

NASHUA – MANCHESTER 40818 (CAPITOL CORRIDOR)

PURPOSE AND NEED

June 29, 2021

Prepared for:

New Hampshire Department of Transportation



Prepared by:

AECOM Technical Services, Inc.

1155 Elm Street, Suite 401

Manchester, NH 03101

aecom.com

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Purpose and Need Statement

1. Purpose

The purpose of the Nashua-Manchester project (the Project) is to diversify mobility options that connect the southern New Hampshire region with the population, employment and commercial centers in the Greater Boston area, reduce congestion, emissions and travel time, and provide mobility options that promote equity and support demographic trends and preferences in the study area corridor.

The Project's purpose is consistent with the general Mission Statement of the New Hampshire Department of Transportation (NHDOT). NHDOT describes its mission as providing "transportation excellence enhancing the quality of life in New Hampshire," and its purpose as follows: "Transportation excellence in New Hampshire is fundamental to the state's economic development and land use, enhancing the environment, and preserving the unique character and quality of life. The Department will provide safe and secure mobility and travel options for all of the state's residents, visitors, and goods movement, through a transportation system and services that are well maintained, efficient, reliable and provide seamless interstate and intrastate connectivity."

2. Need

Projected population growth will result in increased roadway congestion. As population density increases over the coming years, an increased number of multi-modal transportation options to Boston, the region's largest employment center, will be critical in light of anticipated increases in roadway congestion, particularly along I-93 and Route 3.

As shown in Table 1, population growth in New Hampshire and Massachusetts from 2010-2020 was higher than overall growth in New England and the Northeast (New England, NY, NJ, PA). The affected counties in the study area corridor have grown at rates higher than their overall state growth rates. Population projections from 2020-2040 forecast continued growth in the Massachusetts employment centers, particularly in the greater Boston area, higher than statewide expectations. The exception is the city of Lowell. In New Hampshire growth in the study area corridor is also expected to continue, although not at a rate higher than the statewide forecast as was the case in the previous decade.

Employment growth followed a similar pattern during the 2010-2020 period, with the study area growing at a faster pace than regional and statewide growth. Employment forecasts, though not as robust as in the previous decade, still generally follow the pattern of study area growth outpacing statewide projections.

During the previous decade infrastructure improvements, especially multimodal options, did not keep pace with demands associated with population and employment growth. Investment in non-roadway infrastructure is necessary to combat the increasing roadway congestion resulting from this growth.

Prior to the pandemic, the Boston region was identified by INRIX as having the worst traffic congestion in the United States,¹ with nearly 150 hours per year lost due to vehicle delays. Study area residents employed in greater Boston have few options to avoid these conditions.

Highway performance data for 2019 from the Boston Metropolitan Planning Organization (MPO) Central Transportation Planning Staff (CTPS) for a representative AM condition is illustrated in Figure 1 below. The data is provided in four-hour peak periods and shows that congestion on routes leading into greater Boston are congested well beyond a single peak hour, and further confirms the difficulty of passenger vehicle travel in the region.

Table 1: Population and Employment Growth

	Population Growth 2010-2020 ²	Estimated Population Growth 2020-2040 ³	Employment Growth 2010-2018 ⁴	Estimated Employment Growth 2020-2040 ⁵
United States	6.52%	12.29%	12.48%	3.71%
Northeast	0.85%	NA	10.39%	NA
New England	2.77%	NA	10.27%	NA
Massachusetts	4.98%	6.44 %	13.80%	2.33%
New Hampshire	3.76%	6.14%	10.43%	5.29%
Hillsborough County, NH	3.98%	5.33%	12.82%	6.55%
Middlesex County, MA	6.90%	7.07%	14.88%	3.17%
Suffolk County, MA	10.77%	15.27%	21.26%	7.62%
Manchester, NH	2.79%	4.03%	12.46%	7.36%
Bedford, NH	6.54%	9.50%	30.48%	NA
Nashua, NH	3.22%	4.07%	8.32%	5.14%
Lowell, MA	3.95%	-1.34%	25.39%	-0.83%
Woburn, MA	2.98%	12.52%	8.25%	-0.21%
Boston, MA	11.52%	14.52%	21.68%	7.96%
Cambridge, MA	13.26%	12.03%	24.87%	4.90%

Source: U.S. Census Bureau Population Division, Annual Estimates of the Resident Population for the United States, Regions and States (December 2020), Annual Estimates of the Resident Population for Counties (March 2020).

NA – Not available

¹ <https://inrix.com/press-releases/2019-traffic-scorecard-us/>

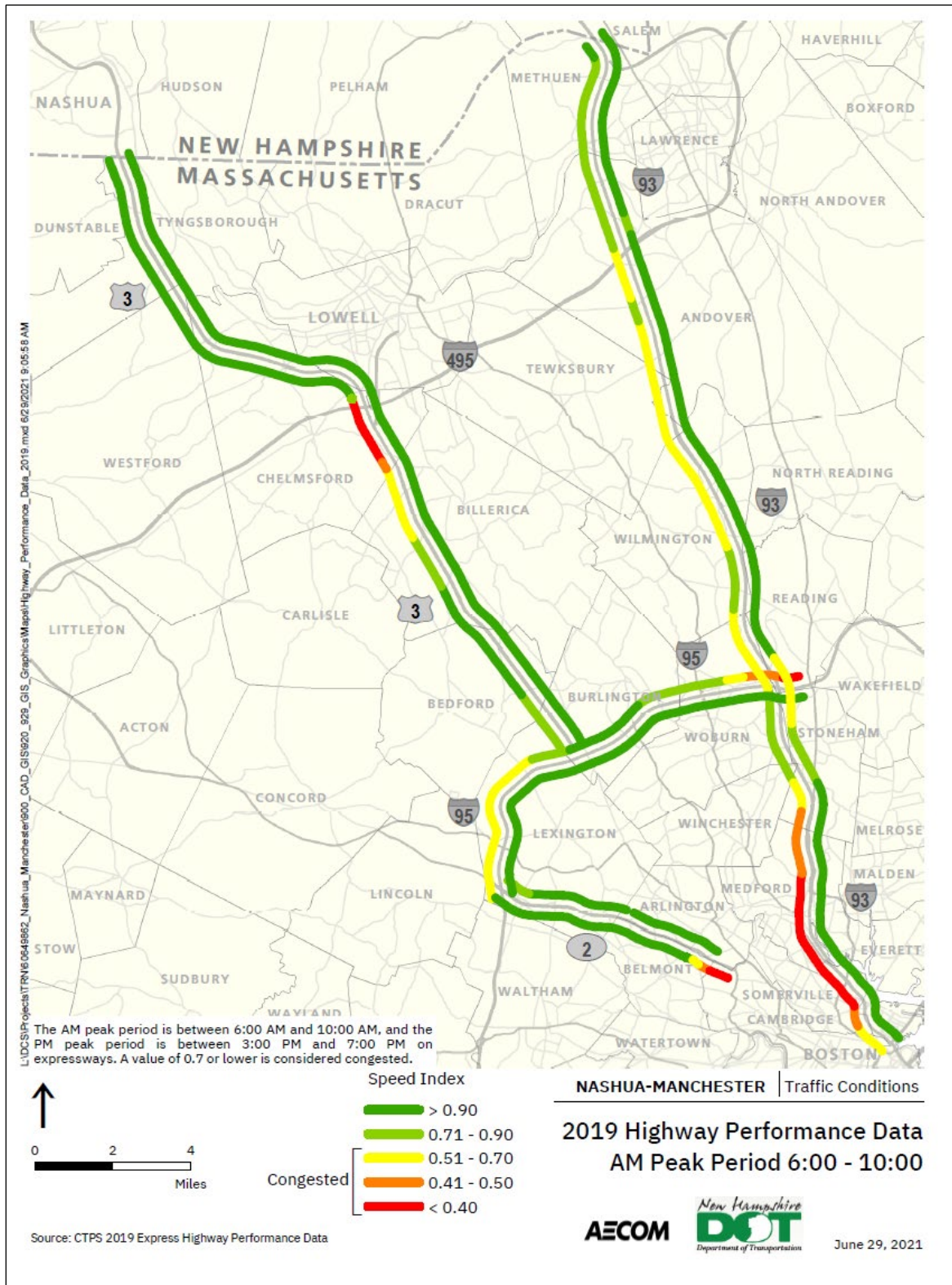
² U.S. Census County and Cities/Places Annual Estimates only available through 2019.

³ Massachusetts statewide, county and city population growth projections from MAPC/UMass Donahue Institute, "DOT Vintage 2018 City/Town Totals." New Hampshire statewide, county and city population growth projections from New Hampshire Office of Energy and Planning (OEP), "State of New Hampshire County Population Projections, By Municipality," September 2016.

⁴ U.S. Census Bureau, Center for Economic Studies, Longitudinal Employer-Household Dynamics, "On the Map," December 2020.

⁵ Massachusetts statewide, county and city employment growth projections from MAPC/UMass Donahue Institute, "Socio-economic Projections for 2020 Regional Transportation Plans," 2018. New Hampshire statewide, county and city employment growth projections from New Hampshire Employment Security, Economic and Labor Market Information Bureau, "Employment Projections by Planning Region and Counties, 2018-2028."

Figure 1: 2019 Highway Performance Data



Source: CTPS

The robust growth in regional and study area corridor population and employment in the past decade, and continued projections for growth in the coming decades, suggests that commuting patterns will continue to include New Hampshire residents seeking and securing employment in the greater Boston area, and that these commuters will continue to require travel options other than the regional roadway network.

Southern New Hampshire's existing transportation network provides limited connections with dedicated transit facilities in Greater Boston. Increased levels of corridor transit investment will improve local and regional mobility by linking travelers to the network of existing transportation modes in southern NH and greater Boston: roadway, bus, commuter rail, heavy rail, light rail, bicycles, and airplanes. These increased linkages will improve ridership and usage across all of the modes, while promoting sustainable mobility.

Transformative infrastructure improvements such as regional commuter rail, bus-on-shoulder and other measures have yet to be implemented in NH, leaving passenger vehicle use and commuter bus service as the primary transportation options in the study area corridor, both of which are subject to significant roadway congestion and delay.

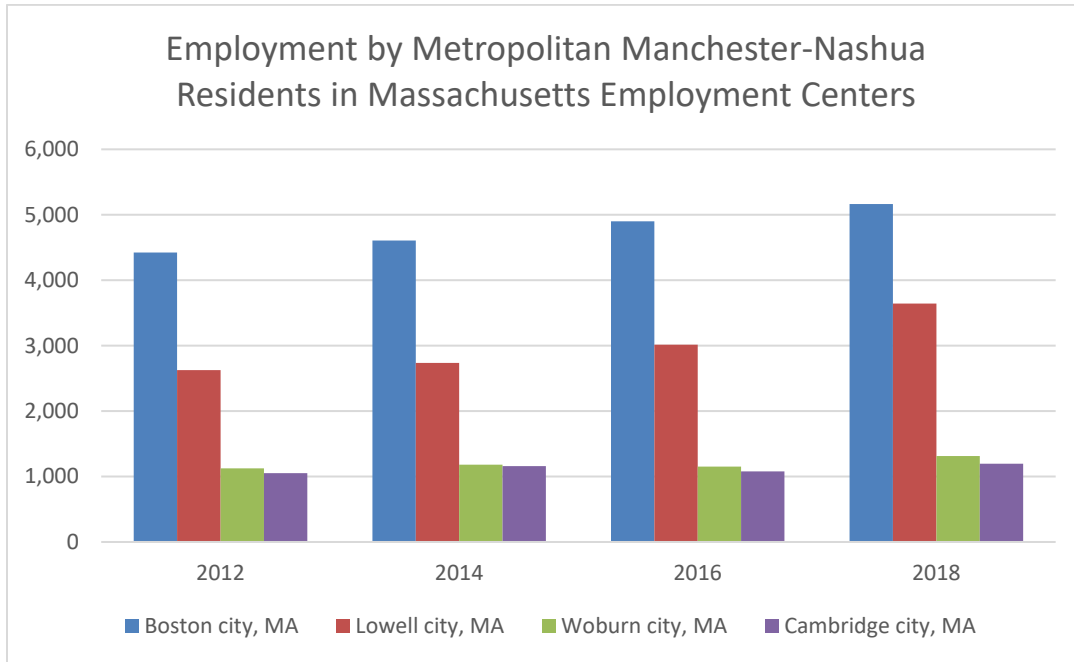
The regional economy is vulnerable to the effects of near-total dependency on roads for movement of goods and passengers. Investment in transportation infrastructure that provides an alternative to roadway transport will link New Hampshire's businesses, industries, and residents to the regional and national multimodal transportation network.

The lack of an off-roadway transit option for travelers between New Hampshire and Massachusetts results in unpredictable travel times due to increasing roadway congestion in the study area corridor. Commuters to greater Boston are forced to endure longer average travel times or adjust their schedules (when possible) to avoid peak periods. Improvements to rail infrastructure necessary for the implementation of passenger rail service will also enhance freight rail options for delivery of goods to and from the study area corridor.

Improved transportation options are necessary to attract employers to New Hampshire and improve employment options for New Hampshire residents. A mismatch between locations of residence and employment forces many in New Hampshire to spend comparatively long periods of time commuting to work. Investing in more efficient transportation modes will not only improve connectivity between existing centers of residence and employment, but increased levels of multi-modal access may catalyze additional business investment within New Hampshire.

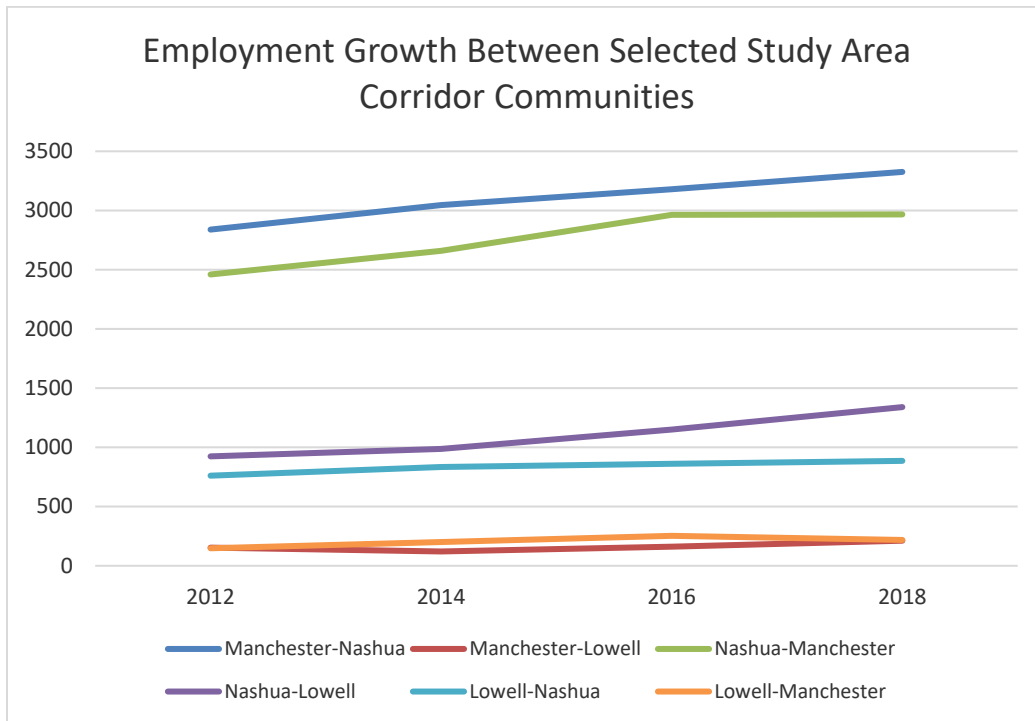
The number of New Hampshire residents in the study area corridor that work in Boston, Cambridge, Woburn and Lowell has continued to increase over the past decade (Figure 2). This trend is also confirmed for the individual cities of Manchester and Nashua. In addition, journey-to-work statistics also suggest growth among Manchester residents working in Nashua and Lowell, Nashua residents working in Manchester and Lowell, and Lowell residents working in Manchester and Nashua, providing potential for shorter and reverse commutes within the study area corridor (Figure 3).

Figure 2: Selected Employment Locations of Metropolitan Manchester-Nashua Residents



Source: US Census, On the Map, 2010-2018

Figure 3: Employment Growth Between Selected Study Area Corridor Communities

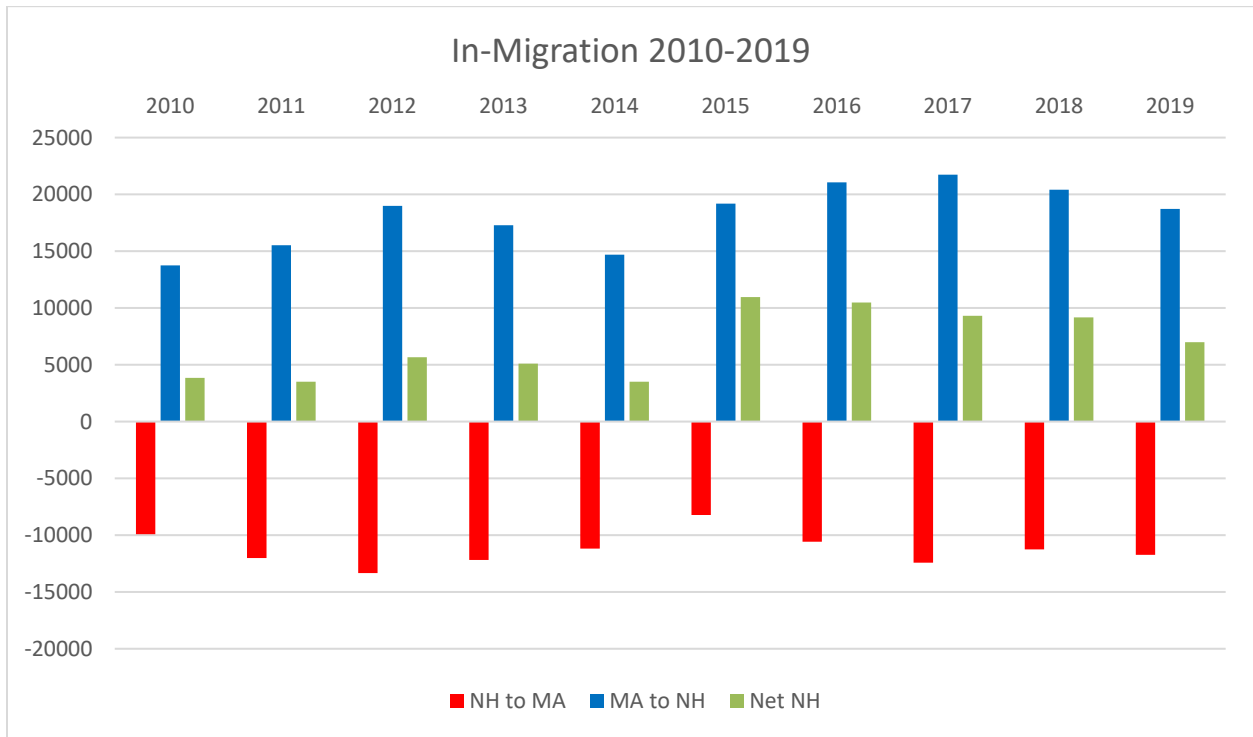


Source: US Census, On the Map, 2010-2018

New Hampshire is experiencing a positive net in-migration from Massachusetts, but losing residents in high-earning age cohorts. While the region’s overall population is projected to grow in the coming decades, a decline in residents in the 35-54 year-old age cohorts is occurring. This population is typically in its highest-earning years and has more diverse employment, family and recreational needs that would benefit from a dependable and sustainable alternative to passenger vehicle travel. Improved transit connectivity will support the attraction and retention of this valuable cohort within the study area corridor.

Over the past ten years, in-migration patterns between New Hampshire and Massachusetts has favored New Hampshire, although the net increase is declining (Figure 4). The effect of this in-migration pattern, combined with continued growth in the number of southern New Hampshire residents working in the greater Boston area, suggests a growing need for alternatives to passenger vehicle travel between New Hampshire and Massachusetts.

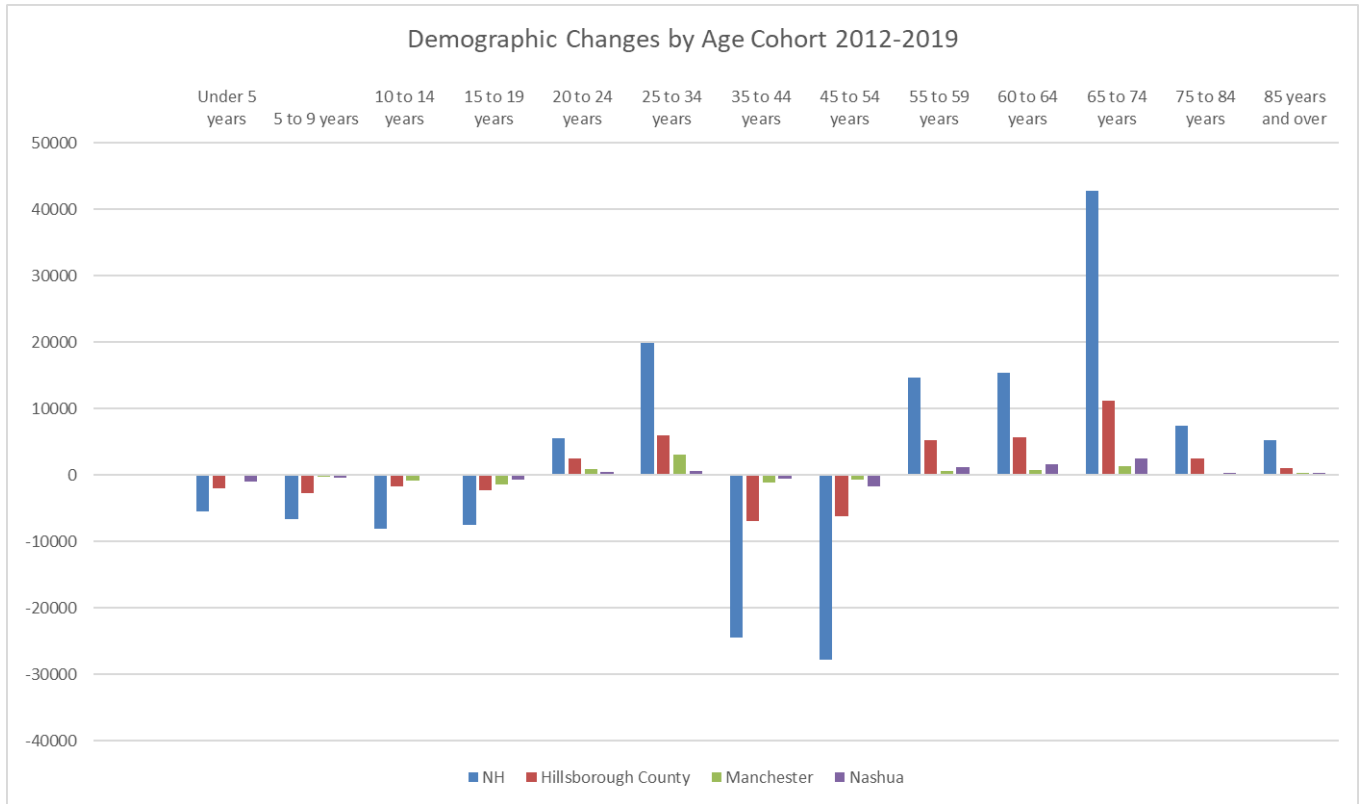
Figure 4: In-Migration Between New Hampshire and Massachusetts



Source: US Census, American Community Survey, State-to-State Migration Flows, 2010-2019

During that same time period an increase in residents ages 20-34 has occurred in the state, and similarly in the county and region. However, a corresponding decline in populations between 35-54 years old has occurred (Figure 5). The continued loss of this high-earning cohort will have a negative effect on the New Hampshire economy. Transportation alternatives that are able to reduce travel times may provide incentives that reduce this demographic trend.

Figure 5: Study Area Corridor Demographic Changes



Source: US Census, American Community Survey, ACS Demographic and Housing Estimates, 2012-2019

New Hampshire is getting older. *New Hampshire’s senior population continues to grow. Additional shared transportation accommodations that support “car-light” mobility will be required to accommodate these emerging demographic and lifestyle trends and will continue to make New Hampshire attractive to residents from childhood through retirement.*

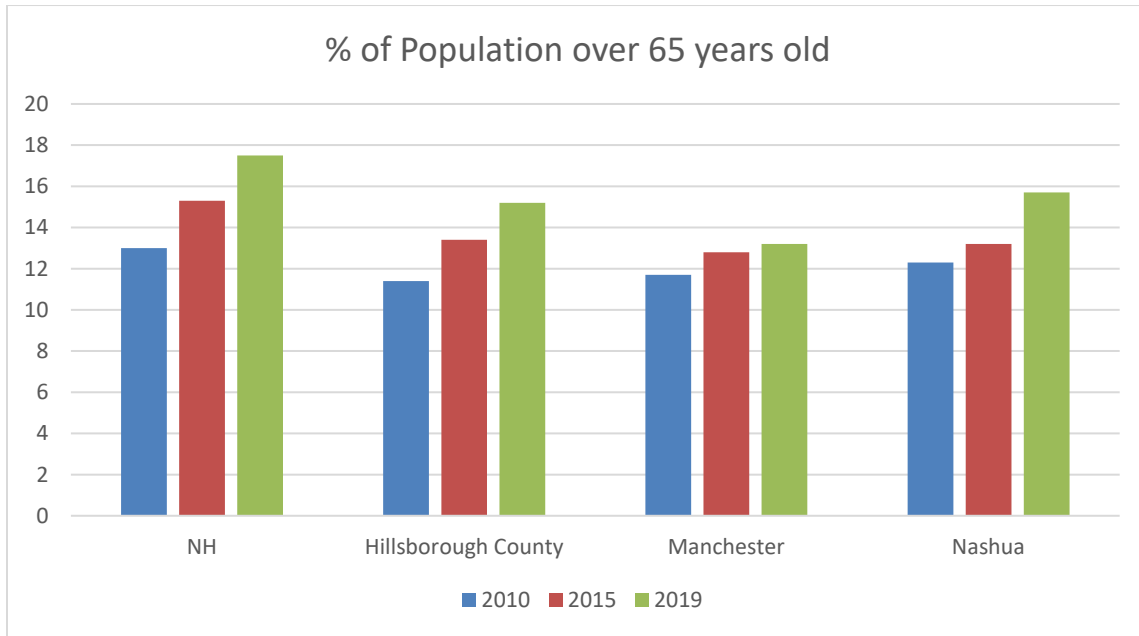
The greatest change in age cohort within the State and Hillsborough County over the past decade is in the 65-74 age cohort. During that time the percentage of population over 65 years old has increased in New Hampshire, Hillsborough County, Manchester and Nashua (Figure 6). A corresponding change in median age has occurred in the state, county, and in Nashua, with Manchester providing an exception (Figure 7).

The need to provide alternatives to passenger vehicle travel will continue to grow as aging workers and retirees become less willing or able to confront congestion on the regional roadway network. The ability to provide a sustainable and dependable transit option will provide noticeable benefits to this segment of the population.

The seeming anomaly represented by the median age in Manchester may be explained anecdotally by its compact city center providing employment and recreational opportunities, minor league sports and concert venues, and higher education institutions such as University of New Hampshire at Manchester

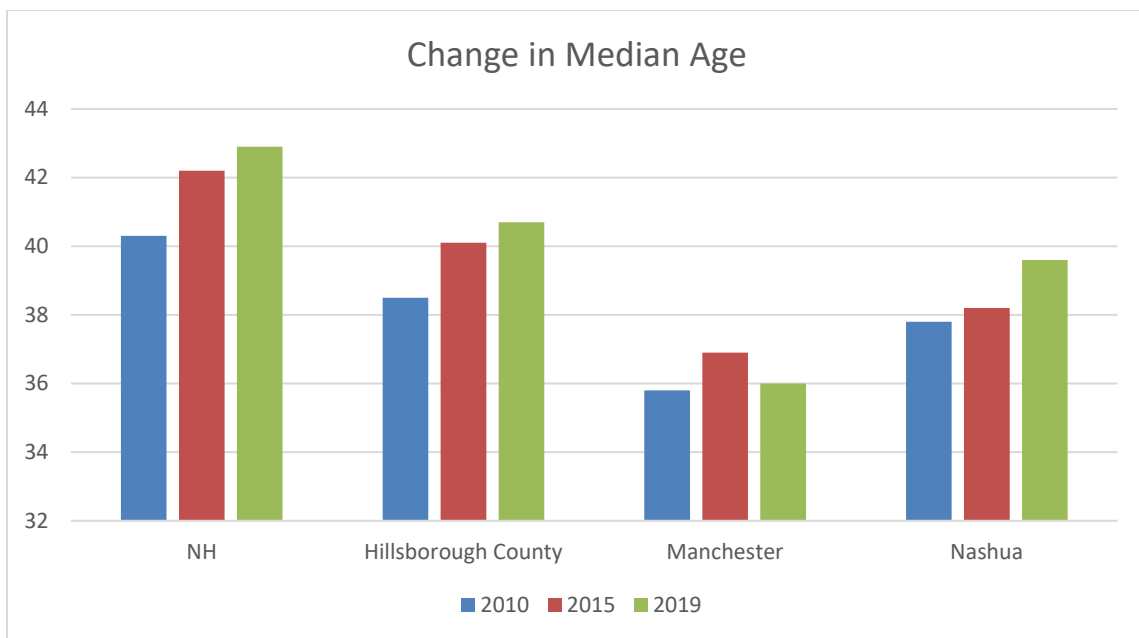
and Southern New Hampshire University. However, a more data-driven reason may be that housing prices, particularly owner-occupied units, are more affordable than the statewide and county median values, and that of other cities such as Nashua (Table 2).

Figure 6: Study Area Population Over 65 Years Old



Source: US Census, American Community Survey, ACS Demographic and Housing Estimates, 2012-2019

Figure 7: Study Area Median Age



Source: US Census, American Community Survey, ACS Demographic and Housing Estimates, 2012-2019

Table 2: Study Area Housing Prices, 2019

Housing Prices	New Hampshire	Hillsborough County	Manchester	Nashua
Median Home Value	\$261,700	\$274,800	\$227,600	\$267,900
Median Monthly Rent	\$1,111	\$1,191	\$1,135	\$1,281

Source: U.S. Census, American Community Survey, 2019

Residential development patterns resulting from population growth may negatively impact the region’s existing quality-of-life. Population growth, if not guided through strategic infrastructure investments that promote efficiency, will result in uncoordinated development patterns and sprawl that will diminish the region’s high quality-of-life and negatively impact its unique character.

The cities of Nashua and Manchester have implemented regulations or endorsed plans that provide incentives for transit-oriented development (TOD) in targeted areas of their cities adjacent to study area corridor rail infrastructure.

The existing transportation network cannot accommodate increased levels of demand without negative environmental consequences. The expansion of existing roadways and construction of new roadways will not be sufficient to sustainably accommodate the projected growth in travel demand, causing negative environmental consequences associated with an increased number of VMT and corresponding congestion.

Multi-modal alternatives to passenger vehicle use, particularly the reduction of single-occupancy vehicles, are consistent with measures to reduce VMT and corresponding reductions in emissions and fuel consumption.

3. Goals and Objectives

To determine how well regional commuter rail within the Nashua - Manchester (Capitol Corridor) study area will address regional and corridor needs, a set of goals and objectives have been developed. These goals and objectives build on work that has been completed or is ongoing within the corridor and region. Each goal reflects an understanding of the role that integrated transportation and land use planning can play in supporting an economically, environmentally, and socially sustainable community.

Transportation and Mobility

Leverage the existing transportation network to improve access and mobility within the study area corridor and throughout the region:

- *Provide alternatives in light of anticipated roadway congestion and provide mobility options within the study area corridor;*
- *Expand transit network capacity;*
- *Increase transit ridership and mode share by expanding the existing ridership base and attracting new riders;*
- *Provide travel time savings; and*
- *Improve efficiency, convenience, and reliability.*

System Integration

Invest in transportation improvements that complement the existing multimodal transportation network:

- *Increase study area corridor modal connectivity;*
- *Provide connections to other corridors within the region;*
- *Increase access to the Manchester-Boston Regional Airport through additional transit service;*
- *Balance system capacity (MBTA, Boston Express, Regional Transit Authorities); and*
- *Ensure operating efficiency.*

Economic Development and Land Use

Support the vision for growth laid out in local/regional development plans:

- *Improve access to higher-paying jobs in greater Boston;*
- *Support development patterns/lifestyle choices that attract younger, highly educated professionals to New Hampshire;*
- *Leverage younger, highly educated employee base to attract new businesses/grow existing ones; Promote Transit-Oriented Development (TOD) to mitigate sprawl development patterns; and*
- *Improve the potential for additional freight rail business through infrastructure upgrades.*

Sustainability

Support transportation investments that contribute to an environmentally, economically, and socially sustainable community:

- *Leverage existing transportation infrastructure to qualify for federal transportation investment dollars;*
- *Mitigate potential adverse environmental impacts resulting from anticipated development;*
- *Support growth patterns that attract and retain residents from childhood through retirement; and*
- *Improve access to other tourism, recreation, and cultural attractions in greater Boston and NH.*