0.3%	3.2%	0.0%	0.2%	2.0%	2.1%
Chittenden County	97.7%	88.9%	2.5%	0.2%	4.2%	0.0%	0.2%	1.8%	2.3%
Grand Isle County	98.1%	92.9%	0.8%	0.4%	0.5%	0.0%	0.1%	3.3%	1.9%
Franklin County	98.5%	93.9%	0.6%	0.5%	0.4%	0.0%	0.5%	2.6%	1.5%
Enosburgh	99.0%	92.1%	3.8%	1.0%	0.0%	0.0%	0.2%	1.8%	1.0%
Fairfax	100.0%	99.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
Georgia	96.7%	94.4%	0.0%	0.3%	0.8%	0.0%	0.0%	1.3%	3.3%
Highgate	99.9%	89.6%	0.0%	2.0%	0.0%	0.0%	0.0%	8.3%	0.1%
Richford	98.2%	95.5%	0.0%	0.1%	0.0%	0.0%	0.7%	1.9%	1.8%
St. Albans, City	98.1%	86.7%	2.5%	0.0%	0.8%	0.0%	3.1%	5.0%	1.9%
St. Albans, Town	99.3%	98.0%	0.1%	0.0%	0.9%	0.0%	0.0%	0.3%	0.7%
Swanton	98.9%	93.4%	0.0%	1.5%	0.1%	0.0%	0.0%	3.9%	1.1%

Sources: U.S. Census Bureau; American Community Survey

Prepared by Economic & Policy Resources, Inc.

Women are an increasing part of the County regional labor force. According to the U.S. Census Bureau data, women constituted 47.6 percent of the 2000 work force; by 2018, women share of the labor force had increased to 48.7 percent. The shift over this period is primarily due to a decline in the labor force participation rate of males in the region. The 2017 data show the County regional labor force with 13,917 males and 13,223 females, up significantly from 2000 Census totals of 12,546 and 11,404 respectively.

From a strategic economic development perspective, it is unlikely that the ethnic composition of the Town and regional workforce will change dramatically in the near-term. However, an openness to greater diversity through immigration could be helpful to providing needed workers

to offset sluggish recent population increases. Further progress could also be made to integrate additional women into the regional workforce. One avenue is to devise policies that could facilitate the more seamless integration of women that currently face at least some obstacles (e.g. access to more affordable childcare, etc.) to workforce participation.

Educational Performance

The educational level of the local populace is increasingly important in determining local economic development prospects. For the most part, people in the Town and County have an average to below average level of educational attainment. Only 86.2 percent of the population over 25 year of age in the Town graduated from high school, which is slightly below the United States share (87.7 percent); but is well below that of the State (92.6 percent) and that of the County (90.8 percent). Beyond that, the portion of the over 25 population that has attained a bachelor’s degree or higher is only 14.0 percent, the national proportion is 31.5 percent; 37.3 percent of Vermont’s over 25 population has attained a bachelor’s degree or higher (Table 4).

Table 4. Educational Attainment for Selected Jurisdictions, 2018

Jurisdiction Nation/State/Metro/County/Town	Persons 25 Years and older	
	High School or Higher	Bachelor's Degree or Higher
United States	87.7%	31.5%
Vermont	92.6%	37.3%
Burlington-South Burlington Metro Area	94.1%	50.2%
Chittenden County	94.1%	50.7%
Grand Isle County	94.3%	39.2%
Franklin County	90.8%	23.7%
Enosburgh	88.4%	16.9%
Fairfax	95.3%	34.5%
Georgia	95.3%	34.4%
Highgate	86.2%	14.0%
Richford	81.4%	10.6%
St. Albans, City	94.5%	32.1%
St. Albans, Town	93.2%	19.8%
Swanton	85.8%	17.8%

Source: US Census; American Community Survey

Prepared by Economic & Policy Resources, Inc.

A closer examination of the educational attainment by age cohort indicates that this divergence between the Town and the other regions is in part due to a significantly lower level of education attainment of the older population in the Town. Of those 25 to 34 years of age, the Town’s population actually had a higher rate of having graduated high school (96.6 percent) than the United States (90.3 percent) but a lower rate of having received a bachelor’s degree or higher (23.0 percent and 35.1 percent, respectively) in 2018. Beginning in the 45-to-54 years-of-age group, the share of those who graduated high school in Highgate lagged behind the other regions (although it should be noted that the share of the population that had graduated high school was still relatively high). Meanwhile, of those age 65 years and older—which the Town had a greater share than the other two peer regions in 2018—only 69.7 percent received a high school diploma and 7.0 percent received a bachelor’s degree compared to 83.6 percent and 26.7 percent in the United States as a whole.

Table 5. Educational Attainment by Age Group, 2018

	United States	State of Vermont	Burlington Metro Area	Chittenden County	Grand Isle County	Franklin County	Town of Highgate	Town of Swanton
Population 25 to 34 years								
High school graduate or higher	90.3%	93.5%	94.9%	94.7%	96.2%	95.5%	96.6%	93.3%
Bachelor's degree or higher	35.1%	40.4%	52.3%	58.6%	37.6%	30.7%	23.0%	19.0%
Population 35 to 44 years								
High school graduate or higher	88.3%	94.2%	94.9%	95.1%	90.7%	94.8%	96.2%	93.3%
Bachelor's degree or higher	35.6%	41.5%	50.7%	59.1%	32.4%	27.8%	14.3%	23.8%
Population 45 to 64 years								
High school graduate or higher	88.3%	93.8%	94.2%	94.6%	96.1%	92.5%	89.0%	86.7%
Bachelor's degree or higher	30.5%	35.9%	41.2%	47.5%	40.3%	22.7%	15.6%	16.1%
Population 65 years and over								
High school graduate or higher	83.6%	89.0%	89.0%	91.7%	92.1%	79.9%	69.7%	73.2%
Bachelor's degree or higher	26.7%	35.0%	36.0%	41.9%	42.0%	16.5%	7.0%	15.3%
<i>Sources: US Census Bureau; American Community Survey</i>					<i>Prepared by: Economic & Policy Resources, Inc.</i>			

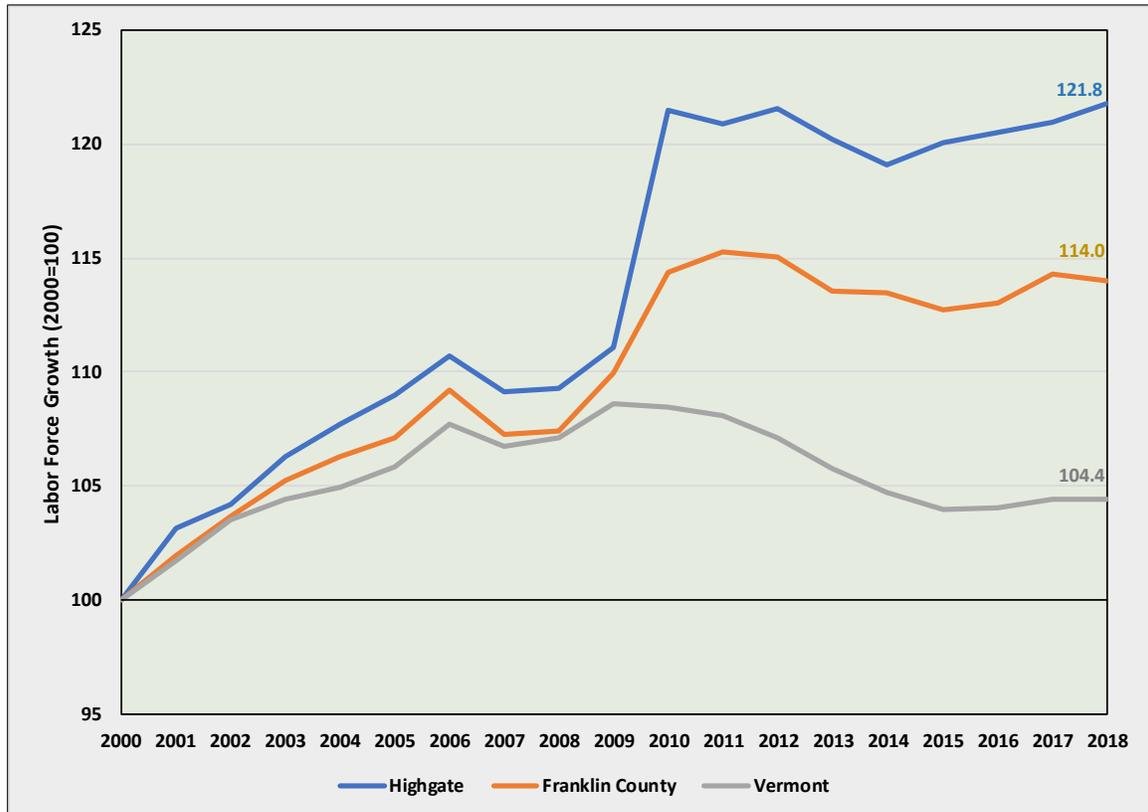
From an economic development perspective on the employer side of the equation, the educational level and skill sets of available workers are key to enabling them to succeed in an increasingly competitive global economy. For employers in a Town's or County/region's key sectors, it is important to have an existing workforce that is aligned with its competitive needs and to have a strategic approach to workforce development activities and investments that align with the current and future core competencies of the Town/regional human capital base that would enable key employers to effectively compete with key competitors outside of the Town/region. If those core work force competencies are not available and/or cannot be effectively brought into the Town/County as needed, the resulting poorer relative economic performance-financial support structure required to fund needed on-going and future investments to support a high performance, more resilient economy and a high quality of life in the Town/County will also be more difficult to achieve.

IV. Labor Market and Employment Trends in the Franklin County and Highgate

Labor Force Trends

Over the last 30 years, the County labor market has been changing in fundamental ways. Between 2000 and 2018, the County’s civilian labor force grew at a slightly faster rate than that of labor force for the State as a whole and slightly less than the Town from 2000-2009. In 2010, the State labor force began to contract with a similar state of stagnation observed in the County and in the Town. Over the nearly two-decade period, Franklin County’s labor force expanded by 14.0 percent versus 4.4 percent for the State and 21.8 percent for the Town.

Figure 6. Civilian Labor Force in the Town of Highgate, Franklin County and Vermont, 1990-2018



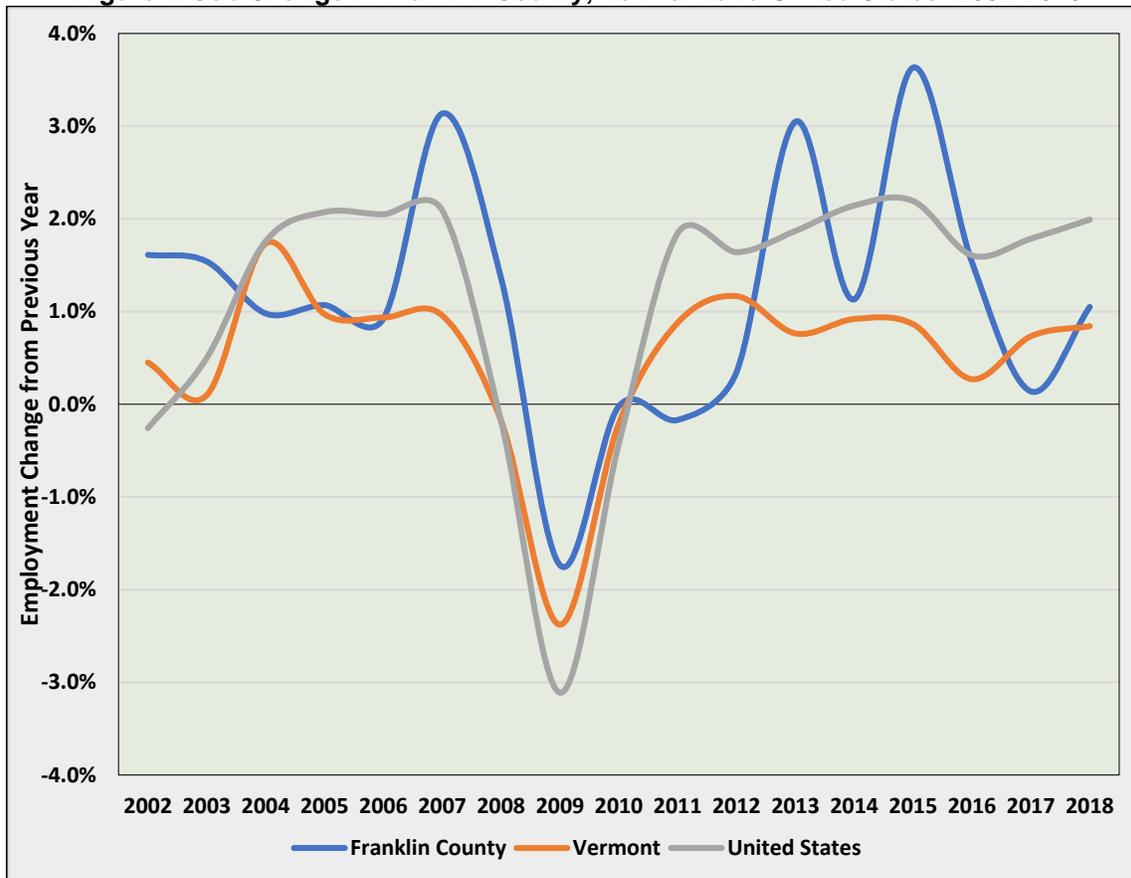
Source: Vermont Department of Labor

Prepared by Economic & Policy Resources, Inc.

Employment Trends

Over the last two decades, regional job growth and change in the County has been similar to that of the labor force. Regional job growth was steady (with an average annual growth rate of 1.5 percent in the County) from 2001-2008. Consistent with the period of national economic recession, regional job counts declined briefly between 2009 and 2011, but since that time job change statistics, while generally positive, have generally exhibited a “start-and-stop” pattern—similar to population migration to the County. In 2018, there were 2,082 jobs in the Town, compared to 26,913 jobs in the County, and 336,838 jobs reported in the State.

Figure 7. Job Change in Franklin County, Vermont and United States: 2002-2018



Source: U.S. Bureau of Economic Analysis

Prepared by Economic & Policy Resources, Inc.

Over the period, this growth and change was not spread evenly among all sectors of the regional economy. For the 2001-2018 period, regional goods-producing and services sectors (particularly, natural resources, construction, transportation and utilities, real estate, professional-technical services, administrative and waste services, and health care) experienced significant job growth comprising approximately one-fifth of the total job growth over the time frame. Government (all levels—Federal, State and Local) employment had consistent, generally positive job growth over the period. By contrast, farm employment, wholesale trade, information services, and (private) education sectors in Franklin County shed significant numbers of jobs. For instance, information services employment in the region has declined to just one-fifth of its size in 2001.

Widespread attention has been given to the shift in the national economy from goods-producing jobs toward services-producing jobs in recent decades. Although this is certainly not a new trend, the State has also been shifting rapidly from a goods-producing to a service-producing economy in recent years (Figure 8). Unlike the Nation and State, the County has not exhibited this trend to the same degree experienced elsewhere. The goods-producing industries consist of natural resources (farming/agriculture, fishing, forestry and mining), construction, and manufacturing. Services-providing industries include wholesale and retail trade, transportation and warehousing, utilities and information; finance and insurance; real estate and rental/leasing; educational services; health care and social assistance; professional and technical services; management of companies;

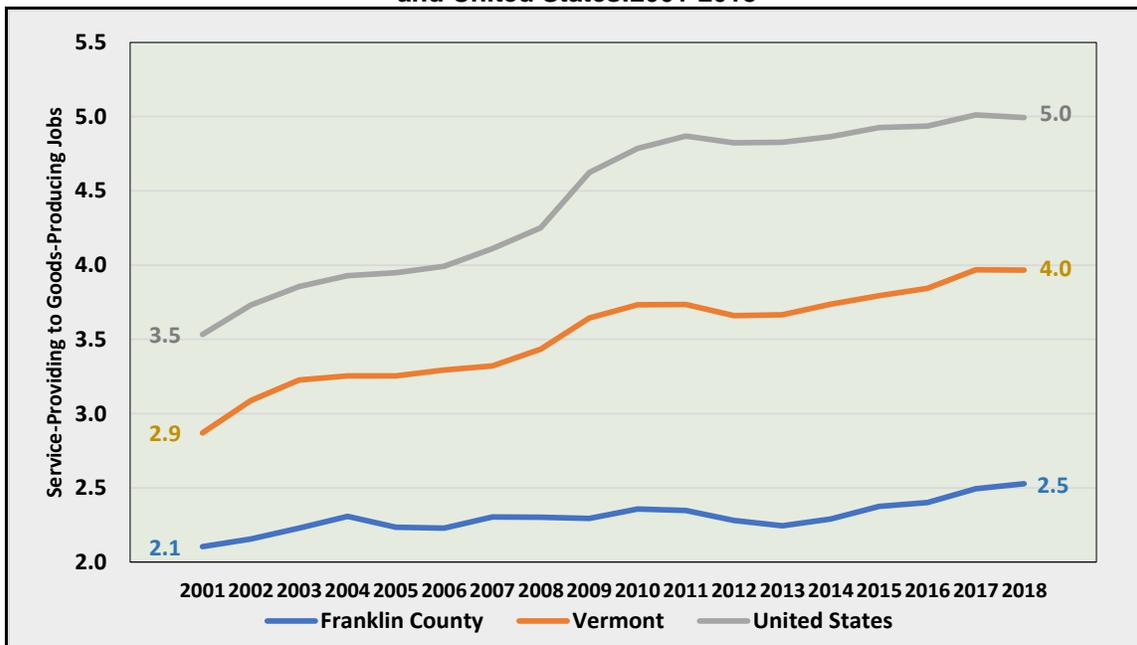
administrative and waste services; and arts, entertainment, and recreation; accommodation and food services.⁹

In 2001, Vermont's ratio was more than half a point higher than the County; 2.9 versus 2.1 services-providing jobs for each goods-producing job. By 2018, the County's ratio had increased to merely 2.5 services-providing jobs per goods-producing job, whereas statewide the ratio had ballooned to 4.0. Proportionately, far more people are working in services-providing jobs statewide and nationwide than in the County overall—suggesting that value-added manufacturing activity still remains viable within the region. At least part of the reason is tied to the region's unique and close relationship with key companies located in Canada, and particularly, the strategic location that the Town and County have to our neighbor to the north—encompassing both National and Provincial strategic relationships.

As Figure 8 suggests, significant structural change has occurred within the State and national economy over the 2001-2018 period, while the regional economy has remained more specialized in goods production. Employment shares in the natural resources sectors (farming, forestry, mining) continue to grow (reflecting the region's working rural landscape); manufacturing has remained level, and construction has grown modestly. This is in contrast with the State, where manufacturing employment has dropped from just over 48,000 in 2001 to just over 34,000 in 2018 (-29.0%). In other words, the reason Franklin County has not mirrored the transition toward more service-providing jobs is at least in part due to the region's ability to retain these manufacturing jobs while expanding other goods-producing sectors relating to its legacy of production agriculture.

⁹ Only private sector goods-producers and services-providers are considered in this ratio; government and government enterprises, under state and local and Federal ownership is viewed as largely services-providing.

Figure 8. Ratio of Service-Providing to Goods-Producing Jobs, Franklin County, Vermont and United States:2001-2018



Source: Bureau of Economic Analysis

Prepared by Economic & Policy Resources, Inc.

From a strategic economic development perspective, these data indicate that the Town and region have a diverse workforce with skill sets that are adaptable to a wide range of goods-producing sectors and services-producing sectors—at least some of which would be candidates for the water/wastewater infrastructure-enhanced area around the airport. Instead of being a constraint, the Town and region look to have the benefit of a diverse workforce with the potential to increase—not shrink—as is the case with many other regions around the State.

Profile of the Town/Regional Commuting Workforce

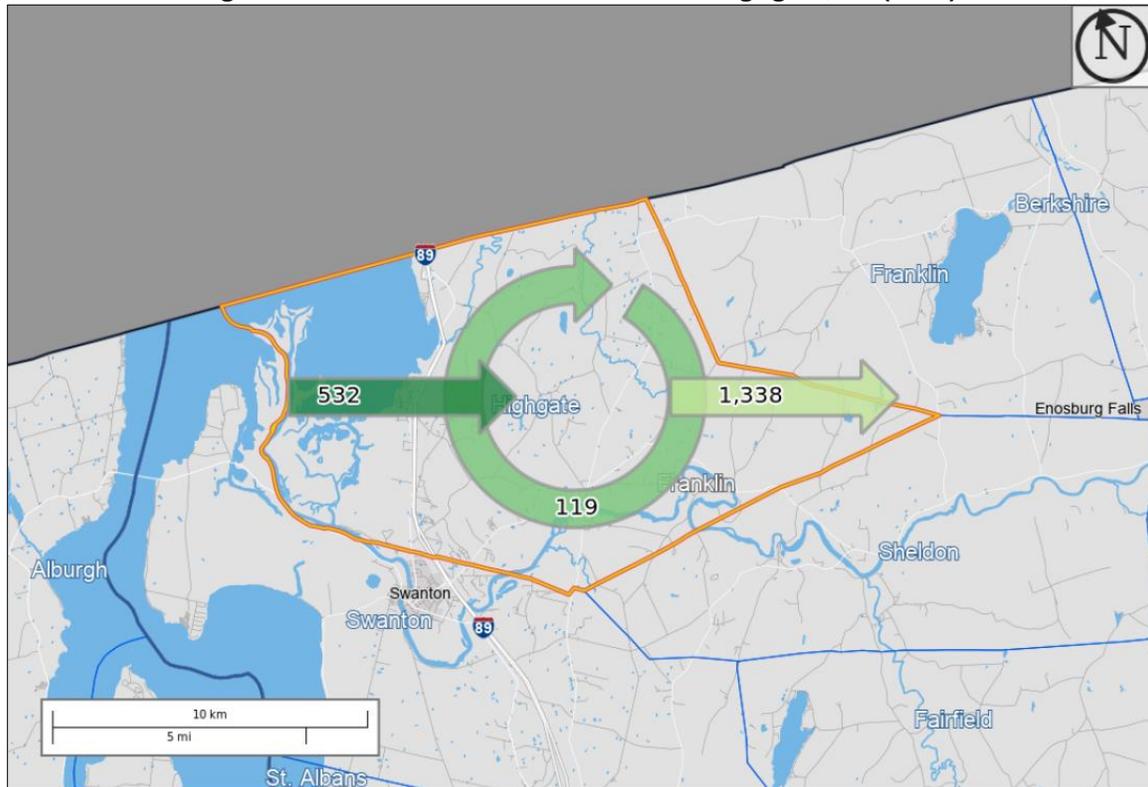
Over the years, the Town and County have always been an integral part of the overall northwest Vermont regional economy. Even though a significant portion of the Town and County workforce tends to live within short distance of their workplace, a significant portion of the workforce leaves the Town and County to work in other regional employment centers in northwest Vermont.

In 2017 (the latest year where detailed commuter data is available), the distance workers who live in the County travel to work, 36.6 percent traveled less than 10 miles, 37.6 percent traveled between 10 and 24 miles to work, which means that 74.3 percent of the workers living in the County traveled less than 24 miles to work from their home. This also means that a total of 25.7 percent traveled over 25 miles from home to work, with 16.6 percent having traveled between 25 to 50 miles from their home to their place of work and 9.2 percent having traveled more than 50 miles from their home to place of work. Within the Town, commuters were more likely to travel longer distances compared to the County. Of those living in the Town, 39.3% commuted less than 10 miles to work, 23.8% commuted between 10 and 24 miles, 25.1% commuted between 25 and 50 miles, and 11.8% commute greater than 50 miles.

Both the Town and the County have had a net outflow of workers, meaning that there are more residents living in the Town and County than have jobs that are located within the Town or County.

For the County in 2017, 5,934 people commuted into the County for work, 12,425 people commuted out of the County for work, and 11,155 people lived and worked within the County. For the Town, a total of 532 people commuted into the Town, 1,338 commuted out of the Town for work, and 119 people lived and worked within the Town.

Figure 9. Commuter Inflow-Outflow from Highgate, VT (2017)



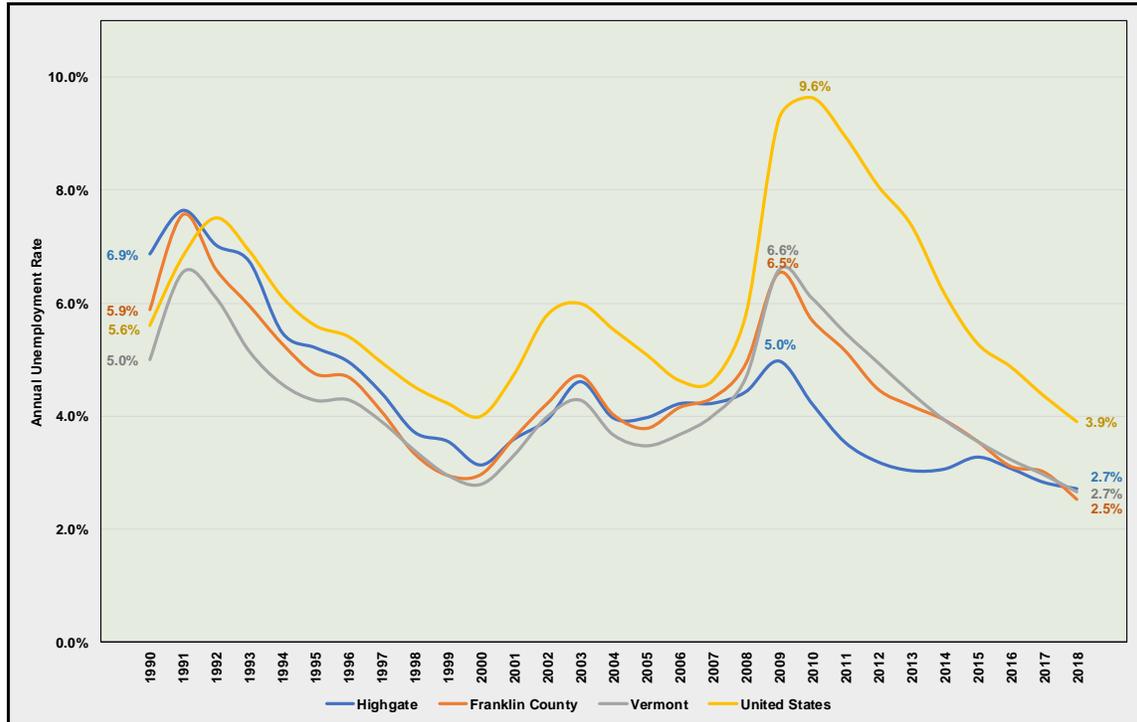
Of those who lived in the County, 47.3 percent worked in the County and 36.3 percent of the workers were employed in Chittenden County, which clearly demonstrated the close economic linkages between those two counties within the Burlington MSA. Similarly, although to a lesser degree, the majority of Town residents work in the County (59.6 percent) and Chittenden County (24.5 percent). On a town-to-town commuter basis, businesses in St. Albans Town and St. Albans City employed the most Town residents—193 (13.2 percent) and 172 (11.8 percent), respectively—followed by Swanton with 124 (8.5 percent), the Town itself with 119 (8.2 percent), Burlington with 107 (7.3 percent), and Sheldon with 100 (6.9 percent).

From a strategic economic development perspective, these data on commuting patterns indicate that the Town and region has potential access to a substantial number of workers who commute significant distances for their current jobs—but who logically would prefer to remain closer to their place of residence—if they could obtain a quality alternative employment opportunity. This suggests that the Town and region have access to a significant number of potential Town and County workers that would be available if the Town and region were able to secure additional quality employment opportunities for these workers closer to home. This is a potential strategic economic development asset that few municipalities and regions have at their disposal in Vermont and across the northern new England and upstate New York region.

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 activity seeking work—even though they currently do not have a job. Those who are not working but are actively looking for work constitute the unemployed.¹⁰

Figure 10. Unemployment Rates for the Highgate, Franklin County, Vermont and the United States



Source: Vermont DOL; Bureau of Labor Statistics

Prepared by Economic & Policy Resources, Inc.

In recent years, unemployment rates across the United States have been falling as the country recovers from the Great Recession and in some areas has reached an all-time low (Figure 10). Throughout the 1990s and early 2000s, the unemployment rate in Vermont and the region has stayed in synchrony with the national rate. However, Vermont and the regional economy was less affected by the economic downturn from 2007-2009 and the unemployment rate did not rise as sharply nor persist as long. The County had the lowest unemployment rate at 2.5% in 2018 followed by the State and the Town at 2.7% and the United States with 3.9%.

From a strategic economic development perspective, these data suggest that there is very little slack in labor markets at the current time in the mature economic cycle. Like other areas in the State and elsewhere, this could act as a potential constraint on future economic development in the Town and the County. This could be the case, even though the Town and region may have access to a significant number of potential work force participants who currently travel significant distances for their jobs. Tight labor markets tend to put upward pressure on wages and benefits, a condition that prospective new employers in the Town and region may not find attractive for the potential

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

water/wastewater expansion area—if this upward pressure becomes stronger than in potentially competing areas.

Microenterprises: Self-Employed Individuals and Non-Employers¹¹

In 2018, there were over 15.5 million self-employed workers in the United States; about 10.0 percent of the total workforce. This is down for its previous peak of 16.1 million in 2007. Two-thirds of the self-employed work in their own unincorporated businesses (e.g., sole proprietors); with the remaining one-third were incorporated businesses.¹² Many of the self-employed work in “home-based businesses” and of those self-employed that work outside the home, most of these businesses are located within their place of residence.

Self-employment holds great attraction for many people. Compared to working for someone else, it seems to promise higher earnings, enhanced professional standing, and independence. Practical considerations, such as the desire to work at home or adjust a work schedule to meet family needs, can also motivate people to start their own enterprise. Retired people often become self-employed to supplement their pensions and to have something to do. Finally, others wish to work for themselves because of job dissatisfaction and simply want a change.

On a national basis, the self-employed differ markedly from wage and salary workers in their personal and social characteristics. Compared with wage and salary workers, the self-employed are older and more likely to be men and may have less—but not substantially less—formal education. Relative to their numbers in the labor force, minority groups (excluding Asians) are significantly underrepresented in self-employment. Although the proportion of self-employed women remains substantially lower than that of self-employed men, women have been a major contributor to the recent growth in self-employment.

11 A brief word on nomenclature: microenterprises is a colloquial and interchangeable term which includes individuals that are either classified as sole proprietors (i.e., self-employed and their general partners); self-employed; or non-employers. The essence of each of these “microenterprise” terms are self-employment and without paid employees. Sole proprietors is utilized by the U.S. Bureau of Economic Analysis and is reported on both a farm and nonfarm basis for states and counties; self-employed individuals is utilized by the U.S. Bureau of Labor Statistics and is annually reported only on a national basis; and non-employers are self-employed individuals operating very small businesses which may or may not be the owner’s principal source of income and is utilized by the U.S. Census Bureau and reported annually for states and counties. These data sets originate from administrative records of the Internal Revenue Service, derived from sole proprietor businesses filing Form 1040, Schedule C and filers of partnership and corporate tax returns that report no paid employees.

12 Some contend that these estimates of self-employed worker estimates are substantially undercounted. A variety of reasons are offered including that many are engaged in the cash (or underground) economy for both lawful and illicit activities (see S.F. Hipple, “Self-Employment in the United States.” Monthly Labor Review. September, 2010).

Table 6. Non-Employers in Franklin County and Vermont, 2017

NAICS	Description	Franklin County		Vermont	
		Nonemployers	Receipts (\$000)	Nonemployers	Receipts (\$000)
11	Agriculture, forestry, fishing & hunting	197	\$7,598	1,875	\$80,655
21	Mining,	5	\$637	50	\$6,868
22	Utilities	5	\$105	119	\$12,798
23	Construction	634	\$42,548	8,649	\$495,218
31-33	Manufacturing	167	\$6,670	1,903	\$61,364
42	Wholesale trade	48	\$3,161	837	\$68,735
44-45	Retail trade	412	\$12,947	5,110	\$191,405
48-49	Transportation & warehousing	132	\$8,223	1,627	\$92,340
51	Information	35	\$602	869	\$25,907
52	Finance and insurance	46	\$2,965	953	\$79,851
53	Real estate & rental/leasing	286	\$17,548	5,794	\$546,202
54	Professional, scientific & technical services	399	\$13,541	9,225	\$342,296
56	Admin. & support and waste management	266	\$5,980	4,450	\$108,587
61	Educational services	99	\$1,270	2,151	\$33,148
62	Health care and social assistance	337	\$9,783	4,779	\$161,997
71	Arts, entertainment & recreation	179	\$3,533	4,730	\$89,167
72	Accommodation & food services	59	\$2,079	1,223	\$42,480
81	Other services (ex. public admin)	559	\$18,317	7,161	\$214,640
Total		3,865	\$157,507	61,505	\$2,653,658

Source: U.S. Census Bureau

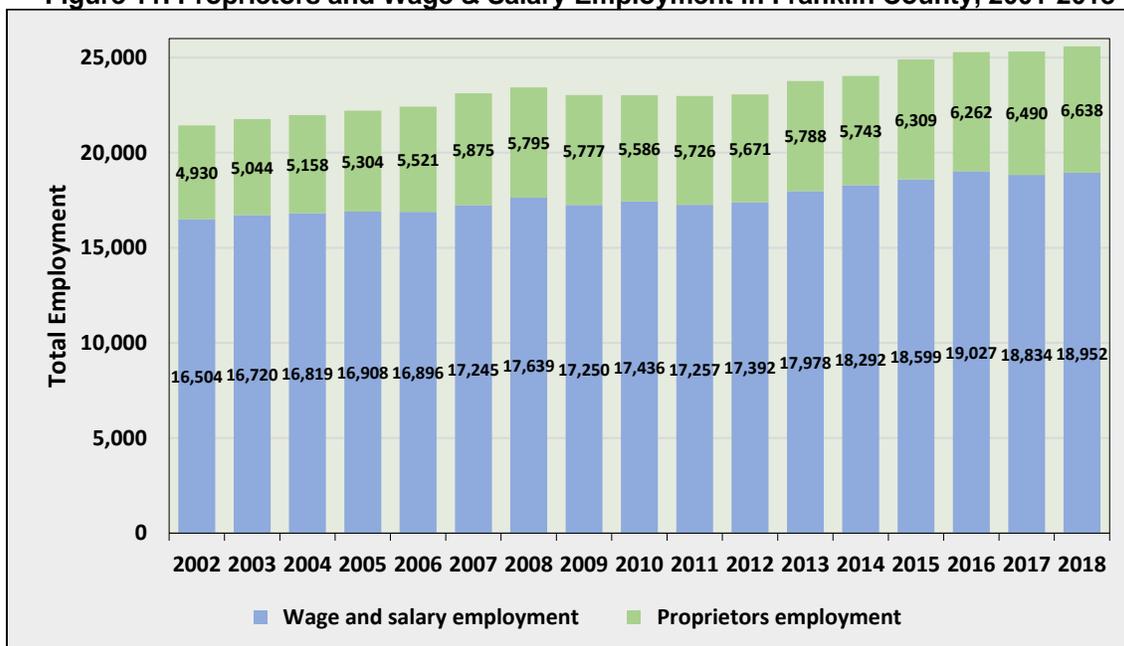
Prepared by Economic & Policy Resources, Inc.

For the State as a whole, there were an estimated 61,505 self-employed workers in 2017, representing about 14.1 percent of the State’s total work force (U.S. Census Bureau). Information on self-employed workers, at both the State and sub-state level, varies, based on the data source.¹³ Table 6 indicates that one in every six workers in the County were self-employed in 2017. More than two-thirds of these 3,865 non-employers in the region were engaged in construction; retail trade; real estate and rental, professional and technical services; health care and social assistance, and other services. Compared with the State and nation, self-employed workers in the County compose a larger share of total employment (15.4 percent).

Proprietors. Information on proprietors (i.e., self-employed, partners, and those employed in tax-exempt cooperatives) confirms the importance of the self-employed. While the vast majority of people employed in the County are wage and salaried workers, proprietors have grown, both in absolute and relative terms (Figure 11). In 2001, roughly 22.6 percent (or 4,762 proprietors) of the total employment in the County were classified as proprietors; by 2018, its share had increased to 25.9 percent and the number of proprietors (6,402) had increased by a more than a third. Statewide, proprietors similarly represented about 25.3 percent share of total 2018 employment in Vermont.

¹³ The U.S. Bureau of Labor Statistics, through its Current Population Survey, collects information on self-employed individuals. The U.S. Census Bureau reports tax return information from the Internal Revenue Service on non-employer businesses, that is one that has no paid employees, has annual business receipts of \$1,000 or more, and is subject to federal income taxes. Finally, the U.S. Bureau of Economic Analysis published a data series on proprietors is ownership-based, and includes both sole proprietorships and business partners. Each of these data sources may give varying estimates.

Figure 11. Proprietors and Wage & Salary Employment in Franklin County, 2001-2018



Source: US Bureau of Economic Analysis

Prepared by Economic & Policy Resources, Inc.

From an economic development perspective, these data suggest that the region and the State have a high degree of “entrepreneurial energy” that may be a good sign for supporting economic development and resiliency in the region. Although statistics for the Town do not exist, the Town is a part of the region and the State. It would be surprising for the Town to deviate very significantly from the County data, suggesting the level of entrepreneurial energy in support of this potential water/wastewater expansion relatively “promising.”

Employment Structure or Economic Base of Franklin County

In economic terms, the County’s employment base can be characterized as a mix of “Base Industry Employers:” and “Non-Base Industry Employers” or local industries. “Base Industry” and “Non-Base Industry” employers are distinguished from each other based on the markets served by the product or service produced by those employers. “Base Industries” produce their product(s) or service(s) for sale to markets-customers outside of the region, thereby importing sales dollars and capturing new income for the region. Those customers may be in other parts of the State, in other states, or in foreign countries. They also may include employers-businesses tied to the region’s visitor sector (e.g. tourism sector). Regional economic theory holds that selling to a non-local customer brings new income into a County, and thereby expands the size of the regional “economic base.” These industries can include employers that have both elements—part base industry/part local industry characteristics.¹⁴

Businesses that produce their products-services for sale to local customers, such as other businesses or households within the region, are called non-basic employers-industry participants. While employers in local industries do not bring new dollars into the region through their sales, local industries-employers can be important components of the Town’s/region’s quality of life and also

¹⁴ An example might be a “high quality” restaurant that serves both visitors (e.g. tourists) from a base industry perspective and local residents (as a local industry that is important to the region’s high quality of life).

can be important to community development efforts such as attractive downtowns for residents (and also potentially visitors to the region).

Base industry employment is that share of a regional industry's jobs that correspond to the industry's output sold outside the County. Estimates of basic employment among the County's regional industries was based on a measure of specialization called location quotient analysis (Figure 12). This specialization estimate utilizes a statistic called a "location quotient." Location quotients are simply measures of economic specialization; here comparing the share of total employment in a particular industrial grouping in the County with the share it represents in the nation.¹⁵ The quotient for any industry or sector is determined by dividing its share of regional 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 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.

A location quotient is formally computed in the following manner:

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

where:

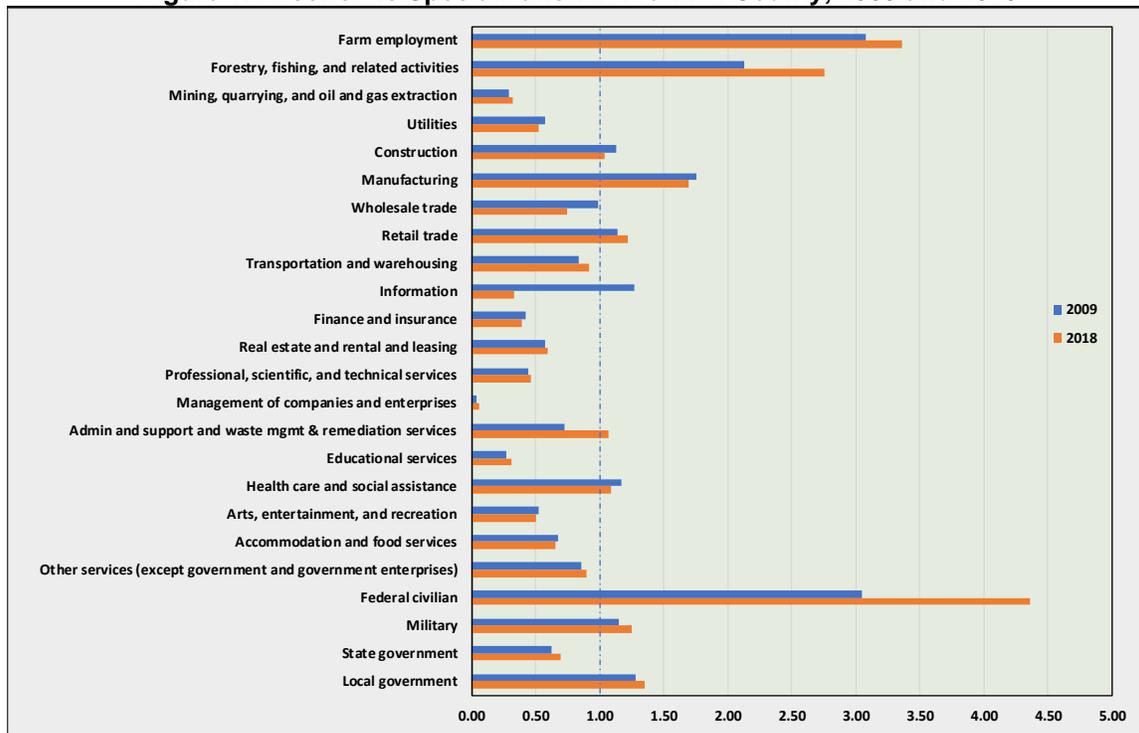
LQ_i is the location quotient for sector i ;

E_{ic} / E_c is the percent of regional employment in sector i ; and

E_{is} / E_s is the percent of state employment in sector i .

¹⁵ Often times, the frame of reference is the nation. However, for a sub-state region in which export activities include sales to customers in other parts of the state, using the State as the frame of reference is also permissible for this analysis.

Figure 12. Economic Specialization in Franklin County, 2009 and 2018



Source: Vermont Department of Labor

Prepared by Economic & Policy Resources, Inc.

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 or base industry sectors. As noted above, export or base industry sectors in a regional economy are important to importing new dollars into a region and expanding the size of the regional “economic pie.” Other “non-base” economic sectors in the region in turn support these export-oriented industries by providing needed supplies and services and make an important contribution to the quality of life in a region. However, export-sectors tend to be the focus of strategic economic development because as these export industries grow, the linked local sectors also in will tend to expand to meet the needs of the larger regional economy.

Over time, this technique has been utilized to help identify regional-local strategic 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 overall industry cluster development strategy for the region.

The location quotient results shown in Figure 12 indicate that goods-producing sectors, (particularly farm; forestry, fishing & hunting; and manufacturing) represent the major export-oriented sectors for Franklin County. For instance, forestry, fishing and hunting's location quotient of 2.9, indicates that nearly two-thirds of this sector's employment is devoted to export production. Like much of Vermont, natural resources are leading export sectors.

Figure 12 also indicates on an aggregate basis that Franklin County does not appear to specialize in the major industry groups of mining, utilities, information, finance and insurance, real estate and leasing, professional and technical services, management of companies, education services, arts and recreation, and accommodations and food service. Location quotients for other regional sectors, principally construction, wholesale and retail trade, transportation and warehousing, administrative support and waste services, health care and social assistance, and other services are approximately 1.0; thus indicating a high degree of self-sufficiency and undoubtedly some export orientation.

Two economic “snapshots” of Franklin County are provided in Figure 12.¹⁶ Selecting two summary years of 2009 and 2018 provides a simple comparative analysis for the region since the Great Recession. An increase in an industry sector's location quotient from 2009 to 2018 indicates that the industry has become more important to the regional economy compared to the nation. A high (i.e., 1.20) and increasing location quotient implies that the Franklin County region has a competitive advantage in maintaining and attracting employment within that industry. Regional examples of increased competitiveness are found in the aggregated industries of farming; forestry, fishing & hunting; transportation and warehousing; administrative support and waste services; and civilian federal government (reflecting the federal Immigration and Nationalization” sub-sector—which act like high-value added producer services since they are financed by federal government resources. In contrast, a high but declining location quotient may indicate a recent eroding of a regional industry's competitive advantage vis-à-vis the nation. Regional examples of recent declining competitiveness include industries in wholesale trade and information services.

¹⁶ In Table 7, three “snapshots” are taken of the Franklin County economy—2001, 2009 and 2018. Besides the trough (2001) to trough (2009) years of the business cycle, the most recent year of 2018 was selected.

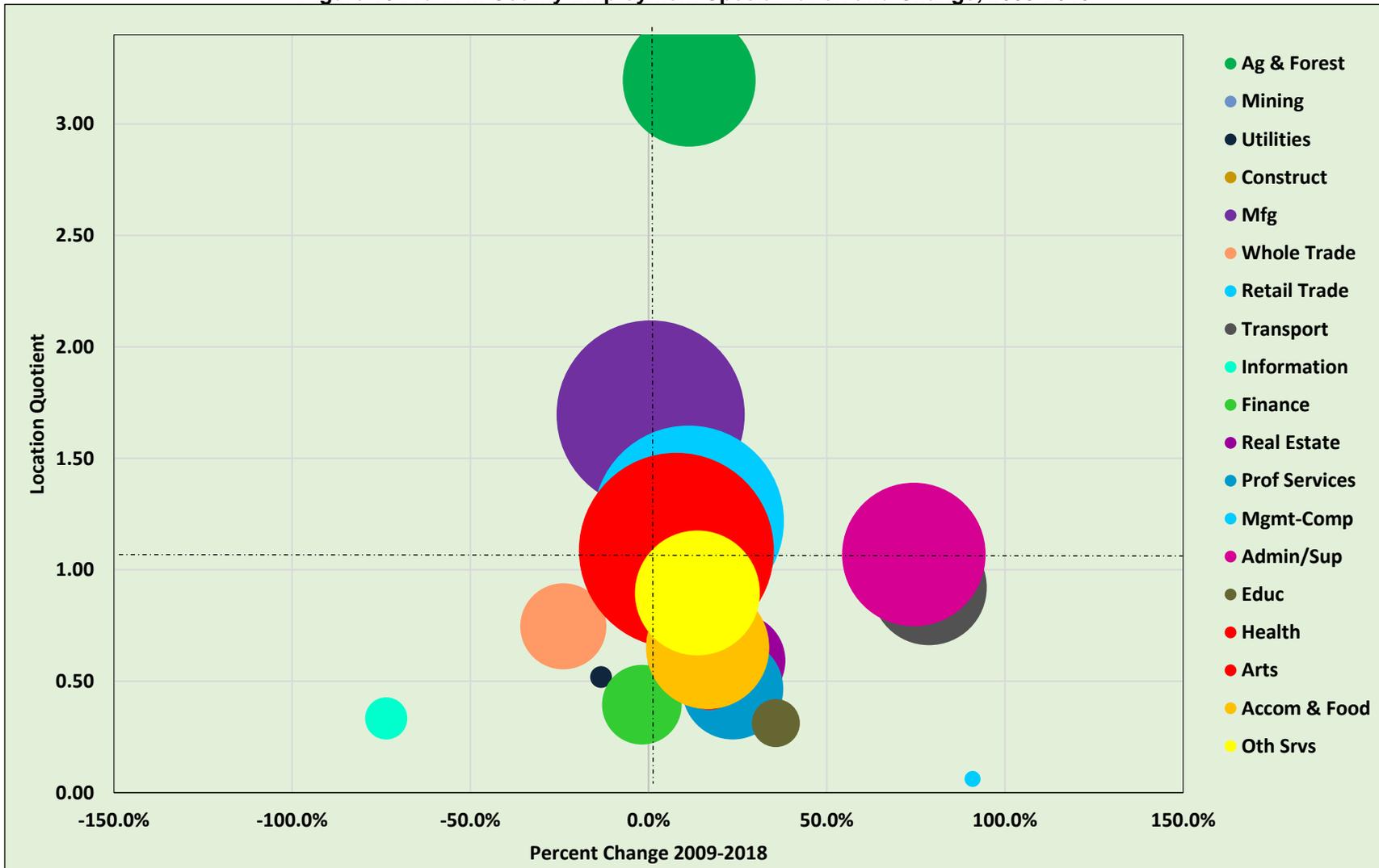
Table 7. Economic Specialization in Franklin County: 2001, 2009 and 2018

Description	2001	2009	2018
Total employment	1.000	1.000	1.000
Wage and salary employment	0.933	0.955	0.963
Proprietors employment	1.326	1.165	1.123
Farm proprietors employment	2.866	2.726	2.853
Nonfarm proprietors employment	1.196	1.082	1.054
Farm employment	3.182	3.081	3.359
Nonfarm employment	0.959	0.968	0.969
Private nonfarm employment	0.924	0.907	0.887
Forestry, fishing, and related activities	1.782	2.129	2.759
Mining, quarrying, and oil and gas extraction	0.194	0.288	0.319
Utilities	0.331	0.575	0.519
Construction	0.961	1.133	1.036
Manufacturing	1.410	1.754	1.697
Wholesale trade	0.944	0.988	0.746
Retail trade	1.227	1.143	1.219
Transportation and warehousing	0.891	0.838	0.921
Information	1.309	1.269	0.333
Finance and insurance	0.503	0.425	0.395
Real estate and rental and leasing	0.601	0.576	0.593
Professional, scientific, and technical services	0.416	0.439	0.466
Management of companies and enterprises	0.013	0.041	0.062
Admin and support and waste mgmt & remediation services	0.441	0.728	1.069
Educational services	0.797	0.265	0.312
Health care and social assistance	1.183	1.171	1.087
Arts, entertainment, and recreation	0.625	0.522	0.507
Accommodation and food services	0.754	0.678	0.651
Other services (ex.government & government enterprises)	0.977	0.860	0.896
Government and government enterprises	1.167	1.331	1.548
Federal civilian	2.211	3.043	4.362
Military	1.266	1.146	1.249
State and local	1.001	1.100	1.172
State government	0.654	0.626	0.692
Local government	1.132	1.276	1.352

Source: U.S. Bureau of Economic Analysis

Prepared by Economic & Policy Resources

Figure 13 Franklin County Employment Specialization and Change, 2009-2018



Note: Bubble size is graduated based on 2018 employment size.

Figure 13 presents a graphical analysis of economic specialization of nineteen (19) industries in the County with their most recent growth and change patterns (2009-2017). The chart is divided into four quadrants, based on location quotient of 1.00 and a positive percentage change in employment between 2009 and 2018. For instance, **Quadrant 1** (upper right) represents the most economically attractive area in the chart—industry sectors located in this area have been labeled *stars*, with a location quotient of 1.00 or higher and a positive growth rate in employment over the 2009-2018 period. There are six County *stars* within this Quadrant 1:

- Agriculture, Forestry, Fishing, and Related Activities (NAICS 11, with a 2018 employment base of 1,456 employees; a 2018 LQ of 3.00; and a 11.4 percent growth in employment);
- Manufacturing (NAICS 31-33, with a 2018 employment base of 2,920 employees; a 2018 LQ of 1.70; and a 0.6 percent growth rate);
- Retail Trade (NAICS 44-45, with a 2018 employment base of 3,000 employees, a 2018 LQ of 1.22; and a 11.2 percent growth rate in employment);
- Health Care and Social Assistance (NAICS 23, with a 2018 employment base of 3,135 employees, a 2018 LQ of 1.09; and a 7.8 percent growth rate in employment);
- Administrative and Support & Waste Management and Remediation Services (NAICS 56, with a 2018 employment base of 1,699 employees, a 2018 LQ of 1.07; and a 74.4 percent growth rate in employment); and
- Construction (NAICS 23, with a 2018 employment base of 1,449 employees, a 2018 LQ of 1.04; and a 2.3 percent growth rate in employment).

Going clockwise, **Quadrant 2** represents that area where industry sectors have a positive growth rate in employment yet fall under the 1.00 location quotient threshold. Nine County industry sectors, called *opportunities*, are within Quadrant 2:

- Transportation and Warehousing (NAICS 48-49, with a 2018 employment base of 1,099 employees; a 2018 LQ of 0.92; and a 78.7 percent growth rate in employment);
- Other Services (NAICS 81, with a 2018 employment base of 1,286 employees; a 2018 LQ of 0.90; and a 13.7 percent growth rate in employment);
- Accommodation and Food Services (NAICS 72, with a 2018 employment base of 1,252 employees; a 2018 LQ of 0.65; and a 16.6 percent growth rate in employment);
- Real Estate and Rental and Leasing (NAICS 53, with a 2018 employment base of 718 employees; a 2018 LQ of 0.59; and a 25.3 percent growth rate in employment);
- Arts, Entertainment, and Recreation (NAICS 71, with a 2018 employment base of 303 employees; a 2018 LQ of 0.51; and a 17.0 percent growth rate in employment);
- Professional, Scientific, and Technical Services (NAICS 54, with a 2018 employment base of 843 employees; a 2018 LQ of 0.47; and a 23.6 percent growth rate in employment);
- Mining, Quarrying, and Oil and Gas Extraction (NAICS 21, with a 2018 employment base of 55 employees; a 2018 LQ of 0.32; and a 27.9 percent growth rate in employment);
- Education Services¹⁷ (NAICS 61, with a 2018 employment base of 190 employees; a 2018 LQ of 0.31; and a 35.7 percent growth rate in employment); and
- Management of Companies and Enterprises (NAICS 561, with a 2018 employment base of 21 employees; a 2018 LQ of 0.06; and a 90.9 percent growth rate in employment).

Quadrant 3—the least economically attractive area in the chart—represent those industry sectors (or labeled *challenges*) with a location quotient that falls below the 1.00 threshold and have had an eroding

¹⁷ Education here refers to only private schools, colleges and training centers. Public education is a part of State and Local Government.

employment base since 2009. Within the County’s industry portfolio, there are four sectors deemed *challenges*:

- Wholesale Trade (NAICS 42, with a 2018 employment base of 611 employees; a 2018 LQ of 0.75; and a negative -23.9 percent growth rate in employment);
- Finance and Insurance (NAICS 52, with a 2018 employment base of 523 employees; a 2018 LQ of 0.39; and a negative -1.9 percent growth rate in employment);
- Information (NAICS 51, with a 2018 employment base of 147 employees; a 2018 LQ of 0.33; and a negative -73.6 percent growth rate in employment); and
- Utilities (NAICS 22, with a 2018 employment base of 39 employees; a 2018 LQ of 0.32; and a negative -13.3 percent growth rate in employment).

Quadrant 4 represents another mixed area—where industry sectors (with the label *mature*) have a significant economic specialization (i.e., a location quotient greater than 1.00) but have had an eroding employment base since 2009. Within the County, there are no industry sectors that met these criteria in 2018. However, with an employment change of just 0.6 percent (+13 jobs), Manufacturing was very close to being in the Quadrant and could be considered a mature industry for the region.

From a strategic economic development perspective, the analysis presented above is the first order assessment of the Town’s and region’s key industry sectors. The first challenge for strategic economic development is to first work to nurture the region’s existing key industry employers to make sure that they have the resources and local cost environment that they need to effectively compete in today’s increasingly competitive global economy. While this is not necessarily the focus of this existing conditions assessment for the water/waste water expansion in the area of the airport, it is important to not lose sight on this important strategic component and to recognize that this project could still nevertheless could have at least a supporting role for these strategic employers by possibly targeting suppliers and vendors that support these industries within the Town and region.

Secondly, the analysis of key sectors above can be used to identify current Town and regional growth sectors that also require some “strategic nurturing” so as to help these sectors to continue to grow significantly and maintain/enhance their competitive advantage. These industry sectors represent potential future candidates for Town and regional expansion, at least some of which could include companies that would be potential sector targets for the new water/wastewater infrastructured area.

Thirdly, there are a group of key Town and regional employers in sectors that are clearly in a “defensive posture” in terms of strategic assistance. While these key employers are not ideal candidates for the new water/wastewater infrastructured area, it is important to recognize that defensive strategies to potentially assist in these sectors’ competitiveness vis-à-vis their competitors is important to an overall strategy of maintaining the good overall performance and resiliency of the Town and regional economic base as part of an overall strategic mosaic of policies to maintain the Town’s and region’s quality-of-life and public asset base.

V. Personal Income Growth and Change in Franklin County

Employment measures only tell part of the economic story of a region. Personal income in the County, the most broad-based measure of general purchasing power available at the local level, amounted to nearly \$2,284.3 billion in 2018. When measured in current dollars, the County's total personal income increased by 95 percent from 2001 and 2018. However, when measured in constant 2012 dollars to adjust for inflation, the entire increase over the 17-year period amounted to 44 percent.¹⁸ As a share of the total State personal income, the County's portion has grown slightly from 6.2 percent in 2001 to around 6.7 percent in 2018.

Table 8. Personal Income by Source in Franklin County, Vermont and the United States

Personal Income--Franklin County	2001		2009		2018	
	\$ Millions	Share	\$ Millions	Share	\$ Millions	Share
Total Personal Income	\$1,170.5	100.0%	\$1,642.2	100.0%	\$2,284.3	100.0%
Net Labor Earnings	\$828.9	70.8%	\$1,098.5	66.9%	\$1,480.7	64.8%
Dividends, Interest & Rent	\$171.4	14.6%	\$226.5	13.8%	\$348.9	15.3%
Transfer Receipts	\$170.2	14.5%	\$317.2	19.3%	\$454.7	19.9%
Per capita income (\$)	\$25,607		\$34,621		\$46,220	
Personal Income--Burlington MSA	2001		2009		2018	
	\$ Millions	Share	\$ Millions	Share	\$ Millions	Share
Total Personal Income	\$6,635.6	100.0%	\$9,032.2	100.0%	\$12,728.8	100.0%
Net Labor Earnings	\$4,650.5	70.1%	\$6,020.8	66.7%	\$8,074.8	63.4%
Dividends, Interest & Rent	\$1,259.0	19.0%	\$1,614.9	17.9%	\$2,711.2	21.3%
Transfer Receipts	\$726.2	10.9%	\$1,396.5	15.5%	\$1,942.8	15.3%
Per capita income (\$)	\$32,954		\$42,922		\$57,575	
Personal Income--State of Vermont	2001		2009		2018	
	\$ Millions	Share	\$ Millions	Share	\$ Millions	Share
Total Personal Income	\$18,692.9	100.0%	\$24,990.4	100.0%	\$33,928.6	100.0%
Net Labor Earnings	\$12,220.8	65.4%	\$15,432.8	61.8%	\$19,731.5	58.2%
Dividends, Interest & Rent	\$3,799.5	20.3%	\$4,499.2	18.0%	\$7,374.3	21.7%
Transfer Receipts	\$2,672.6	14.3%	\$5,058.4	20.2%	\$6,822.8	20.1%
Per capita income (\$)	\$30,744		\$40,275		\$54,173	
Personal Income--United States	2001		2009		2018	
	\$ Millions	Share	\$ Millions	Share	\$ Millions	Share
Total income by residence	\$9,001,839	100.0%	\$12,051,307	100.0%	\$17,813,035	100.0%
Net Labor Earnings	\$6,135,866	68.2%	\$7,728,638	64.1%	\$11,159,450	62.6%
Dividends, Interest & Rent	\$1,673,408	18.6%	\$2,175,976	18.1%	\$3,682,134	20.7%
Transfer Receipts	\$1,192,565	13.2%	\$2,146,693	17.8%	\$2,971,451	16.7%
Per capita income (\$)	\$31,589		\$39,284		\$54,446	

Source: US Bureau of Economic Analysis

Prepared by Economic & Policy Resources

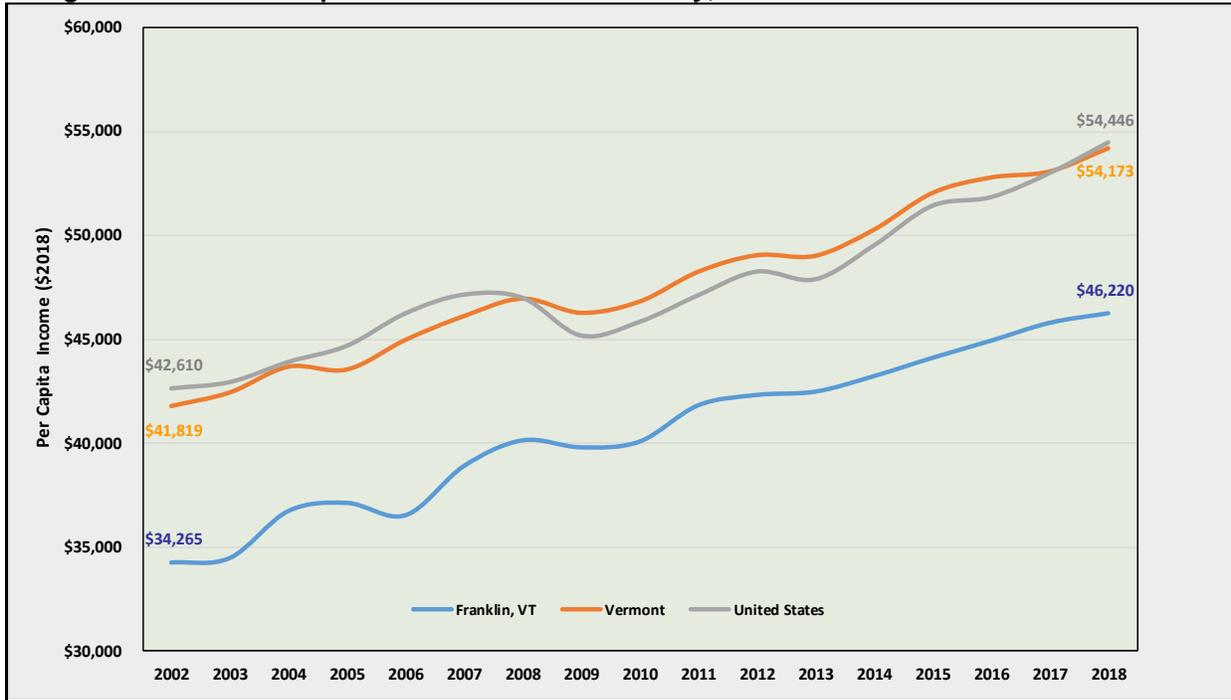
Personal income grew at virtually the same rate in both the County and the nation and greater than the State over the 17-year period. In real terms, the average annual growth rate in personal income was 2.43 percent in the County compared with 2.52 percent for the United States and 1.97 percent for the State.

¹⁸ 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).

Per Capita Income

Per capita income¹⁹ in the County was \$46,220 in 2018. This was \$7,905 below that of the statewide average and \$8,226 below the nation. The County's regional real (i.e., constant \$2018) per capita income grew modestly over the time period, averaging 1.70 percent each year. In comparison, national and State per capita income grew on average 1.42 percent, 1.55 respectively each year.

Figure 14. Real Per Capita Income in Franklin County, Vermont and United States: 2001-2018



Source: U.S. Bureau of Economic Analysis

Prepared by Economic & Policy Resources, Inc.

While the State's per capita income surpassed the national average in 2009, the County's per capita income remained well below the State and national averages (Figure 14). Since 2001, the gap between the County's per capita income and the national average grew slightly smaller; narrowing from 81 percent of the national average to 85 percent. This trend is not unique to the County though; per capita incomes for many rural regions throughout the country have remained well below their respective statewide and national averages.

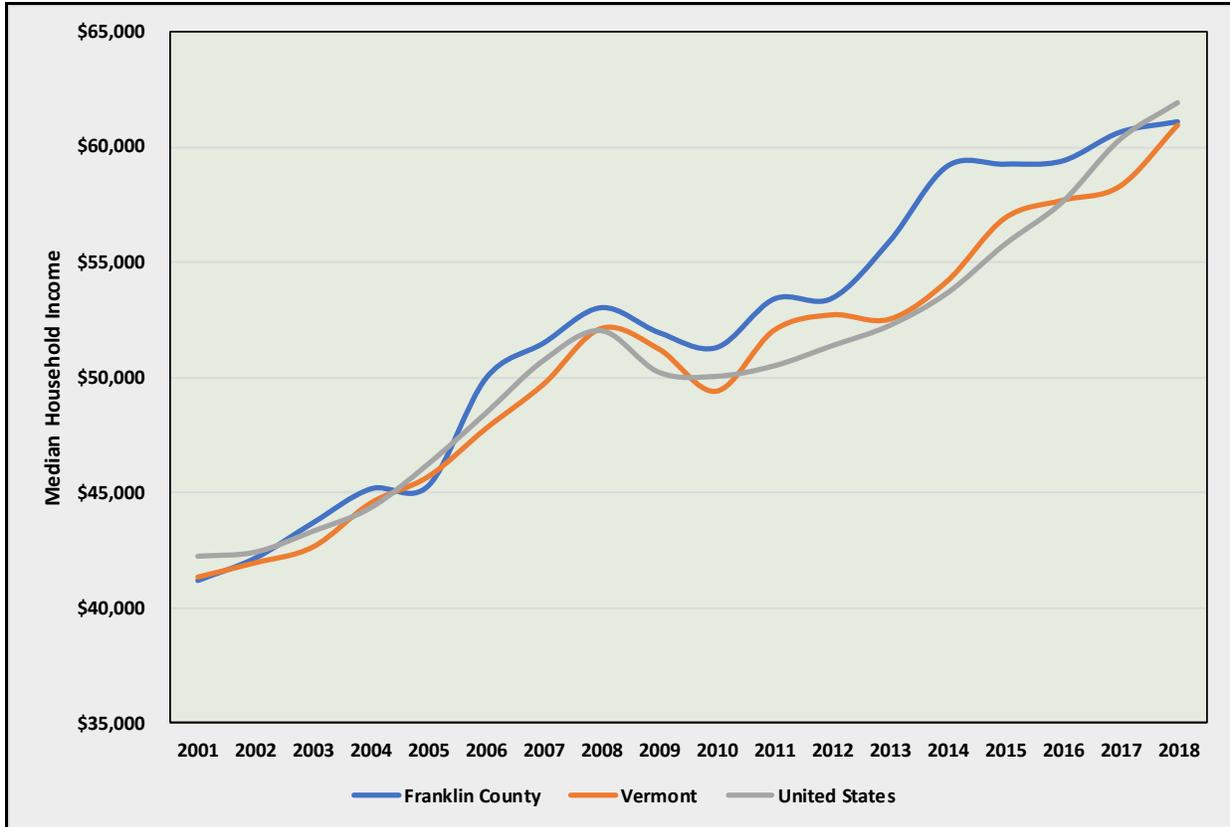
Median Income and Residents in Poverty

The most recent (2018) income statistics from the U.S. Census Bureau indicate that residents in the County have begun to experience slower growth when compared to residents of the nation as a whole. For

¹⁹ County per capita income is the total personal income of County residents for a specific year divided by the County resident population as of July 1. The per capita income measure should be used with caution. Since personal income is measured as a flow throughout the year, and population is measured at midyear, per capita income may be distorted should a significant change in population occur during the year. In any given year, per capita income may be exceptionally high or low as a result of unusual local conditions such as a bumper crop, catastrophe, or major construction project. Also, the presence of a large institutional population—such as residents of a state prison—can significantly lower per capita income estimates of an area. Such results may not reflect the economic well-being of the non-institutional population, and thus may lead to misleading interpretations. Since per capita income is only a simple average, it does not account for the concentration or distribution of personal income among County residents or households.

households in the County, the 2018 median income²⁰ was between that of the state and nation, with noticeably slowing in median income growth beginning in 2015 (Figure 15).

Figure 15. Median income in the Franklin County, State of Vermont, and the United States: 2001-2018



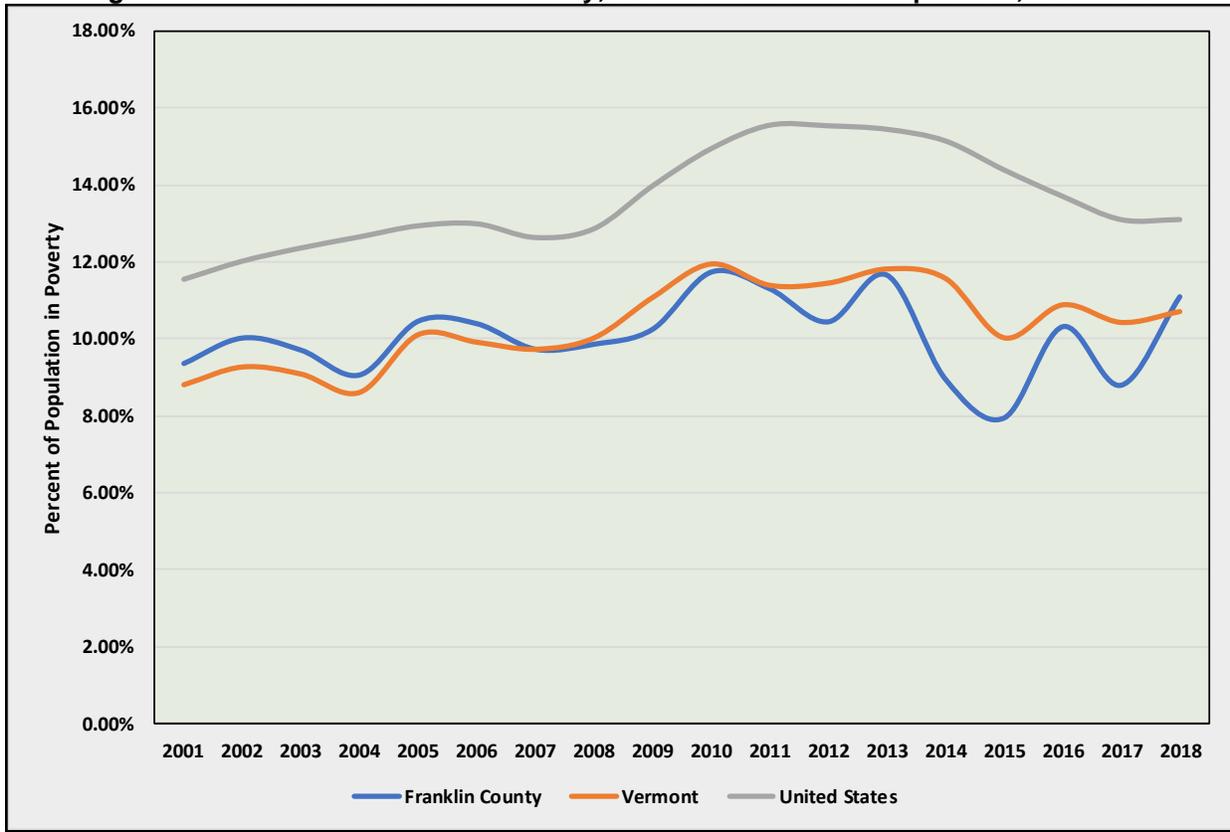
Sources: U.S. Bureau of Census

Prepared by Economic & Policy Resources, Inc.

Unlike per capita income, median incomes in the County been relatively stagnant since 2000, with short periods of accelerated growth or contraction.

²⁰ The median divides the income distribution into two equal parts, half having incomes above the median and the other half with incomes below the median.

Figure 16. Number of Persons in Poverty, as a Percent of Total Population, 2001-2018

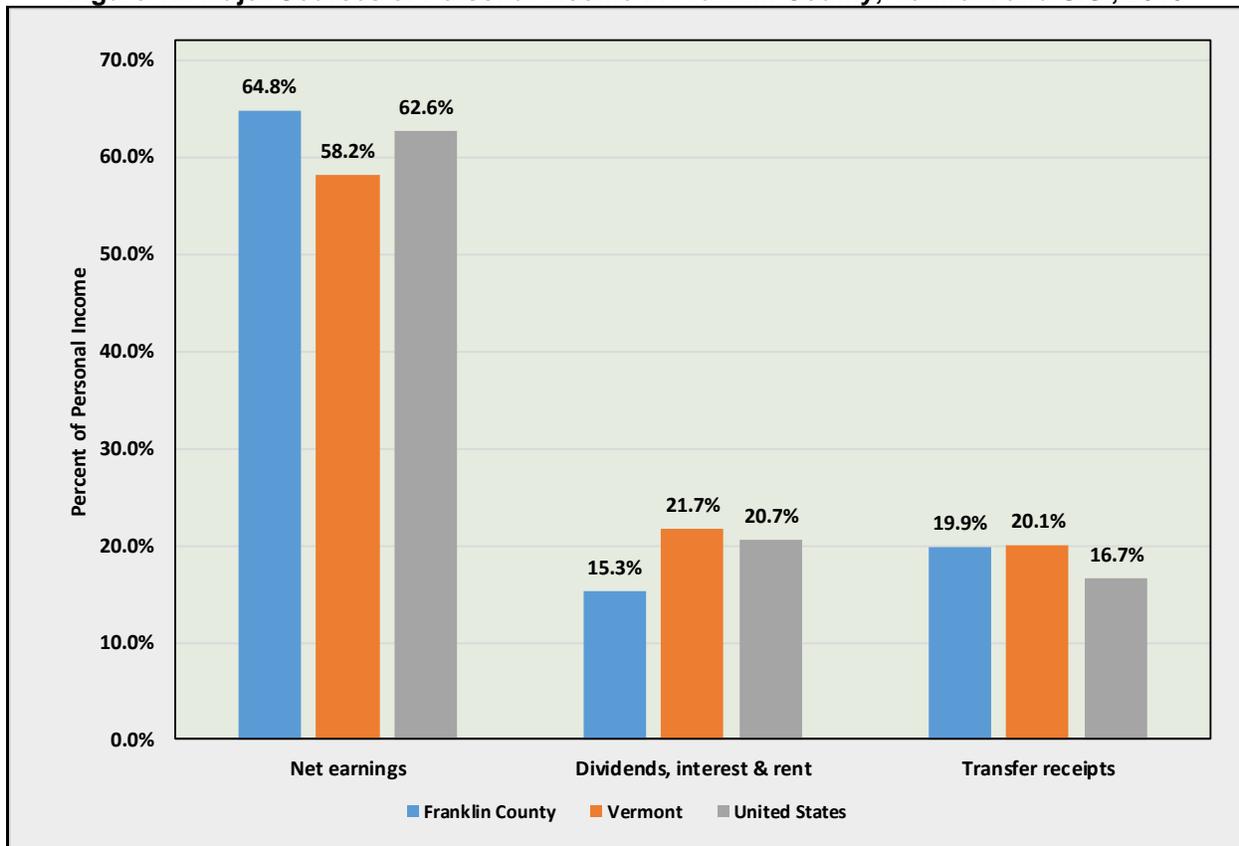


Sources: U.S. Bureau of Census

Prepared by Economic & Policy Resources, Inc.

The number of persons below the poverty line has been decreasing over the last five years (Figure 16). From 2001 to 2007, the poverty rate increased very slightly followed by a sharper rise that persisted for several years. The high poverty levels were due to the recent recession, during which no geographic region or industries were spared. The State and the County peaked in 2010 at 11.9 percent and 11.7 percent, respectively, and the nation peaked in 2011 at 15.6 percent. As of 2018, the poverty rate had dropped to 11.1 percent for the County, just above the 10.7 percent for the State and below the 13.1 percent for the nation.

Figure 17. Major Sources of Personal Income in Franklin County, Vermont and U.S., 2018



Source: U.S. Bureau of Economic Analysis

Prepared by Economic & Policy Resources, Inc.

Major Sources of Personal Income in Franklin County

Personal income consists of three major components: net earnings for labor services, property incomes, and transfer payments. Net earnings (\$1,481 million), which accounted for 64.8 percent of the County’s total personal income in 2018, can be considered payment for current labor services (Figure 17).

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 (\$804 million or 35.2 percent) of the County’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 (\$349 million) account for 15.3 percent of regional income; below the State average (21.7 percent). Transfer receipts, the other portion of non-labor income, accounts for 19.9 percent of the County’s total personal income (\$455 million); between the State’s share (20.1 percent) and the nation’s (16.7percent).

Table 9. Current Transfer Receipts in Franklin County: 2001, 2009, and 2018

Personal Current Transfer Receipts	2001		2009		2018	
	\$ Millions	Share	\$ Millions	Share	\$ Millions	Share
Personal current transfer receipts	\$170.2	100%	\$317.2	100%	\$454.7	100%
Transfer receipts of individuals from governments	\$160.2	94%	\$307.8	97%	\$443.0	97%
Retirement & disability insurance benefits	\$59.7	35%	\$95.2	30%	\$154.2	34%
Social Security benefits	\$53.9	32%	\$88.9	28%	\$146.9	32%
Excluding Social Security benefits 1/	\$5.8	3%	\$6.3	2%	\$7.2	2%
Medical benefits	\$65.2	38%	\$127.3	40%	\$195.3	43%
Medicare benefits	\$32.5	19%	\$62.3	20%	\$107.6	24%
Public assistance medical care benefits 2/	\$32.4	19%	\$64.2	20%	\$86.4	19%
Military medical insurance benefits 3/	\$0.3	0%	\$0.8	0%	\$1.3	0%
Income maintenance benefits	\$21.5	13%	\$46.8	15%	\$53.1	12%
Supplemental Security Income (SSI) benefits	\$4.7	3%	\$6.7	2%	\$8.4	2%
Earned Income Tax Credit (EITC)	\$3.7	2%	\$5.4	2%	\$8.4	2%
Supplemental Nutrition Assistance Program (SNAP)	\$2.8	2%	\$9.9	3%	\$9.6	2%
Other income maintenance benefits 4/	\$10.3	6%	\$24.8	8%	\$26.8	6%
Unemployment insurance compensation	\$5.2	3%	\$19.6	6%	\$4.7	1%
State unemployment insurance compensation	\$5.1	3%	\$19.4	6%	\$4.6	1%
Excluding state unemployment insurance compensation	\$0.0	0%	\$0.2	0%	\$0.1	0%
Veterans' benefits	\$3.9	2%	\$6.7	2%	\$16.1	4%
Education and training assistance	\$4.6	3%	\$7.6	2%	\$11.8	3%
Other transfer receipts of individuals from governments	\$0.2	0%	\$4.6	1%	\$7.9	2%
Transfer receipts of nonprofit institutions	\$4.2	2%	\$5.3	2%	\$6.4	1%
Transfer receipts of individuals from businesses	\$5.8	3%	\$4.1	1%	\$5.4	1%

Source: Bureau of Economic Analysis

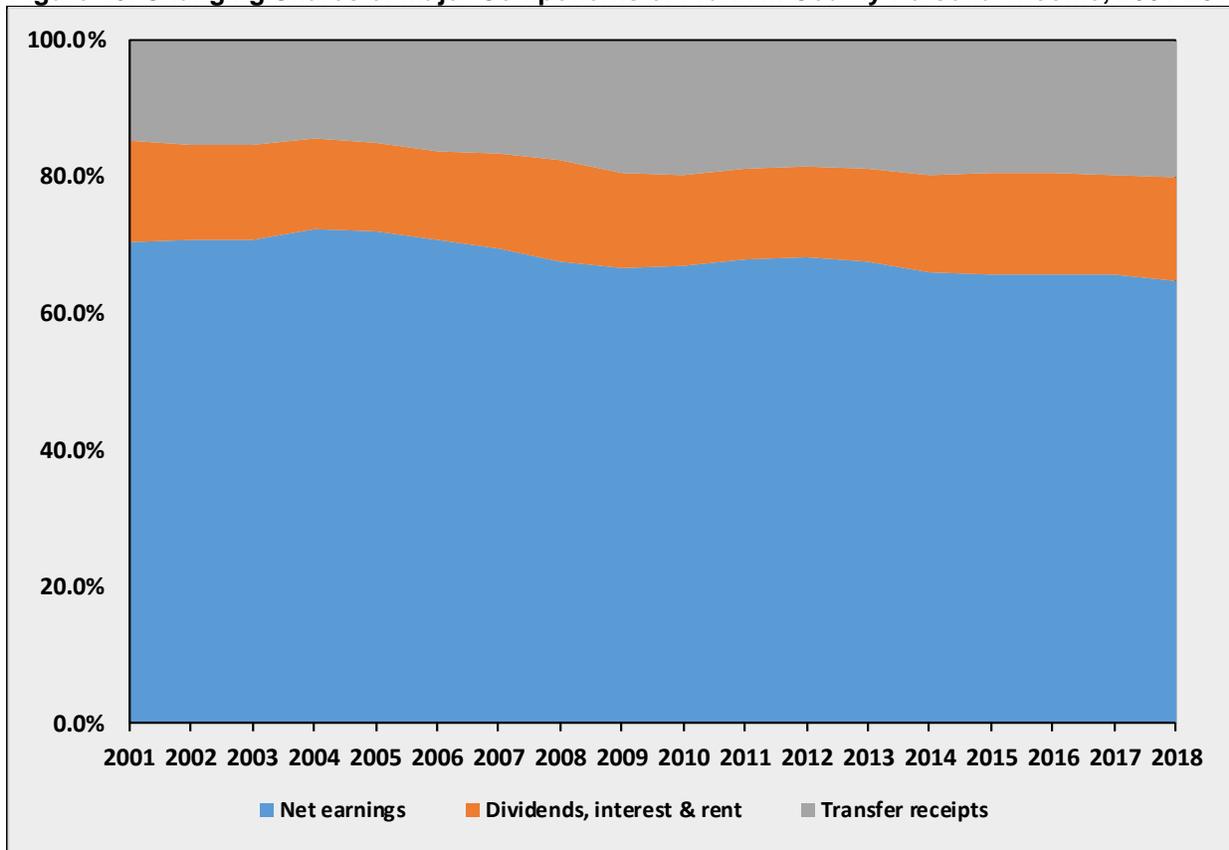
Prepared by Economic & Policy Resources, Inc.

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. Transfer receipts share of total personal income in the County are among the lowest in the State (only Addison, Chittenden, Grand Isle, and Lamoille were lower). There is a view where some might think "welfare payments" when hearing the term "transfer receipts." However, the above table (Table 9) shows that "welfare payments" (or income maintenance benefits) only accounted for 11.7 percent of transfer receipts in 2018, with unemployment insurance benefits adding another 1.0 percent. Transfers receipts included 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 benefits combined amounted to three-quarters of transfer payments for the County. Together with the 15 percent of personal income coming from dividends, rent and interest, non-labor income comes to 35 percent of the regional economy; and this is mostly earned-by/paid-to the region's senior citizens. Put another way, if one focused only on jobs and the earning associated with those jobs, over three-tenths of the economy would be ignored.

Between 2001 and 2018, there was a gradual decline in the share of personal income which stems from net earnings in the County (Figure 18)—reflecting the aging of the population. In 2001, net earnings represented 71 percent of the County's total person income; by 2018, net earnings' share of total income had fallen by about 5 percentage points. The share of property income fluctuated over the same period between 12.5 percent and 15 percent but ended the period at 15.3 percent, within half a percentage point of its 2001 share. Transfer payments' share of total personal income increased by five percentage points from 14.5 percent in 2001 to 19.9 in 2018.

Figure 18. Changing Shares of Major Components of Franklin County Personal Income, 2001-2018



Source: U.S. Bureau of Economic Analysis

Prepared by Economic & Policy Resources, Inc.

Growth in personal income—both total and major components—has slowed somewhat over the 2009-2018 period. While total personal income in the County grew 4.3 percent on an average annual basis during the early 2000s, total personal income growth slowed on average to 3.7 percent annually during the 2010s (Table 10). In both the County and the State, net earnings slowed by approximately 0.2 percentage points per year and growth in transfer receipts decreased by four percentage points. Only property income growth was greater during the 2010s than the 2000s. This is in contrast to national data where personal income increased by half a percentage point, driven by strong net earnings growth and property income. Particularly telling was the significant decline in net earnings growth during the last decade.

Table 10. Personal Income Change in Franklin County, Vermont, and the U.S.: 2001-2018

	Franklin County		Vermont		United States	
	2001-2009	2009-2018	2001-2009	2009-2018	2001-2009	2009-2018
Total income by residence	4.3%	3.7%	3.7%	3.5%	3.7%	4.4%
Net Earnings by residence	3.6%	3.4%	3.0%	2.8%	2.9%	4.2%
Dividends, interest & rent	3.5%	4.9%	2.1%	5.6%	3.3%	6.0%
Transfer receipts	8.1%	4.1%	8.3%	3.4%	7.6%	3.7%

Source: US Bureau of Economic Analysis
Prepared by Economic & Policy Resources

Industry Sources of Personal Income

Industry earnings, defined as earnings received by persons for direct participation in the production of goods and services, are among the best available measures to track changes in the level of economic activity

within Counties. Industry earnings have three major components: (1) wage and salary disbursements, defined as the monetary remuneration of private and public sector employees, including compensation of corporate officers; commissions, tips, and bonuses; and pay-in-kind that represents income to recipients; (2) other labor income, consisting of employer contributions to private pension and insurance funds, including privately insured workers' compensation funds and government-funded social insurance (e.g., unemployment insurance); and (3) proprietors' income is treated as income received by individuals and is composed of income from proprietorships, partnerships, and tax-exempt cooperatives.

The bulk of industry earnings in the County are from wages and salaries; of the total earnings of \$1,273 million in 2018, over 69 percent (or \$882 million) was composed of wages and salaries. This is roughly equivalent to the State (69.7 percent) and less than the nation's (71.0 percent) shares from wages and salaries. The remaining portions consist of other labor income (\$258.4 million) and proprietors' income (\$132.9 million). The share of other labor income amounted to 20.3 percent of total earnings in the County; greater than its share for the State (17.7 percent) and the nation (16.2 percent). The share of the County proprietors' income was 10.4 percent, less than both the State and nation (12.6 percent each).

Several characteristics relating to the composition, growth and changing structure of industry earnings in the County are shown in Table 11. In terms of shares, the County's earnings by industry have changed rather dramatically. With the slight exception of construction, goods-producing sectors' contribution of the County's total industry earnings was moderately smaller in 2018 compared with 2009; declining from 28 percent to 26 percent of total earnings. In particular, manufacturing in the region experienced the greatest decline in total earnings' shares. In contrast, a number of services-producing sectors in the region increased their total earnings' shares, particularly retail trade, administrative & waste services; health care and social assistance; accommodations and food services, other services. The share of civilian federal government earnings increased by the greatest amount over the period from 12.7 percent of industry earnings to 15.7 percent. Combined services and government now account for roughly 76 percent of total earnings, up from approximately 73 percent back in 2009.

Average Earnings per Job. Employment and earnings by broad industry groupings can be used to further compute the average earnings per job; for both wage & salary workers and self-employed. Changes in average wages and salary have steadily grown in real terms for the County over the 2001-2018 time period (Figure 19). Real average earnings for nonfarm proprietors fluctuated significantly between 2001 and 2018. Starting at \$25,600 in 2001 and dropping to just \$17,810 in 2008, real average earnings for nonfarm proprietors peaked in 2012 at \$28,170 and have since eroded to just \$21,411 in 2018. In contrast, average wage and salary workers' earnings increased more steadily from \$36,569 in 2001 to a peak of \$46,544 in 2018.

Average Earnings per Industry.

Tables 11 through 13 present data on the average annual earnings levels for the County overall and by industry and in comparison to the average annual earnings level overall and by industry for the State and for the U.S. economy as a whole. The data also track changes in the average earnings level for those three peer geographies during the most recent record-setting economic upcycle overall and by industry category.

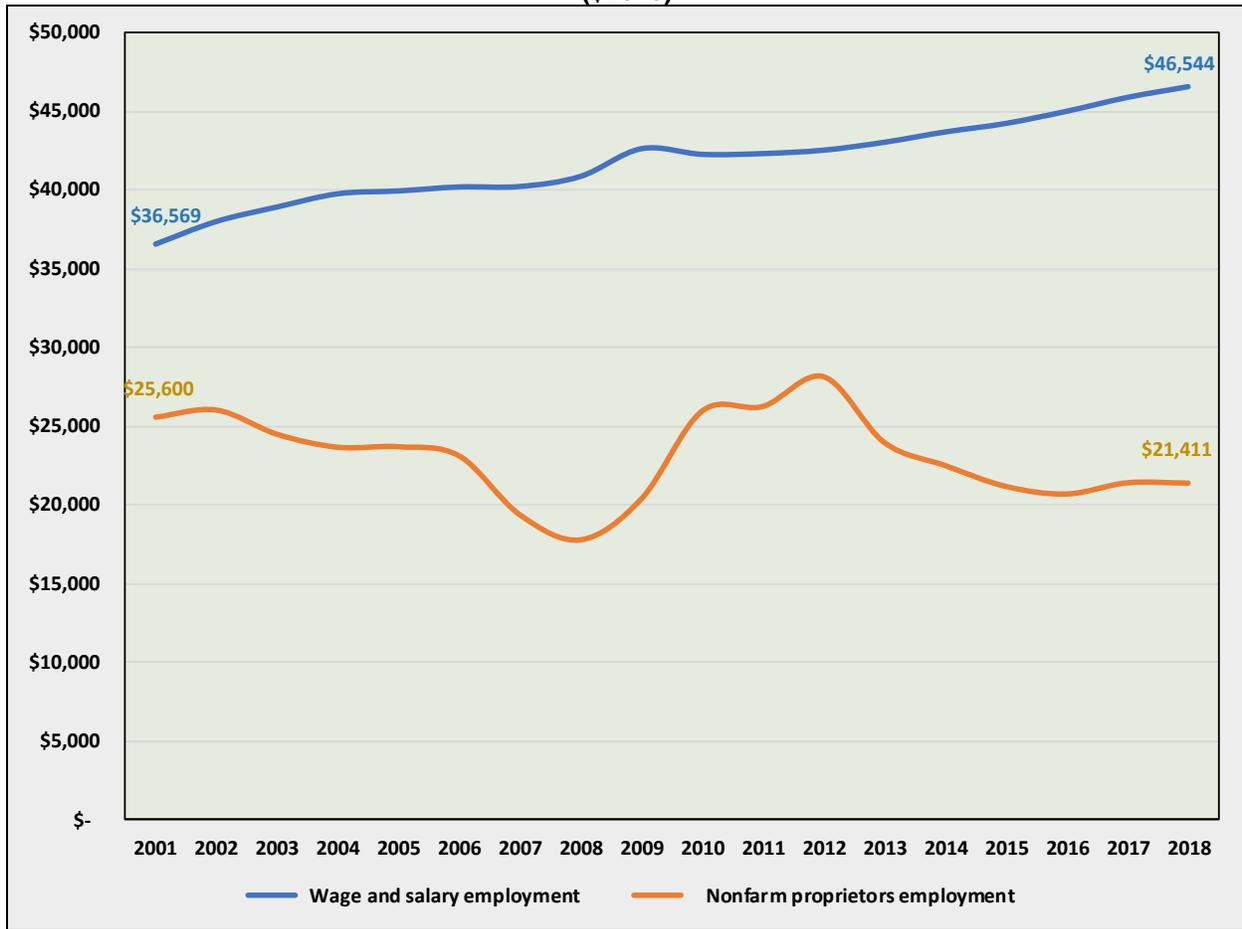
Table 11. Industry Earnings in Franklin County, 2001, 2009, and 2018

				Annual Change	
	2001	2009	2018	2001-2009	2009-2018
Personal income (millions of dollars)	1,175.4	1,648.7	2,284.3	4.3%	4.2%
Earnings by place of work	655.8	921.5	1,273.4	4.3%	4.1%
Wages and salaries	440.4	639.7	882.1	4.8%	4.1%
Supplements to wages and salaries	112.9	181.3	258.4	6.1%	4.5%
Proprietors' income	102.6	100.5	132.9	-0.2%	3.6%
Farm earnings	39.0	22.8	20.9	-6.5%	-1.1%
Nonfarm earnings	616.8	898.6	1,252.5	4.8%	4.2%
Private nonfarm earnings	475.8	634.0	857.7	3.7%	3.8%
Forestry, fishing, and related activities	(N/A)	(N/A)	7.5	(N/A)	(N/A)
Mining, quarrying, and oil and gas extraction	(N/A)	(N/A)	1.6	(N/A)	(N/A)
Utilities	(N/A)	(N/A)	5.0	(N/A)	(N/A)
Construction	37.2	54.2	71.5	4.8%	3.5%
Manufacturing	127.8	165.9	202.1	3.3%	2.5%
Wholesale trade	26.2	39.0	38.9	5.1%	0.0%
Retail trade	66.5	64.2	93.8	-0.4%	4.9%
Transportation and warehousing	(N/A)	(N/A)	51.8	(N/A)	(N/A)
Information	21.3	26.9	6.1	3.0%	-16.9%
Finance and insurance	18.2	17.3	22.1	-0.6%	3.1%
Real estate and rental and leasing	5.0	5.8	7.8	1.9%	3.6%
Professional, scientific, and technical services	17.5	(N/A)	43.5	(N/A)	(N/A)
Management of companies and enterprises	(N/A)	0.0	-0.3	(N/A)	(N/A)
Administrative & waste services	(N/A)	22.7	57.6	(N/A)	12.4%
Educational services	8.6	1.4	3.1	-20.2%	10.4%
Health care and social assistance	69.3	118.0	166.8	6.9%	4.4%
Arts, entertainment, and recreation	1.9	2.8	2.5	5.2%	-1.3%
Accommodation and food services	13.6	17.2	29.4	3.0%	6.9%
Other services (except government)	23.7	29.8	46.7	2.9%	5.8%
Government and government enterprises	141.0	264.6	394.8	8.2%	5.1%
Federal civilian	50.6	108.1	200.4	10.0%	8.0%
State government	19.1	27.3	37.1	4.6%	3.9%
Local government	67.0	116.8	147.1	7.2%	2.9%

Source: US Bureau of Economic Analysis

Prepared by Economic & Policy Resources

Figure 19. Average Wage & Salary and Nonfarm Proprietor Income for Franklin County, 2001-2018 (\$2018)



Source: U.S. Bureau of Economic Analysis

Prepared by Economic & Policy Resources, Inc.

Looking at Table 12 for comparative purposes, the data show that earnings levels for job sectors in the County and for the study region overall provided workers in 2018 with “close to State average” overall average annual earnings levels, and “above State average” annual average earnings levels overall and in the Farm sector (including the Farm Proprietors sub-category), the Manufacturing sector, the Transportation and Warehousing sector, and in the Federal Civilian sub-sector of the larger Government job sector category. All other major job sectors-categories had average earnings levels that were below the State average, implying that employers in the region in general pay below average wages. In addition, with the notable exception of average earnings levels in the manufacturing sector, the region’s higher earnings sectors-categories lost ground of the course of the current economic upturn as the regional economy recovered and then eventually expanded from the so-called U.S. “Great Recession.” Average annual earnings levels overall as presented in Table 11 reflected decent levels of average annual earnings in 2018 for many of the base industry sectors previously defined which reflect the regional-national-global competition where they may have previously (and likely currently) competed. The non-base industry sectors’ average annual earnings level in 2018 generally reflected the local economic conditions and resulting demand that these predominantly local industries experience-react to.

Table 12. Average Earnings by Industry for Franklin County, 2001, 2009, 2018 (\$2018)

	Average Earnings			Annual Change	
	2001	2009	2018	2001-2009	2009-2018
Earnings by place of work	\$ 42,165	\$ 45,991	\$ 49,763	1.1%	0.9%
Wages and salary employees	\$ 36,569	\$ 42,617	\$ 46,544	1.9%	1.0%
Proprietors employment	\$ 29,214	\$ 20,003	\$ 20,028	-4.6%	0.0%
Farm proprietors employment	\$ 47,114	\$ 16,883	\$ 7,318	-12.0%	-8.9%
Nonfarm proprietors employment	\$ 25,600	\$ 20,420	\$ 21,411	-2.8%	0.5%
By Industry					
Farm employment	\$ 42,583	\$ 24,488	\$ 18,762	-6.7%	-2.9%
Nonfarm employment	\$ 42,139	\$ 47,041	\$ 51,175	1.4%	0.9%
Private nonfarm employment	\$ 39,331	\$ 41,402	\$ 43,691	0.6%	0.6%
Forestry, fishing, and related activities	(N/A)	(N/A)	\$ 21,985	(N/A)	(N/A)
Mining, quarrying, and oil and gas extraction	(N/A)	(N/A)	\$ 29,182	(N/A)	(N/A)
Utilities	(N/A)	(N/A)	\$ 129,154	(N/A)	(N/A)
Construction	\$ 41,980	\$ 44,013	\$ 49,331	0.6%	1.3%
Manufacturing	\$ 57,027	\$ 65,689	\$ 69,223	1.8%	0.6%
Wholesale trade	\$ 47,310	\$ 55,854	\$ 63,679	2.1%	1.5%
Retail trade	\$ 31,585	\$ 27,337	\$ 31,279	-1.8%	1.5%
Transportation and warehousing	(N/A)	(N/A)	\$ 47,101	(N/A)	(N/A)
Information	\$ 42,872	\$ 55,572	\$ 41,721	3.3%	-3.1%
Finance and insurance	\$ 49,233	\$ 37,385	\$ 42,220	-3.4%	1.4%
Real estate and rental and leasing	\$ 15,952	\$ 11,697	\$ 10,798	-3.8%	-0.9%
Professional, scientific, and technical services	\$ 43,600	(N/A)	\$ 51,616	(N/A)	(N/A)
Management of companies and enterprises	(N/A)	\$ 1,985	(N/A)	(N/A)	(N/A)
Administrative & waste services	(N/A)	\$ 26,731	\$ 33,919	(N/A)	2.7%
Educational services	\$ 38,200	\$ 11,632	\$ 16,411	-13.8%	3.9%
Health care and social assistance	\$ 40,855	\$ 46,624	\$ 53,206	1.7%	1.5%
Arts, entertainment, and recreation	\$ 10,069	\$ 12,447	\$ 8,366	2.7%	-4.3%
Accommodation and food services	\$ 17,743	\$ 18,429	\$ 23,517	0.5%	2.7%
Other services (except government)	\$ 28,413	\$ 30,266	\$ 36,335	0.8%	2.1%
Government and government enterprises	\$ 55,518	\$ 69,823	\$ 81,505	2.9%	1.7%
Federal civilian	\$ 89,214	\$ 106,689	\$ 126,498	2.3%	1.9%
State government	\$ 61,679	\$ 70,714	\$ 33,520	1.7%	-8.0%
Local government	\$ 47,266	\$ 55,221	\$ 62,349	2.0%	1.4%

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Table 13. Average Earnings by Industry for Franklin County as a Percentage of Vermont Average Earnings, 2001, 2009, 2018 (\$2018)

	Franklin County as % of VT				
	2001	2009	2018	2001-2009	2009-2018
Total employment (Average Wage)	93%	97%	99%	3.8%	2.7%
Wage and salary employment	91%	97%	100%	5.9%	2.4%
Proprietors employment	96%	80%	80%	-16.8%	0.9%
Farm proprietors employment	286%	188%	78%	-97.8%	-110.3%
Nonfarm proprietors employment 2/	81%	78%	83%	-3.5%	5.0%
By industry (Average Wage)					
Farm employment	203%	149%	114%	-53.6%	-35.7%
Nonfarm employment	92%	98%	101%	5.9%	3.2%
Private nonfarm employment	88%	92%	92%	3.3%	0.4%
Forestry, fishing, and related activities			82%		
Mining, quarrying, and oil and gas extraction			64%		
Utilities			89%		
Construction	79%	83%	87%	4.2%	4.4%
Manufacturing	86%	94%	103%	8.7%	9.1%
Wholesale trade	74%	87%	90%	13.1%	2.5%
Retail trade	97%	87%	92%	-9.8%	4.4%
Transportation and warehousing			111%		
Information	84%	76%	71%	-8.4%	-5.4%
Finance and insurance	78%	64%	61%	-14.4%	-3.0%
Real estate and rental and leasing	67%	49%	59%	-17.8%	10.1%
Professional, scientific, and technical services	83%		79%		
Management of companies and enterprises		2%			
Administrative and support and waste management and remediation services		89%	88%		-0.8%
Educational services	121%	30%	40%	-91.2%	10.0%
Health care and social assistance	89%	92%	97%	3.3%	4.8%
Arts, entertainment, and recreation	40%	68%	43%	28.7%	-25.2%
Accommodation and food services	72%	75%	79%	3.2%	4.1%
Other services (except government and government enterprises)	80%	92%	93%	12.2%	1.3%
Government and government enterprises	101%	105%	114%	4.1%	8.4%
Federal civilian	109%	111%	111%	2.4%	-0.6%
State government	97%	92%	96%	-4.4%	4.0%
Local government	94%	97%	97%	2.5%	0.1%

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Table 13 (above) presents identical average annual earnings level overall and by industry sector data that compares average annual earnings levels in the County to annual average earnings levels in the U.S. economy. As would be expected, the data show that average annual earnings levels in the region overall and by industry sector in 2018 were generally significantly below U.S. averages—with the exception of the average annual earnings levels in the Federal civilian employment sector. In addition, during the current economic upcycle, it is also noteworthy that the region’s average annual earnings level overall lost ground versus the U.S. average annual earning level in 2018, in contrast to the overall positive gains registered by the region versus the State annual average earnings level overall.

Table 14. Average Earnings by Industry for Franklin County as a Percentage of U.S. Average Earnings, 2001, 2009, 2018 (\$2018)

	Franklin County as % of US				
	2001	2009	2018	2001-2009	2009-2018
Total employment (Average Wage)	75%	80%	80%	5.0%	-0.1%
Wage and salary employment	75%	81%	81%	6.1%	0.0%
Proprietors employment	73%	69%	58%	-3.8%	-10.9%
Farm proprietors employment	222%	86%	35%	-135.9%	-50.4%
Nonfarm proprietors employment 2/	61%	69%	61%	7.9%	-8.2%
By industry (Average Wage)					
Farm employment	174%	96%	72%	-78.0%	-24.4%
Nonfarm employment	74%	81%	81%	7.0%	0.4%
Private nonfarm employment	71%	75%	73%	4.4%	-2.7%
Forestry, fishing, and related activities			57%		
Mining, quarrying, and oil and gas extraction			25%		
Utilities			76%		
Construction	67%	75%	70%	7.7%	-4.7%
Manufacturing	78%	82%	81%	4.0%	-1.6%
Wholesale trade	61%	69%	70%	8.1%	0.7%
Retail trade	90%	81%	86%	-8.9%	4.3%
Transportation and warehousing			90%		
Information	47%	54%	33%	6.6%	-20.9%
Finance and insurance	56%	49%	49%	-6.9%	-0.2%
Real estate and rental and leasing	43%	57%	33%	14.0%	-23.5%
Professional, scientific, and technical services	55%		56%		
Management of companies and enterprises		2%			
Administrative and support and waste management and remediation services		70%	79%		8.9%
Educational services	102%	27%	37%	-74.6%	10.0%
Health care and social assistance	76%	79%	87%	2.3%	8.6%
Arts, entertainment, and recreation	33%	41%	24%	8.5%	-16.8%
Accommodation and food services	70%	75%	82%	4.8%	7.1%
Other services (except government and government enterprises)	77%	84%	91%	6.7%	6.7%
Government and government enterprises	86%	93%	101%	6.4%	8.2%
Federal civilian	99%	98%	104%	-0.6%	5.3%
State government	96%	98%	99%	2.3%	1.3%
Local government	76%	79%	79%	2.8%	0.2%

Prepared by Economic & Policy Resources, Inc.

Housing and Housing Prices. Housing availability and price can have just as much of an influence on the local area’s economy as job availability in the region. In 2018, 74.5 percent of housing units in the County were owner-occupied and 25.5 percent were renter-occupied. This is a significantly higher rate of owner occupancy than the nation (63.8 percent) and moderately higher than the state (70.7 percent).

Overall, residents in the County are slightly less likely to be housing-cost burdened²¹ compared to the state and nation. However, this is not necessarily the case when looking at owners and renters individually. Roughly 40 percent of renters in the County are housing cost burdened versus 47 percent in Vermont and 46 percent in the United States whereas 28 percent of owners in the County are cost burdened versus 29 percent in the State and just 23 percent in the United States as a whole.

²¹ The Department of Housing and Urban Development (“HUD”) considers those paying more than 30 percent of their monthly income on housing to be cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care.

Figure 19. Owner / Renter Occupancy Rate in Franklin County, Vermont, and the Nation, 2018

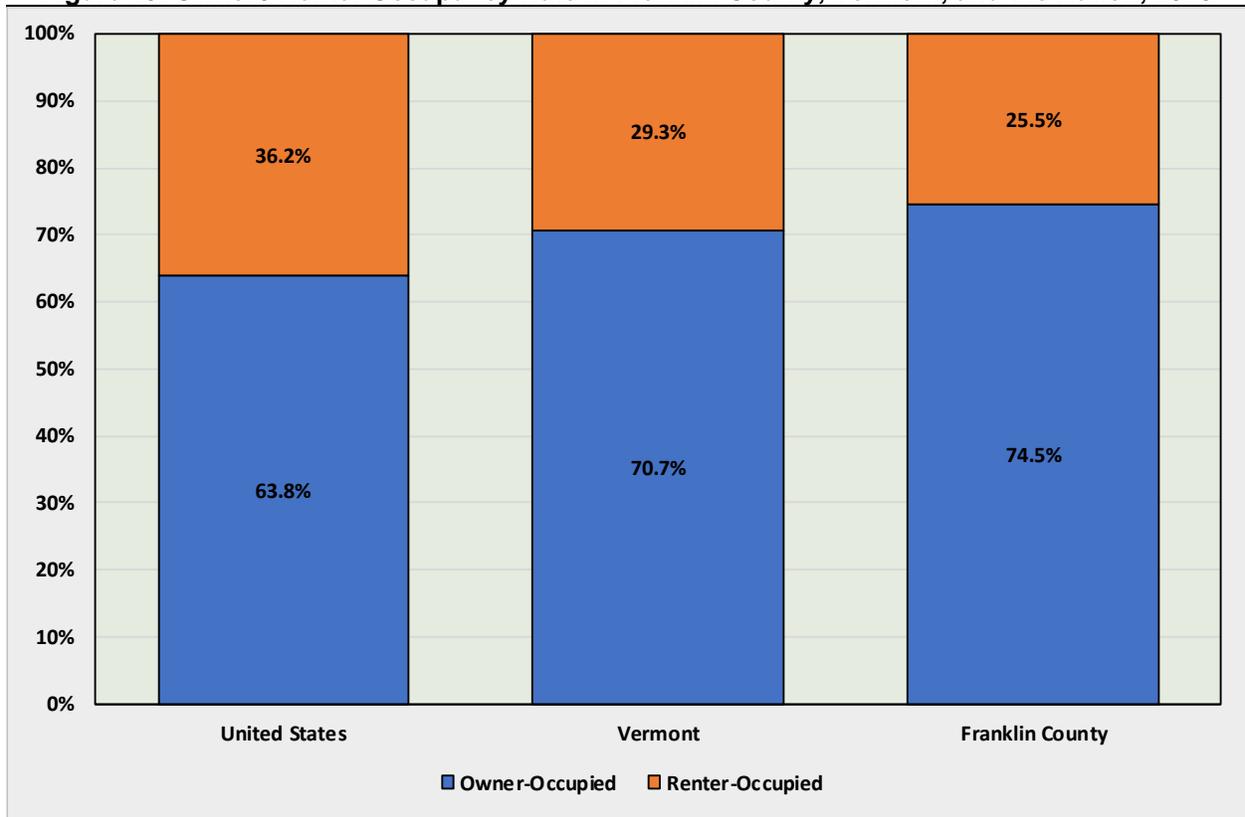
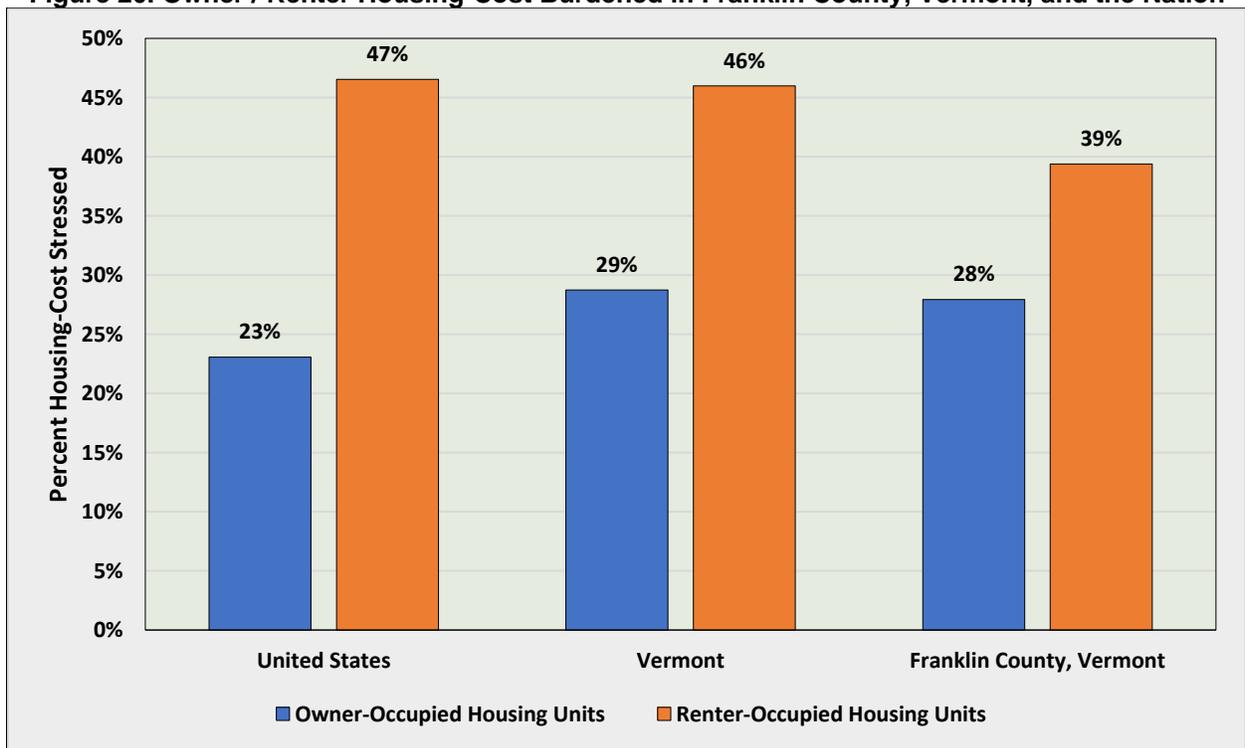
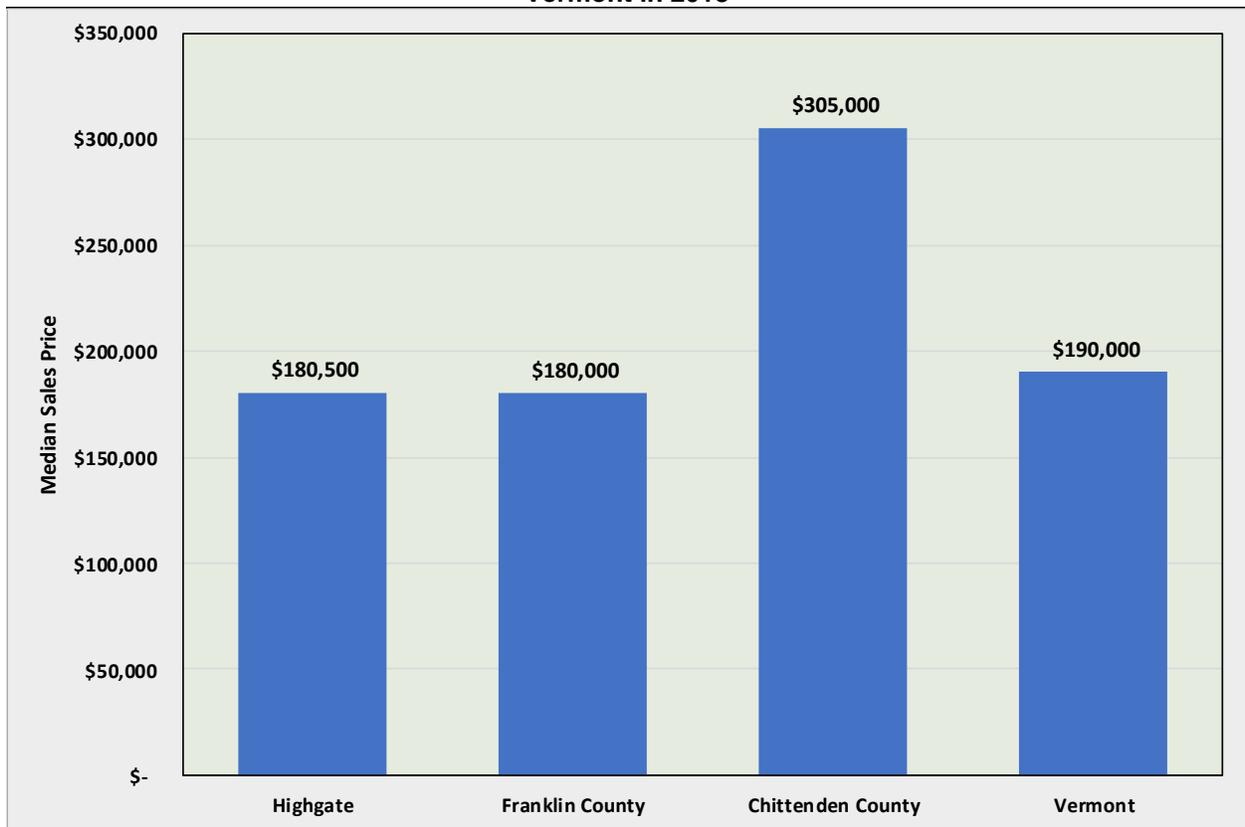


Figure 20. Owner / Renter Housing-Cost Burdened in Franklin County, Vermont, and the Nation



Overall, the above owner-occupied housing affordability indicators have also been somewhat affirmed by the relative single-family house sales price data for the Town and County in the Vermont Department of Taxes property sales data for 2018 for each Town and County in the State. Through transactions subject to the State’s Property Transfer Tax, the Vermont Department of Taxes compiles and published sales and price data which includes details such as type of property, total number sales, and average and median selling price of valid sales.²² In 2018, the median sales price residential property with less than 6 acres in the Town was \$180,500. The County and the State had a similar median price of \$180,000 and \$190,000, respectively, while the price in Chittenden County was nearly 70 percent higher at \$305,000 (see Figure 22).

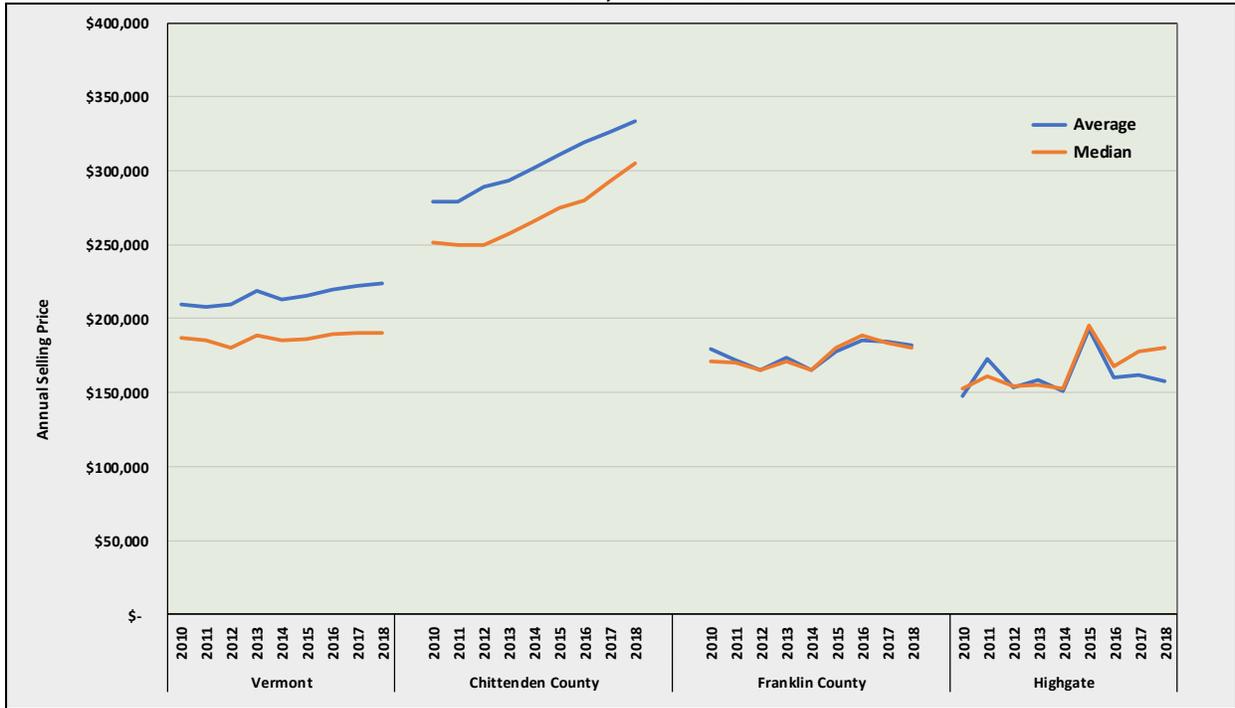
Figure 21. Median Sales Price of Valid Sales in Highgate, Franklin and Chittenden County and Vermont in 2018



Since 2010, the median sales price of residential property with less than 6 acres in Vermont has increased by just 1.6 percent or 0.2 percent annually and the County has experienced a similarly slow rate of growth (5.3 percent or 0.6 percent annually). The Town and Chittenden County have both experienced strong median sales price growth at 18.4 percent and 21.3 percent (corresponding to average annual growth rates of 2.1 percent and 2.4 percent annually, respectively). Despite the similar growth, housing price averages in for sales in Chittenden County began the period significantly more expensive than in the Town and appear to have risen at a rate that significantly exceeds the Town and the County averages over the same period (see Figure 22).

²² Valid sales represent true market transactions between a willing buyer and seller, excluding straw transfers or sales between members of the immediate family among others.

Figure 22. Median Sales Price of Valid Sales in Highgate, Franklin and Chittenden Counties, and Vermont, 2010-2018



From a strategic economic development perspective, the above data portray a Town and region/County that appears to be a generally lower cost, more affordable location to support additional economic development. Housing costs appear to be lower, somewhat more affordable (especially for renters) and appear to have risen at a somewhat lower rate than the State average, and the neighboring Chittenden County average.

Further, lower pay levels in many sectors suggest a more “blue collar” orientation to the job base, and less of an orientation to the “higher-paying” white collar character to the Town’s/region’s job structure. This “blue collar” orientation to the Town/regional job base (and considering the relatively lower levels of educational attainment in the Town/region’s population discussed earlier) potentially poses some challenges if the objective of strategic economic development in Town and region/County is the aim is to significantly increase the relative pay levels of the job base. On the upshot, the relatively lower average annual earnings level of many sectors in the Town/regional job base offers the strategic economic development opportunity to compare favorably to the cost to prospective strategic industry employers of expanding their operations and/or locating/re-locating existing operations to the Town/region from generally higher cost regions in comparison to the Town and region/County.

VI. Overview of Key Industries-Strategic Rate of Returns by Industry

Every local or regional economic base has a finite amount of resources available to support the growth and resiliency of its economy. From a strategic economic development perspective, and more specifically for the purposes of this current water/wastewater assessment study, the above means that this effort seeks to articulate a recognition that “not all economic development opportunities are created equal.” In other words, there are some strategic economic development opportunities for the Town and region that would that may offer a higher rate of economic return versus others if they were to gain access to utilize a part of the Town’s/region’s finite water/wastewater infrastructure asset base. The objective of this part of the overall water/wastewater infrastructure assessment-planning effort is to use research and analysis to first identify and the develop a hierarchy of strategic development options that will enable the Town/region to distinguish between potential strategic economic development opportunities that may be facilitated by this potential infrastructure expansion. The main goal being to develop a prioritized list of strategic development opportunities—if the infrastructure expansion was developed—that would delineate between opportunities that offer a higher rate of economic return versus those opportunities that may not provide as high an economic return potential to the Town and region.

For the purposes of this study, we evaluate the economic base with the assumption that the infrastructure expansion includes both municipal water and wastewater to the airport and surrounding area. Clearly, if municipal wastewater was not included in the project—or included in a later, second phase of the project—the future development options either on-site at the airport or for adjacent parcels will be more limited to only those industry categories where growth can be accommodated by on-site waste water treatment-disposal options. Such development options would likely include office space and other similar low employment density activities such as warehousing-distribution activities. In contrast, access to municipal wastewater would also allow the community to unlock access to the higher rate of return key sectors that would likely require access to municipal wastewater treatment capacity that would not otherwise be available with only the development—or even with the phased initial development—of the municipal water component. While we realize the option of developing both municipal water and wastewater together in one phase is significantly more expensive, the consensus of committee discussions and discussions with municipal officials indicates this is the preferred option as of the writing of this report. We concur with this approach as it will clearly help the Town to avoid underutilizing the “develop-able” resource that is being created through this effort.

In terms of the industry sectors evaluated in this study, we have identified a total of seven primary industry clusters as best matched to the strategic advantages/core competencies of the Town and region, and also those with the likely “highest rate of return” industries on which to focus the strategic economic development efforts for the Town of Highgate and Franklin County overall. These industry clusters—highlighted in the economic summary table below--were selected based on the analysis of various screening criteria of growth and expansion, competitiveness, linkage strength, and overall position of importance in the regional economy. Each of these primary clusters has a significant economic presence in the region and enjoys various competitive advantages. Highlights of each of these clusters are provided below, with potential growth scenarios illustrated for the region and configured for the added warehouse/office space in the planned industrial park situated in the Town of Highgate.

Table 15. Economic Summary of Franklin County: 2001, 2009 and 2018

Industry Sector	LQ--Measure of Specialization				Employment				Average Wages			
	2001	2009	2018	Change	2001	2009	2018	Change	2001	2009	2018	Change
Private	0.96	0.97	0.97	→	12,121	12,186	13,347	↑	\$26,035	\$35,184	\$43,696	↑
Agriculture	1.83	2.47	3.67	↑	252	356	566	↑	\$20,515	\$25,569	\$34,198	↑
Manufacturing	1.50	1.81	1.68	↓	2,885	2,700	2,587	↓	\$35,409	\$48,011	\$61,290	↑
Fabricated metals manufacturing	1.14	1.12	0.74	↓	224	184	132	↓	\$29,133	\$40,086	\$55,014	↑
Machinery manufacturing	0.56	0.72	2.37	↑	89	92	322	↑	\$27,987	\$33,489	\$50,107	↑
Food manufacturing	6.76	6.22	5.77	↓	1,234	1,135	1,132	→	\$36,449	\$45,467	\$59,304	↑
Beverage manufacturing	NA	NA	2.52	---	NA	NA	85	---	NA	NA	\$55,283	---
Chemical manufacturing	0.32	0.28	1.64	↑	36	28	55	↑	\$35,784	\$39,652	\$80,082	↑
Plastic & rubber manufacturing	0.57	0.81	2.08	↑	60	64	166	↑	\$29,706	\$29,355	\$83,372	↑
Warehousing & Storage	0.25	2.49	3.00	↑	15	200	418	↑	\$30,655	\$34,150	\$44,013	↑
Administrative and support services	0.19	0.54	1.04	↑	178	487	1,162	↑	\$18,689	\$28,772	\$32,538	↑
Health care and social assistance	1.34	1.21	1.06	↓	2,036	2,417	2,557	↑	\$27,168	\$36,577	\$47,997	↑
Ambulatory health care services	1.64	1.52	1.19	↓	859	1,109	1,082	→	\$27,993	\$38,579	\$44,994	↑
Government & government enterprises	1.17	1.33	1.53	↑	3,444	4,356	4,844	↑	\$40,936	\$60,753	\$81,505	↑
Federal civilian	2.21	3.04	4.22	→	769	1,164	1,584	↑	\$65,783	\$92,832	\$126,498	↑
Military	1.27	1.15	1.25	→	334	318	306	→	\$13,045	\$39,336	\$33,520	→
State government	0.65	0.63	0.68	→	419	444	476	↑	\$45,480	\$61,529	\$77,964	↑
TOTAL	1.00	1.00	1.00	---	15,565	16,542	18,191	↑	\$27,323	\$37,622	\$47,574	↑

Sources: US Bureau of Labor Statistics, QCEW; US Bureau of Economic Analysis, REIS

Prepared by Economic & Policy Resources, Inc.

Key Industry: Agriculture

Labeled as one of the “stars” —signifying growth and increased specialization, agriculture continues to be a keystone in the regional economy. Agriculture is the raw product storehouse for the region’s leading food processing and beverage manufacturing sectors.

Franklin County is the State’s leading agriculture County, particularly in milk production and maple syrup. According to the 2017 Census of Agriculture, farms in Franklin County produced livestock and crops valued at \$185.6 million. The County accounts for 25 percent of the state’s total milk production and about 40 percent of its maple syrup is tapped from trees in Franklin County. With maple syrup valued at \$22.6 million, Franklin County is the leading producing County in the U.S.

In 2018, there were 729 farms in the County with a total employment of 1,115 workers (comprised of 651 proprietors and 464 wage and salaried) and labor income amounting to \$20.9 million. As elsewhere in Vermont and throughout the nation, farmers and farm workers are in decline despite continued growth in agricultural production. Franklin County is no different; however, the decline in farm employment has been relatively slow. In 2001, total farm labor in the County was 1,242 workers—about 130 workers more than the most current year of 2018. Agriculture’s measure of specialization of 3.359 in 2018 underscores its increasing export orientation since 2001 (3.182).

In recent years, attention has focused on increasing the farmgate value for the farmer. Value-added agriculture essentially means increasing income from farm enterprises by innovative ways, including: growing a commodity for a special niche market; changing the form of a commodity before it is marketed; changing the way a commodity is packaged for market; changing the way a commodity is marketed; and

adding a new enterprise. Often, the value-added alternatives can be combined to yield an even higher income to the farm enterprise. The specialty crop of maple syrup is a poster child for value-added agriculture; which features prominently in Franklin County's farmscape.

Besides strongly linked to food processing and beverage manufacturers, agriculture is supported by transportation and warehousing; and ties to agribusiness services, ag chemicals and other farm suppliers, farm equipment wholesalers.

Key Industry: Food Processing and Beverage Manufacturing

Often in concert with a locally-dominant agriculture sector are food processing and beverage manufacturing industries. Food processing is the mainstay sector while beverage manufacturing is the upstart nascent industry for the region. Livestock and crops production are found in locally processed cornucopia of dairy and cheese products, meat products, snack foods, and maple and confectionery sweets. Beverage manufacturers are represented by a brewery and maple water.

In 2018, food processors numbered 16 companies with 1,132 workers and a total wage bill of \$67.2 million (average annual wages of \$59,326). Beverage manufacturers employ an estimated 85 workers with average wages of \$55,283. Measures of specialization in 2018 for food processing and beverage manufacturing indicate robust export orientation with marks of 5.77 and 2.52, respectively.

Regional expansion of food processing—either by growth from resident companies or the siting of a new company—will have significant economic effects on the regional economy and beyond. In the below table are the economic returns from an additional 100 job expansion in the local food processing industry.

These economic returns—as measured by employment, labor income, and value of output—will accrue to Franklin County and spread into neighboring counties and throughout the state. Industries most affected include agricultural production, other processors, packaging, transportation, wholesalers, utilities, and business services. As indicated, water and wastewater requirements for food processors are high. Finally, cross-border opportunities with Quebec vary depending upon the segment; for instance, for maple syrup production and processing, there are growing nexus of Quebec equipment suppliers that have expanded into Franklin County to service maple producers and processors.

Table 16. Potential Economic Effects of Food Processing Expansion

Potential Economic Impact (Economic Return of Adding 100 New Jobs in Food Manufacturing in Franklin County)					
1. Employment			2. Labor Income (\$000, \$2020)		
Franklin County			Franklin County		
Direct	Indirect	Total	Direct	Indirect	Total
100	52	152	\$6,112.3	\$2,882.4	\$8,994.7
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)		
Direct	Indirect	Total	Direct	Indirect	Total
0	51	51	\$0.0	\$3,174.3	\$3,174.3
Rest of Vermont			Rest of Vermont		
Direct	Indirect	Total	Direct	Indirect	Total
0	34	34	\$0.0	\$1,784.6	\$1,784.6
State of Vermont (Franklin + Contiguous + Rest)			State of Vermont (Franklin + Contiguous + Rest)		
Direct	Indirect	Total	Direct	Indirect	Total
100	149	249	\$6,112.3	\$7,841.3	\$13,953.7
3. Value of Output (\$000, \$2020)					
Franklin County					
Direct	Indirect	Total			
\$76,337.9	\$10,626.5	\$86,964.5			
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)					
Direct	Indirect	Total			
\$0.0	\$7,989.4	\$7,989.4			
Rest of Vermont					
Direct	Indirect	Total			
\$0.0	\$5,043.5	\$5,043.5			
State of Vermont (Franklin + Contiguous + Rest)					
Direct	Indirect	Total			
\$76,337.9	\$23,659.3	\$99,997.3			
Notes:					
Water/Wastewater Requirements:		High			
Linkage with other industries:		High (especially with agriculture)			
Cross-border opportunities with Quebec:		Mixed--strong with maple (equipment suppliers)			
<i>Prepared by Economic & Policy Resources, Inc.</i>					

In similar fashion, the economic returns for an expansion in regional beverage manufacturing are shown in the below table.

Economic returns from a simulated expansion of beverage manufacturing will ripple throughout the local, regional and state economy in expanded jobs and associated labor incomes and increased output. Linkages with other industries as agriculture, food processors, transportation and warehousing, utilities, wholesalers and retailers, and business services are significant. As for food processing, water and wastewater requirements for beverage manufacturing are high.

Table 17. Potential Economic Effects of Beverage Manufacturing Expansion

Economic Return of Adding 100 New Jobs in Beverage Manufacturing in Franklin County					
1. Employment			2. Labor Income (\$000, \$2020)		
Franklin County			Franklin County		
Direct	Indirect	Total	Direct	Indirect	Total
100	63	163	\$5,697.9	\$3,799.8	\$9,497.8
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)		
Direct	Indirect	Total	Direct	Indirect	Total
0	65	65	\$0.0	\$4,454.1	\$4,454.1
Rest of Vermont			Rest of Vermont		
Direct	Indirect	Total	Direct	Indirect	Total
0	41	41	\$0.0	\$2,412.3	\$2,412.3
State of Vermont			State of Vermont		
Direct	Indirect	Total	Direct	Indirect	Total
100	169	269	\$5,697.9	\$10,666.3	\$16,364.2
3. Value of Output (\$000, \$2020)					
Franklin County					
Direct	Indirect	Total			
\$104,941.8	\$11,978.0	\$116,919.8			
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)					
Direct	Indirect	Total			
\$0.0	\$11,259.6	\$11,259.6			
Rest of Vermont					
Direct	Indirect	Total			
\$0.0	\$6,285.8	\$6,285.8			
State of Vermont					
Direct	Indirect	Total			
\$104,941.8	\$29,523.4	\$134,465.2			
Notes:					
Water/Wastewater Requirements:		High			
Linkage with other industries:		High (especially with agriculture)			
Cross-border opportunities with Quebec:		Modest			
<i>Prepared by Economic & Policy Resources, Inc.</i>					

Key Industry: Machinery Manufacturing and Fabricated Metals Manufacturing

Nationally, the machinery manufacturing industry includes about 30,600 companies with annual output valued at about \$409 billion. The industry employs over 1.1 million workers with average annual wages of \$71,740. In Vermont, there are 62 machinery companies operating, employing 2,784 workers with average annual wages of \$63,560. Franklin County has three companies in machinery manufacturing employing 332 workers with average annual wages of \$48,570.

The machinery manufacturing is fragmented overall with concentration in numerous segments. Demand for machinery depends on overall industrial activity and on the health of such sectors as agriculture, construction, and power generation. The most recent recession hollowed out this historically cyclical industry, but since expanded during the recovery.

The profitability of individual companies depends on both engineering expertise and efficient production. Large companies have economies of scale in purchasing; whereas small companies compete effectively by specializing in various niche markets. Generally, the industry is highly capital-intensive, with average annual revenues per worker around \$300,000.

Major products are farm and construction machinery, manufacturing machinery, metal-working machinery, commercial machinery, and general machinery such as engines and pumps. Some products are finished; others are components used in further production, and still others are custom-designed for a particular manufacturing process.

Manufacture involves producing and assembling components. Companies either make or buy components with various types of mechanical, hydraulic, and electrical control systems. Manufacturing often involves forging, machining, and welding activities requiring skilled labor. Products often have a high engineering content. Product design usually involves computer-aided design (CAD) systems and often tied directly to computer-aided manufacturing (CAM) process.

Typical customers are industrial companies or commercial users. Sales are generally handled by an in-house sales force complemented with manufacturers' representatives and independent dealers. Sales people often must have extensive engineering knowledge. Technical innovation is critical in many industry segments. Research and development costs are often high and patents are generally used to protect unique designs and features.

Business challenges for the machinery manufacturing sector include such critical issues as (1) dependence upon US and global economics; and (2) growing competition from foreign manufacturers. Other business challenges include (1) highly fluctuating raw material (particularly metal) prices; (2) export difficulties; (3) rapid technological improvements, making it difficult for smaller producers to compete; and (4) environmental risks.

Machinery is not the leading manufacturing sector in the region; however its employment base has more than tripled in size over the last ten years. Its 2018 measure of specialization is 2.371, meaning that a sizeable share of its output is shipped to customers outside the region.

A potential expansion of machinery manufacturing will increase economic activity both in the region and beyond. Linked sectors include other manufacturers, utilities, business services, and transportation. Requirements for water and wastewater are toward the high portion of the services spectrum.

Table 18. Potential Economic Effects of Machine Manufacturing Expansion

Economic Return of Adding 100 New Jobs in Machine Manufacturing in Franklin County						
1. Employment			2. Labor Income (\$000, \$2020)			
Franklin County			Franklin County			
Direct	Indirect	Total	Direct	Indirect	Total	
100	21	121	\$5,164.4	\$1,222.7	\$6,387.1	
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			
Direct	Indirect	Total	Direct	Indirect	Total	
0	24	24	\$0.0	\$1,592.0	\$1,592.0	
Rest of Vermont			Rest of Vermont			
Direct	Indirect	Total	Direct	Indirect	Total	
0	14	14	\$0.0	\$818.0	\$818.0	
State of Vermont			State of Vermont			
Direct	Indirect	Total	Direct	Indirect	Total	
100	59	159	\$5,164.4	\$3,632.6	\$8,797.1	
3. Value of Output (\$000, \$2020)						
Franklin County						
Direct	Indirect	Total				
\$25,576.5	\$3,006.0	\$28,582.5				
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)						
Direct	Indirect	Total				
\$0.0	\$3,546.6	\$3,546.6				
Rest of Vermont						
Direct	Indirect	Total				
\$0.0	\$1,856.6	\$1,856.6				
State of Vermont						
Direct	Indirect	Total				
\$25,576.5	\$8,409.3	\$33,985.7				
Notes:						
Water/Wastewater Requirements:		High				
Linkage with other industries:		Modest				
Cross-border opportunities with Quebec:		Modest				
<i>Prepared by Economic & Policy Resources, Inc.</i>						

Nationally, the fabricated metal products industry includes about 58,200 companies with output valued at \$407 billion in 2018. The industry employs over 1.4 million workers with average annual wages of \$57,700. In Vermont, there are 108 fabricated metals companies operating, employing 1,941 workers with average annual wages of \$52,050. Franklin County has six companies in fabricated metals employing an estimated 132 workers with average annual wages of \$55,000.

The major segments of the fabricated metals industry include architectural and structural products; forging and stamping; machining; cutlery, tools, and kitchenware; boilers, tanks, and containers; hardware; springs and wires; coating, plating, and polishing; and valve and pipe manufacturing. Leading product categories by revenue include machine shops and fabricated structural metals (each accounting for 10 percent) as well as sheet metal work, precision turned products, metal windows and doors, metal cans, and metal coating and engraving (each about 5 percent). Other major products and services include industrial valves and metal stamping.

Companies manufacture mainly simple metal parts used by industrial customers, such as those making autos and airplanes, machinery, appliances, and computers. Some companies make simple finished products like metal cans, tools, plumbing fixtures, and structural steel members. Most companies operate a single manufacturing facility.

Basic raw materials are ferrous and nonferrous metals, such as carbon, alloy and stainless steels, aluminum, titanium, brass, copper and various alloys. Raw materials are brought in semi-finished form (slabs and

billets) and finished form (plates, coils, sheets, wire, bars, rails, beams) either directly from primary metal processors or more often from large metals distributors.

Generally, there are three major metal processing operations: fabrication; preparation; and finishing. Fabrication includes processes such as punching, cutting, bending, welding, coil processing, roll forming, laser cutting, and stamping. Machining, a fabrication method, uses a wide variety of machine tools to cut or form material to precise specifications. Preparation includes cleaning and surfacing metal with chemicals. Finally, finishing includes plating, polishing, coloring and coating.

Many companies have highly automated production lines. Typical equipment include presses, screw machines, rotary transfer machines, computer controlled (CNC) single and multiple spindle lathes, and turning and machining centers. Some companies use computer-aided drafting (CAD) and computer-aided manufacturing (CAM) equipment.

Engineering skills are needed to design products and production processes; whereas, most production jobs in fabricated metals are semiskilled; with average hourly industry pay slightly lower than the national average.

Several challenges face the fabricated metals industry including such critical issues as (1) demand for fabricated metals is heavily driven by overall U.S. manufacturing levels, especially for equipment and machinery; (2) import competition keeps prices low for fabricated metal products; (3) fluctuating raw material costs, particularly with higher trending costs for metals; (4) customer concentration is common for many producers; (5) increased orientation toward specialization, due to the engineer-intensive nature and concentration on niche products; and (6) focus on alternative materials, such as plastics and ceramics which are replacing metals.

Fabricated metals have been in relative decline over the last two decades in the region. A significant expansion (most likely from a new regional entrant) in fabricated metals would increase this sector's regional economic influence. Linkages to other regional industries are modest; but needed water and wastewater services tend to be high as for other industrial users.

Table 19. Potential Economic Effects of Fabricated Metals Manufacturing Expansion

Economic Return of Adding 100 New Jobs in Fabricated Metals Manufacturing in Franklin County					
1. Employment			2. Labor Income (\$000, \$2020)		
Franklin County			Franklin County		
Direct	Indirect	Total	Direct	Indirect	Total
100	20	120	\$5,670.1	\$1,124.3	\$6,794.4
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)		
Direct	Indirect	Total	Direct	Indirect	Total
0	24	24	\$0.0	\$1,544.7	\$1,544.7
Rest of Vermont			Rest of Vermont		
Direct	Indirect	Total	Direct	Indirect	Total
0	14	14	\$0.0	\$762.0	\$762.0
State of Vermont			State of Vermont		
Direct	Indirect	Total	Direct	Indirect	Total
100	58	158	\$5,670.1	\$3,431.0	\$9,101.1
3. Value of Output (\$000, \$2020)					
Franklin County					
Direct	Indirect	Total			
\$24,174.4	\$2,676.5	\$26,850.9			
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)					
Direct	Indirect	Total			
\$0.0	\$3,337.5	\$3,337.5			
Rest of Vermont					
Direct	Indirect	Total			
\$0.0	\$1,532.9	\$1,532.9			
State of Vermont					
Direct	Indirect	Total			
\$24,174.4	\$7,546.8	\$31,721.2			
Notes:					
Water/Wastewater Requirements:		High			
Linkage with other industries:		Modest			
Cross-border opportunities with Quebec:		Modest			
<i>Prepared by Economic & Policy Resources, Inc.</i>					

Key Industry: Warehousing and Storage

Companies in this sector operate facilities to store goods and may provide related logistics services. Major services include general warehousing and refrigerated warehousing; and to a lesser extent, records storage and farm products storage. [Not included in this sector are lessors of miniwarehouses and self-storage units.] Many operators offer contract warehousing services, in which a warehouse is dedicated to a single major customer; while others offer public warehousing services in which warehouse facilities are shared by small customers not needing dedicated facilities.

The U.S. warehousing and storage industry includes about 18,200 establishments, employing 1.1 million workers with average wages of \$43,083 per annum. The value of output amounted to \$149.6 billion in 2018; its compound annual growth rate since 2001 is 8.2 percent—one of the highest growth rates among all industries. In Vermont, there are 45 warehousing and storage establishments, employing 1,301 workers with average annual wages of \$33,835. Franklin County, with only 9 establishments has about one-fourth of the state’s employment; its workers average \$32,997 in annual wages.

Demand for warehousing and storage is generally driven by the flow of goods through the economy, with other demand factors including industrial production, import volumes, and office vacancy rates. The rapid rise in online shopping in markets across the globe, along with expectations for faster and more secure delivery is significantly increasing demand for warehouse space.

Warehousing and storage growth in Franklin County is most associated with industrial production and cross-border trade with Quebec/Canada. Between 2001 to 2018, this sector’s compound annual growth

trajectory is 20.3 percent. Warehousing and storage's measure of specialization has increased from an insignificant 0.250 in 2001 to a 3.000 in 2018.

An expansion in regional warehousing and storage capacity, with an addition of 100 workers; would continue to support cross-border trade and current industrial production in the region. Economic benefits would extend into other parts of the region and beyond in added jobs and associated labor incomes.

Table 20. Potential Economic Effects of Warehousing & Storage Expansion

Economic Return of Adding 100 New Jobs in Warehousing & Storage in Franklin County						
1. Employment			2. Labor Income (\$000, \$2020)			
Franklin County			Franklin County			
Direct	Indirect	Total	Direct	Indirect	Total	
100	16	116	\$4,536.3	\$787.7	\$5,324.0	
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			
Direct	Indirect	Total	Direct	Indirect	Total	
0	19	19	\$0.0	\$1,202.4	\$1,202.4	
Rest of Vermont			Rest of Vermont			
Direct	Indirect	Total	Direct	Indirect	Total	
0	11	11	\$0.0	\$617.3	\$617.3	
State of Vermont			State of Vermont			
Direct	Indirect	Total	Direct	Indirect	Total	
100	46	146	\$4,536.3	\$2,607.4	\$7,143.8	
3. Value of Output (\$000, \$2020)						
Franklin County						
Direct	Indirect	Total				
\$22,187.8	\$1,775.5	\$23,963.3				
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)						
Direct	Indirect	Total				
\$0.0	\$2,527.9	\$2,527.9				
Rest of Vermont						
Direct	Indirect	Total				
\$0.0	\$1,313.2	\$1,313.2				
State of Vermont						
Direct	Indirect	Total				
\$22,187.8	\$5,616.6	\$27,804.4				
Notes:						
Water/Wastewater Requirements:			Low-High			
Linkage with other industries:			Low-Medium			
Cross-border opportunities with Quebec:			Modest-High			
<i>Prepared by Economic & Policy Resources, Inc.</i>						

Key Industry: Administration and Support Services

Companies in this industry provide support services for the day-to-day operations of other businesses. There is a panoply of support services including office administration, employment services, temp. help services, call centers, business services, credit bureaus and collection agencies, travel arrangements and tour operators, security services, services to buildings, janitorial services and other support services. All of the activities performed in this sector are ongoing routine support businesses and organizations must do and have traditionally done for themselves. Ongoing trends are to contract or purchase such services from businesses that specialize in activities with more efficient delivery.

Demand in this sector is driven by new business growth, job growth, increased corporate sales, and increasing disposable income. In general, demand for business services is coincident with population growth; and for many kinds of business services, occupied office space happens to be a key driver. Most segments of this sector feature low barriers to entry, as a small amount of capital investment is required to

launch businesses such as landscaping, cleaning, or staffing firms. Such a low barrier can result in heightened competition not only among small companies but also with much larger established companies with more resources.

The business services industry is highly fragmented and newer technologies have increased competition, forcing traditional providers to adapt to survive. Online service platforms are the industry platforms – LinkedIn and Indeed have transformed the personnel staffing industry; Google Travel and Airbnb have upended the travel arrangement sector. In order to compete with these industry disrupters, established companies need to upgrade their own technologies and provide superior customer service.

Business services have experienced robust growth over the last two decades. Compound annual growth rates of sector output and revenues have been in excess of 5 percent. The U.S. industry includes 522,200 establishments employing 8.8 million workers with labor incomes averaging \$40,000. In Vermont, there were 1,812 establishments employing 11,217 workers with average annual wages of \$41,433. Business services in Franklin County, like the state and nation, have experienced remarkable growth with employment increasing nearly ten-fold since 2001. In 2018, there were 75 business services establishments in the region with 1,122 employees and average annual wages of \$36,524.

An expansion of the business services sector²³ will have modest overall economic effects within the region and beyond, due to the nature of their largely local market orientation and limited connections with other sectors. Requirements for water and wastewater services is low compared to other industries.

²³ Although it is a governmental sector (and is therefore not a private sector employer), we would also suggest that the economic effects of the expansion of federal government agency staff (such as the U.S. Citizens and Immigration Service) and possibly even the expansion of the National Guard are similar, characteristically speaking, to the expansion of jobs in this private sector job category. In many respects, the attraction of federal dollars to the Town and region act as dollar-importing, higher-paying services sectors in the private sector. This appears to be the case, even though they are driven by federal tax dollars, This is because the State and region are dollar-importing in nature and the relatively low contribution by State and regional taxpayers into the federal treasury (relative to what is received back from the federal treasury) act to expand the size of the Town and regional economic pie through such employment adding activities.

Table 21. Potential Economic Effects of Administrative & Support Services Expansion

Economic Return of Adding 100 New Jobs in Administrative & Support Services in Franklin County						
1. Employment			2. Labor Income (\$000, \$2020)			
Franklin County			Franklin County			
Direct	Indirect	Total	Direct	Indirect	Total	
100	8	108	\$3,354.6	\$410.6	\$3,765.3	
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)			
Direct	Indirect	Total	Direct	Indirect	Total	
0	11	11	\$0.0	\$664.0	\$664.0	
Rest of Vermont			Rest of Vermont			
Direct	Indirect	Total	Direct	Indirect	Total	
0	6	6	\$0.0	\$323.4	\$323.4	
State of Vermont			State of Vermont			
Direct	Indirect	Total	Direct	Indirect	Total	
100	25	125	\$3,354.6	\$1,398.1	\$4,752.7	
3. Value of Output (\$000, \$2020)						
Franklin County						
Direct	Indirect	Total				
\$7,905.4	\$865.3	\$8,770.7				
Contiguous Counties (Grand Isle, Chittenden, Lamoille, Orleans)						
Direct	Indirect	Total				
\$0.0	\$1,338.6	\$1,338.6				
Rest of Vermont						
Direct	Indirect	Total				
\$0.0	\$665.6	\$665.6				
State of Vermont						
Direct	Indirect	Total				
\$7,905.4	\$2,869.5	\$10,774.8				
Notes:						
Water/Wastewater Requirements:			Low			
Linkage with other industries:			Low			
Cross-border opportunities with Quebec:			Low-Modest			
<i>Prepared by Economic & Policy Resources, Inc.</i>						

VII. Appendix

Example of Job Creation Potential-Adjacent Parcel in Town of Highgate with Municipal Water and Wastewater

Given our experience with more than 35 years of experience in economic analysis and strategic economic development planning, we understand that the economics of such a project can be complicated and at times somewhat confusing. During the course of this project, Town staff was actively engaged in assessing grant funding options to assist with the further development of this water/wastewater project right from the next stage of planning right through to the actual construction of the expanded infrastructure for the Town.

In assessing likely grant funding options, Town staff asked EPR to provide an illustrative estimate of potential job creation for a parcel that was adjacent to the airport. The parcel was ideal for an illustrative job creation estimate because the owner had completed at least one set of conceptual development plans for the parcel that could be used to make an estimate of the level of permanent potential job creation that might occur—assuming the expansion of municipal water and wastewater to the parcel as contemplated by this project. The table below is the result of job creation calculations using a hypothetical scenario concerning the long-term development of the subject parcel.

Table 1-1. Summary of Example Job Creation for a Parcel Adjacent to the Airport

Building Number	Tenant Industry	Workers/1,000 Sq. Foot [1] [2]	Building Size	Direct Jobs	Indirect Jobs	Total Jobs
1	Warehousing & Storage (NAICS 493)	0.6	40,000	24	11	35
2	Administration & Support Services (NAICS 561)	3.5	40,000	139	35	174
3	Administration & Support Services (NAICS 561)	3.5	40,000	139	35	174
4	Fabricated Metals Manufacturing (NAICS 332)	2.5	40,000	99	58	157
5	Machinery Manufacturing (NAICS 333)	2.5	40,000	99	59	158
6	Food Manufacturing (NAICS 311)	2.5	40,000	99	148	247
7	Beverage Manufacturing (NAICS 3121)	2.5	40,000	99	168	267
Total				698	512	1,210

Notes: Total building space is 280,000 square feet; Direct jobs are on-site; indirect jobs are located within Franklin County and/or elsewhere in Vermont. [1] "2018 Office Experience Exchange Report; September 18, 2018"; [2] "Estimating Office Space Per Worker;" Norm Miller, University of San Diego; May 01, 2012

Estimates by Economic & Policy Resources, Inc.

The job creation estimates represent the possible economically direct jobs and economically indirect jobs created by the full development of the parcel which is likely to be many years out into the future.²⁴ As such, because these calculations include only the permanent jobs, they do not include the significant number of jobs that would potentially be created by the construction expenditure activities associated with the full development and construction of a total of seven, 40,000 square foot structures on the parcel that could be fully developed with the new water and wastewater infrastructure to be provided.

²⁴ "Economically direct jobs" are defined herein as those that are created as a direct result of the incremental change in final demand for a given project (e.g., the developer hires a construction management firm and associated construction contractors). "Economically indirect jobs" are created as materials and other inputs to production are supplied to the project (e.g., the supplier of steel to the construction firm hires additional staff). It should be noted that induced jobs, which are a subset of economically indirect jobs, are created when the new workers occupying the economically direct and economically indirect jobs spend their new income resulting from the project at other businesses (e.g., consumer-oriented goods and services). For the purposes of this report-appendix, the terms "economically direct jobs" and "economically indirect jobs" are synonymous with "direct jobs" and "indirect jobs," respectively.

The hypothetical development scenario includes the construction of a total of seven, 40,000 square foot structures that would be populated after construction by appropriately scaled companies to occupy those structures. The potential occupants include companies in industry sectors that are consistent with the Town's/region's strategic industry sectors. For the job creation estimate, we consulted two sources (as footnoted in the table) to estimate the number of employees per square foot for the candidate companies that might be good candidates for occupying this new, fully-infrastructured space that would potentially be created through this project. The sources did not distinguish between manufacturing firms in different sectors—but offered an average for all manufacturing companies across all industries. This is, in all likelihood, a reasonable approach, with some differences between individual sectors that “on-average” will be offsetting.

We assumed that space occupancy would include one warehousing and distribution company and a total of six manufacturing operations—although it is possible that there might be some high value-added services occupancy—such as a professional services company, an aviation services providing company and/or potentially a military-related enterprise (e.g. Vermont National Guard) that might make a good use for one or more of the plots on the parcel. Given the higher economic returns provided to the Town and region by manufacturing and other goods-producing sectors, these estimates assume that the Town and region would want to pursue tenants that would provide the Town and region the highest economic return for utilizing the increasingly scarce, developable land resource in northwest Vermont. This illustrative analysis indicates that roughly 1,200 new direct and indirect jobs could be created on that single parcel utilizing the industrial mix assumed. That permanent job count total includes nearly 700 direct jobs and just over 500 indirect jobs.

What is clear from this example is that this project offers a significant opportunity to expand the permanent job base of the Town and region. These permanent, long-term jobs are separate and apart from the significant number of jobs that might also be created by the construction activities associated with the development and building of the seven, 40,000 square foot structures. When the similar development, construction, and operations activities on other adjacent parcels are considered (including the opportunity for aviation-based development at the airport itself), it seems apparent that this project offers the potential to be a significant catalyst for high quality and sustainable economic development in addition to improving the resiliency of both the Town's and the region's economic base for some time into the future.