Nashua Transit System

Comprehensive Plan

2016-2025

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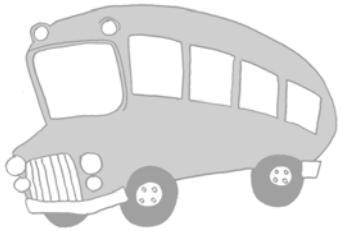

NTS
COMPREHENSIVE
PLAN

Introduction

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Introduction

Background

In 2003 the Nashua Regional Planning Commission developed a regional Transit Plan in cooperation with the City of Nashua. The 2003 Plan identified several goals for service improvements including:

- Decreased headways on City of Nashua routes.
- Extend service hours on City of Nashua routes.
- Establish a Daniel Webster Highway Circulator in southern Nashua's retail area.
- Provide limited fixed route service to Daniel Webster College and Nashua North High School.
- Provide demand response service between Nashua and Milford, Amherst, Brookline, Hollis, and Wilton.

Many of these goals for service within the City of Nashua have been implemented in some form. In recent years, the Nashua Transit System (NTS) has made significant strides to upgrade equipment and improve service. Also, significant steps towards establishing the demand response service outside the region have been achieved through the partnership with the Souhegan Valley Transportation Collaborative.

The 2003 plan also identified the need for fixed route service beyond the City limits and outside the region, however these goals have yet to be realized. Over the last decade transportation in the Nashua Region has become increasingly unimpeded by jurisdictional boundaries. More than 68 percent of residents of the region commute to work in a community outside of their own (American Community Survey, 2008-2012). Even in Nashua, the state's second largest employment center, 54 percent of city residents commute to other communities.

Approach

This NTS Comprehensive Plan evaluates the condition and effectiveness of existing transit services and facilities and prioritizes future service expansions and the corresponding capital requirements over the next decade.

Existing NTS Services To set the stage for future planning, this section describes the breadth and depth of current NTS service, including fix routes, "After 7" night service, the Gate City Trolley, seasonal and specialty service, as well as the current NTS facilities, technology, and ridership patterns.

Why Transit Matters This chapter captures the results of a comprehensive public outreach campaign in order to capture the perspectives of current and future NTS riders. It also examines the particular demographic trends and environmental factors that influence transit use within the region, considering both present-day data and robust future projections. NTS staff provided expertise on factors influencing transit utilization.

NTS Goals Considering the mission of NTS, this outline contains broad areas of priority action and specific implementation items organized by short, medium, and long-term timelines.

Expanded Service: A Closer Look This section contains GIS and financial analysis of potential expansion of transit throughout the greater Nashua region which considered maximum overlap between where potential bus riders live (trip origins) and where they want to go (trip destinations). It uses existing bus stop utilization data to predict where expanded service might be most popular within the region. Lastly, it examines a potential methodology to estimate share of local match required for new routes based upon ridership prediction factors.

The Road Ahead The mission of the Nashua Transit System is to provide a level of public transportation that allows for a convenient, affordable, reliable and environmental friendly method of transportation servicing the needs of citizens through a dedicated, professional, and customer focused workforce.

This plan will be used to guide the Nashua Transit system for the next ten years.

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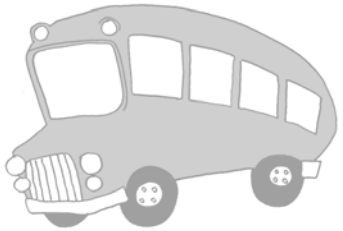

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EXISTING SERVICE

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Existing Service

Fixed – Route Service

NTS currently operates ten permanent fixed transit routes which run weekdays between the hours of 6:15 a.m. and 6:45 p.m. Service with more limited hours is available on Saturdays and the system does not operate on Sundays. All routes offer one hour service frequencies, with the exception of Routes 6 and 2, serving the Route 101A and Daniel Webster Highway corridors, which offer ½ hour service frequencies due to heavy demand on the busy and largely commercial corridors via their Routes 2A and 6A services. All routes offer connections to the Nashua Transit Center.

NTS operates a fleet of 9 low-floor buses, 3 trolleys, and 9 vans, all of which are 100% ADA accessible. All NTS vehicles are equipped with front side exterior bike racks allowing bicycle riders to utilize the service with minimal disruption. In recent years, the City of Nashua has made efforts to retrofit its fleet of city vehicles powered by Compressed Natural Gas (CNG). The city operates a 600-gallon CNG fueling facility at its NTS Operations/Department of Public Works facility on Riverside Drive. The facility was expanded in 2014 from 300 gallons, and is currently one of the largest such facilities operational in New England. NTS currently operates one CNG-fueled bus and plans are underway to replace the current buses with CNG vehicles as they age and are phased out of service.

Ridership Data Tracking

NTS utilizes RouteMatch software to input and track ridership data in real time through the use of tablet devices operated by drivers. NTS upgraded the system through the use of federal stimulus funds in 2013. Through continual improvements and adjustments in NTS routes and schedules, the system now largely provides service to all major areas of the city with stops located within ¼ mile of more than 88 percent of residential addresses in the city (NRPC GIS analysis).

Ridership aboard NTS routes has risen significantly and steadily since the start of the new millennium, increasing by approximately 100 percent between 2000 and 2015. This is particularly notable as gasoline costs have been highly volatile over that period, and in many regions, transit demand is highly correlated to gasoline costs, with ridership spikes observed during periods of high costs and lows during significant declines (Iseki and Ali, 2014). Most recently, gas costs have declined significantly, however NTS ridership levels appear to be remaining fairly constant. This consistency in ridership growth helps NTS make informed long-term investments and avoid the cycles of short-term expansions and cut-backs that can impact many public transit providers.

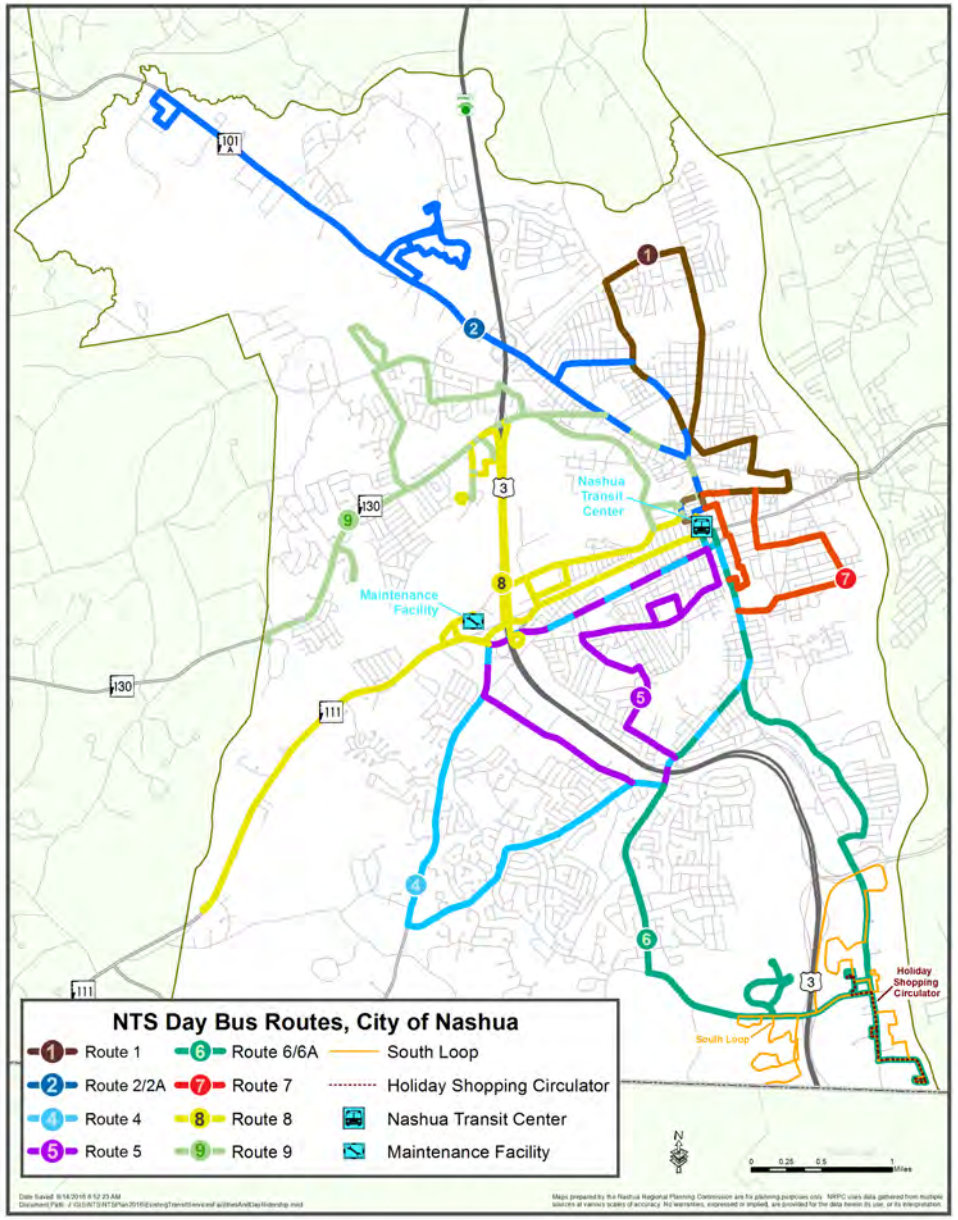
NTS Facilities

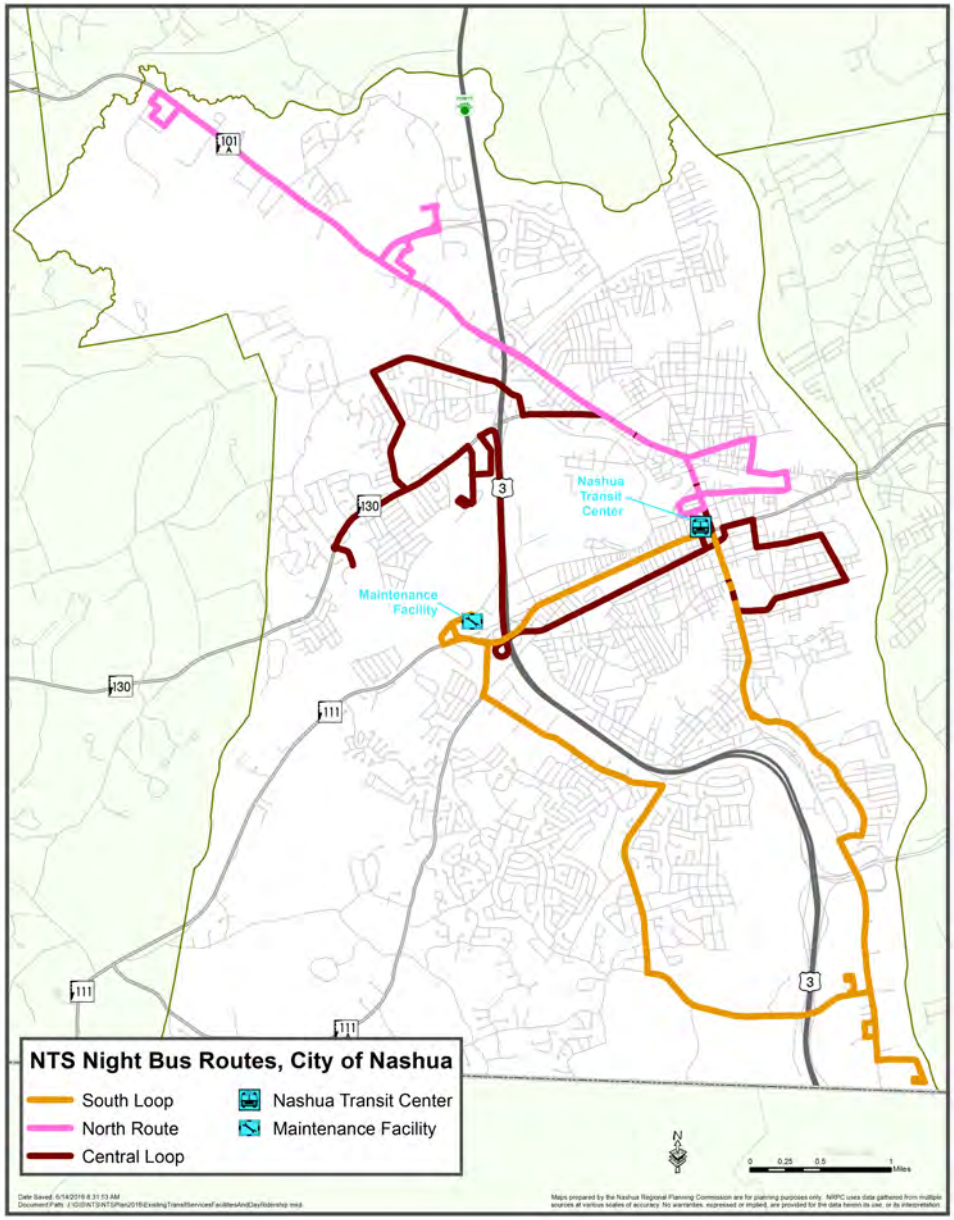
The Nashua Transit Center is the only NTS-operated indoor facility for passenger use in the system. Some high traffic NTS stops include transit shelters at certain points on the Route 101A and Spit Brook Road corridors. Most NTS stops are identified via NTS signage. Outdoor illumination and lighting is dependent on the area of the city the stop is located in. Several stops include minimal outdoor lighting, which can challenge drivers to identify waiting passengers, particularly in winter conditions. NTS encourages riders to wave or display their mobile phones to attract the attention of drivers. The system has identified the lack of bus stop signage on Main Street in Downtown Nashua (bus stops signs were removed as part of the Main Street sidewalk overhaul project) as an issue potentially impeding ridership.

The Nashua Transit System is served by a transit maintenance and operations center located in the Exit 5 area of the city along Riverside Drive. The Transit Center is centrally located on Elm Street in Downtown Nashua (adjacent to the Elm Street City Parking Garage) and serves as the hub for transit routes and bus transfers.

Day Routes

After 7 Routes





Data Source: NRPC GIS

Seasonal Service

After 7 Service

In response to ridership demand for expanded hours of transit service in the evening, the System began it's 'After 7' service in 2003, which provides weekday service from 6:45 p.m. to 10:45 p.m. and on Saturdays from 5:45 p.m. to 10:45 p.m. on three routes; North, South, and Central. The routes provide service to heavy demand areas of the city including Downtown, Route 101A, South Nashua, and the Exit 5 and 6 areas, largely incorporating the most popular stops from daytime service routes. The Nashua Transit System is currently one of the only public transit providers in New Hampshire to offer public transit service after 7 p.m. Approximately 9 percent of all fixed-route transit ridership in the NTS system is from the 'After 7' service.

Gate City Trolley

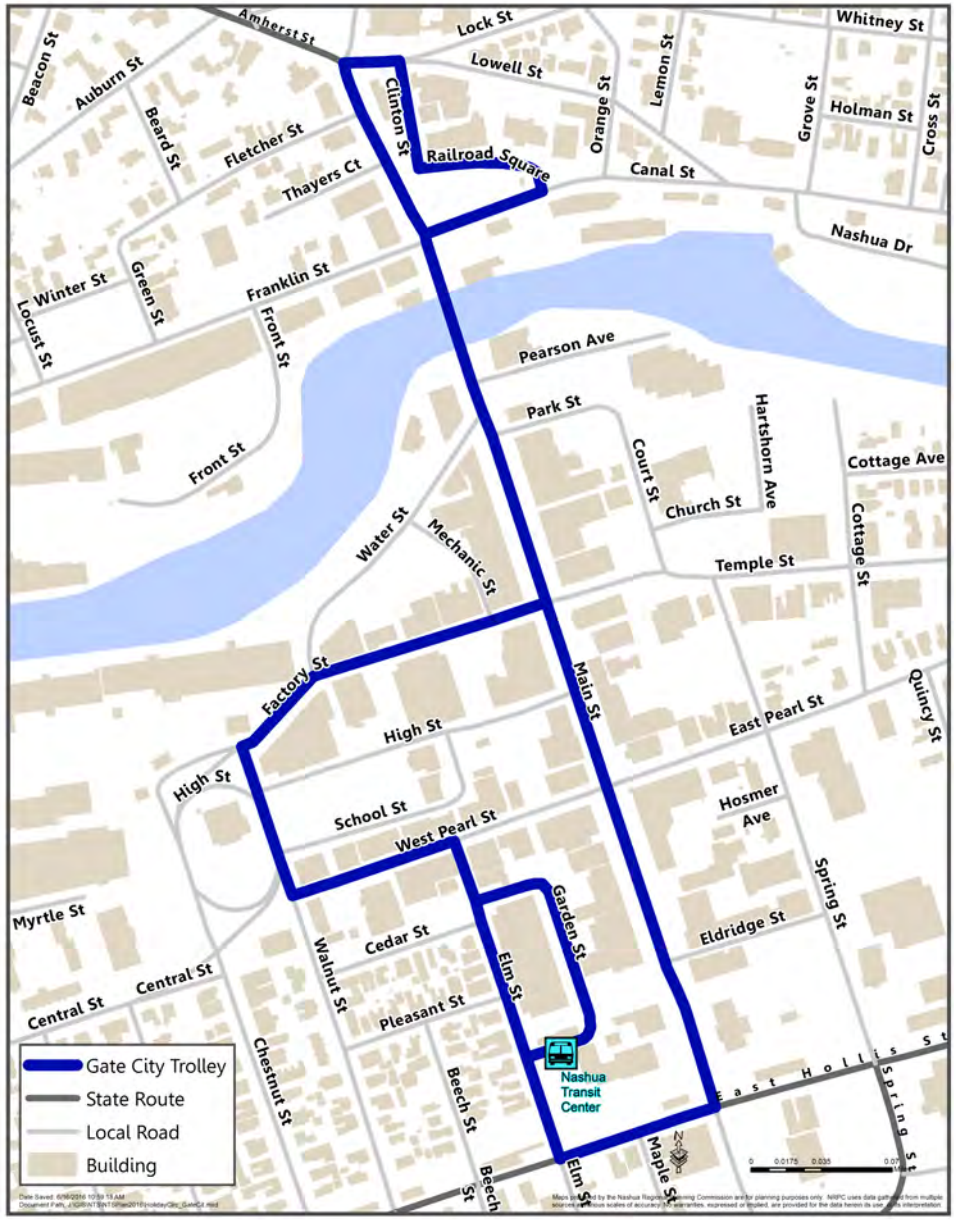
In an effort to boost support for the downtown merchants and restaurants, the City started the Gate City Trolley service in June of 2016. This is a free service in downtown Nashua operating on Friday and Saturday nights. The trolley stops at the Elm Street and High Street parking garages, as well as multiple locations downtown. As a joint effort with Economic Development, all passengers receive a ticket that can be used as a coupon at participating restaurants and shops. The trolley runs from 6:15pm - 10:30pm on Fridays and 5:15pm - 10:30pm on Saturdays. This service will operate throughout the end of 2016 and possibly longer depending on its success.

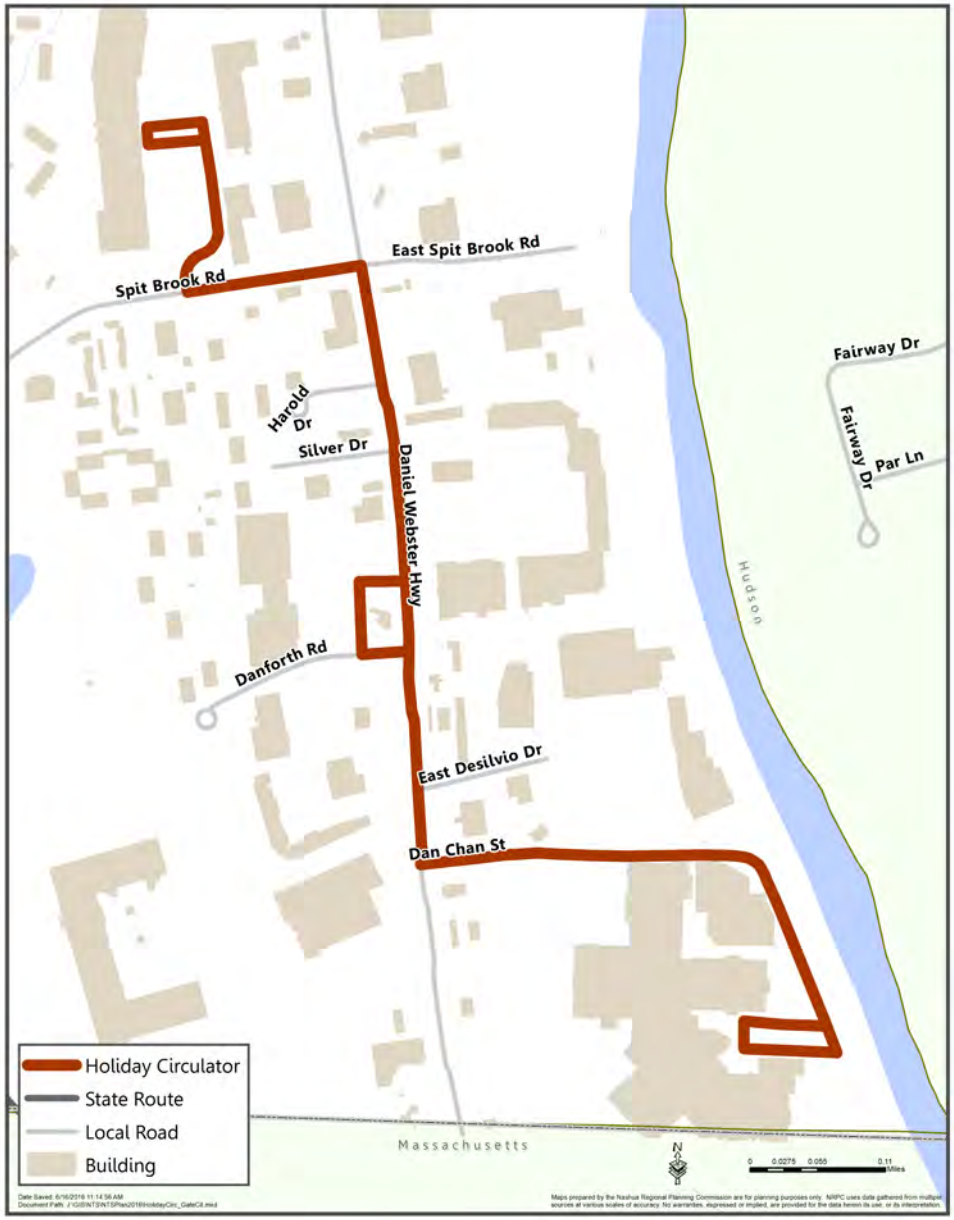
Temporary/Seasonal Routes

NTS also offers a number of temporary seasonal routes. One route that has been operated for the past few years is the Holiday Circulator, which serves several major shopping centers in South Nashua for a period of time every year in December in the height of the holiday shopping season. In 2015, NTS launched a temporary South Loop transit line to provide additional transit coverage to residential and commercial areas of South Nashua surrounding Spit Brook Road and the Daniel Webster Highway during the winter season when snow conditions might make pedestrian travel hazardous. In 2014 and 2015, NTS launched a Summer Recreation Bus Route. The free transit service operated from 9 a.m. to 6 p.m. on weekdays and linked several central Nashua neighborhoods with popular parks and recreation areas. Fares for the service were free of charge. Due to limited ridership demand, NTS is unsure if either the Summer Recreation Bus Route or the South Loop will be continued in subsequent years, however they remain open to temporary routes that might improve mobility and quality of life for Nashua area residents.

Gate City Trolley

Holiday Circulator





Data Source: NRPC GIS

Interconnections

Manchester and Lowell Transit Links

Two additional public transit authorities provide some service to the Nashua Region. The Manchester Transit Authority, operating out of Manchester, NH, offers a Nashua Express Route. The service operates on weekdays and Saturdays between Downtown Manchester and the retail areas of Nashua adjacent to Exit 6 on the F.E. Everett Turnpike off Broad Street. There are five round trips on weekdays and three available on Saturdays. This service allows a connection to the Nashua Transit System Routes 8 and 9 which run to the NTS Transit Center where passengers enjoy full access to the Nashua Transit System route network. According to officials at MTA, the service was borne primarily out of rider interest to access the discount store chain Christmas Tree Shops, one of which is located in the Exit 6 retail area. None of the chain's stores operate in the Manchester Area.

The Lowell Regional Transit Authority provides fixed route transit service to Ayotte's Market in Hudson, NH, located just over the state line from Tyngsborough. The market serves as the turnaround point for LRTA's Route 10 Dracut/ Tyngsborough service. LRTA offers 13 round trips on Route 10 on weekdays and 10 on Saturdays linking Ayotte's with the Robert B. Kennedy Bus Transfer Station located at the Gallagher Intermodal Center, providing MBTA commuter rail service to Boston. The Kennedy Transfer Center serves as the transfer point for all LRTA local bus routes and several intercity bus routes operated by other providers. LRTA also offers a seasonal Pheasant Lane Mall route during the holiday shopping season on Saturdays only. The route links the Kennedy Transfer Center with the large shopping center in Tyngsborough, (formerly known as TJ Maxx Plaza) which includes a large movie theater, restaurants and several retail stores, as well as the Pheasant Lane Mall. The bus does not actually cross the state line as much of the mall parking lot is located in Tyngsborough.

Boston Express

Although not a public transit service, the Boston Express bus route, operated by Concord Coach Lines, is sustained in part through the use of federal subsidies. Boston Express provides express bus service from the NHDOT Park-and-Ride facility at Exit 8 of the F. E. Everett Turnpike and from the Mass DOT Park-and-Ride at Exit 35 in Tyngsborough, Mass. to both Logan International Airport and the MBTA South Station located in Downtown Boston. The service is highly popular and provides 15 round trips from its Exit 8 facility in Nashua. The service is so popular that the Exit 8 parking lot has reached capacity and efforts are underway to offer expanded parking. Parking lot utilization at Tyngsborough is also nearing capacity with about 85 percent of parking spots occupied on weekdays (vehicles with NH license plates typically make up approximately 65 percent of vehicles utilizing the lot).

NTS currently provides service to the Exit 8 Park-and-Ride facility via its daytime Route 2A service and evening North route. NTS operations staff have indicated that if the system was to expand to communities in the west, the need for an additional transfer station may arise. Both the Westgate Plaza retail center (located on the Nashua/Merrimack line), and the Exit 8 Park-and-Ride facility have been identified as potential transfer points.

Broad Street Parkway

In December 2015, the City of Nashua opened the Broad Street Parkway, a long planned limited-access roadway linking the Exit 6 area of the F.E. Everett Turnpike at Broad Street to the Nashua Mill yard and Central Street in Downtown Nashua. The parkway dramatically improves accessibility in the immediate area and reduces travel times from the turnpike to both Downtown Nashua and the Nashua Mill yard. The parkway includes a sidewalk and broad shoulders

suitable for biking, however due to its limited access configuration, there are few destinations located directly on the roadway.

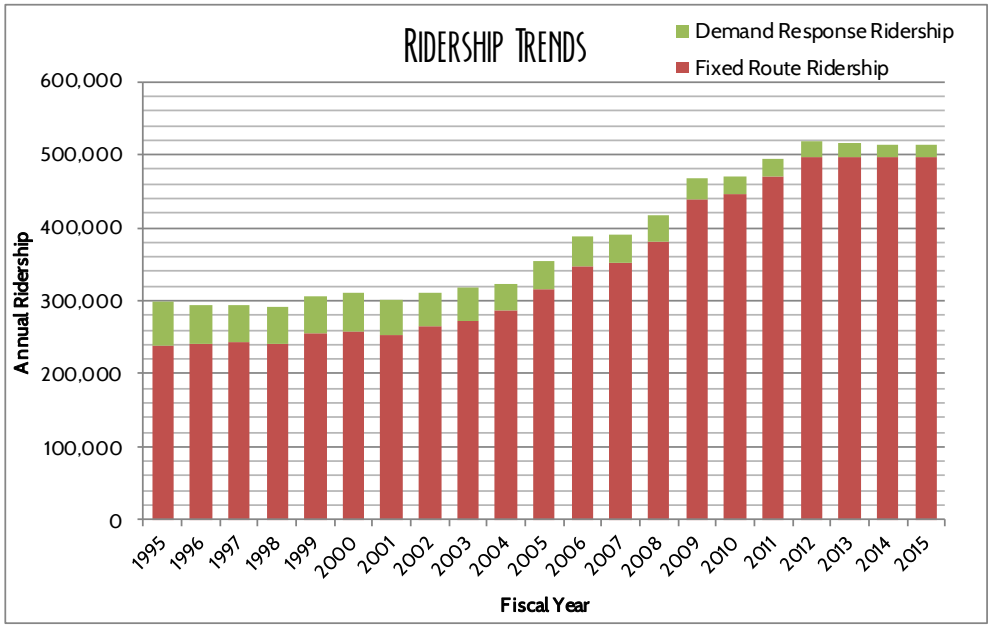
NTS continues to evaluate the parkway and its impact on traffic volumes on adjacent streets in the downtown area. NTS would like to utilize the parkway to improve public transit coverage, accessibility and service times. Preliminary discussions have focused on re-routing Route 9 along the Broad Street Parkway for part of its route to improve service performance and efficiency.

RIDERSHIP TRENDS

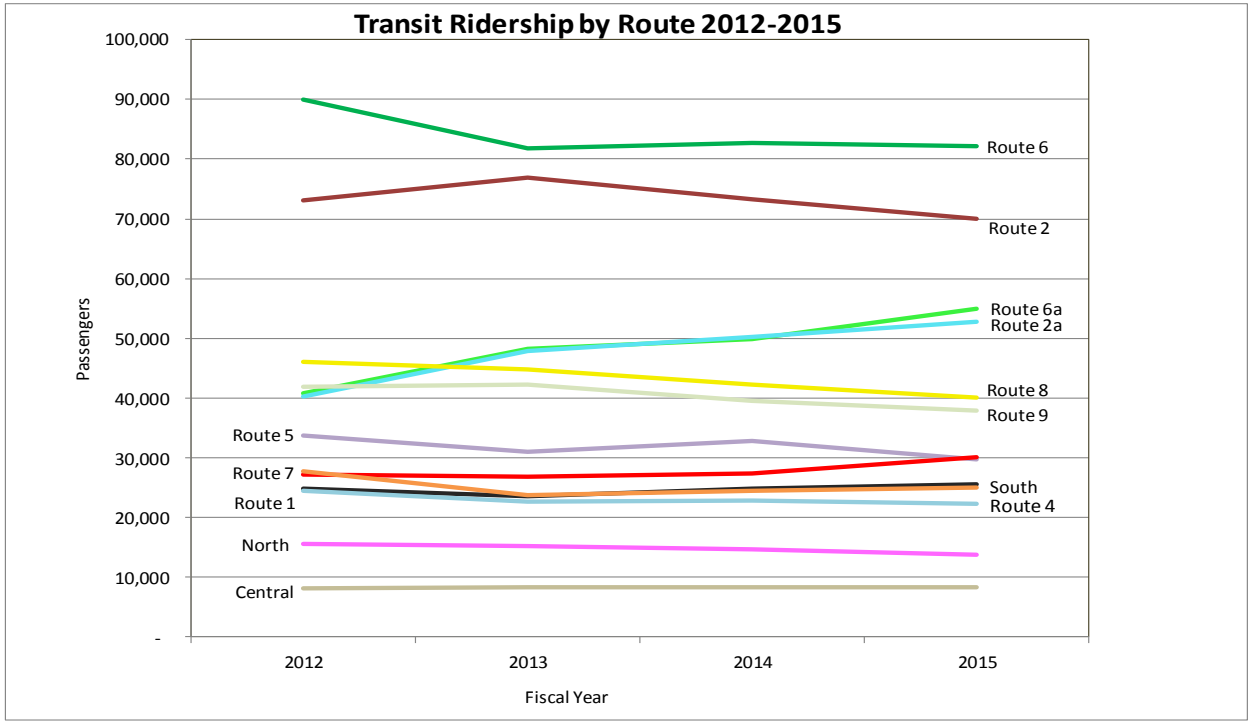
Overall, fixed route ridership has approximately doubled in the last 20 years. An analysis of ridership patterns among the Nashua Transit System service indicates that ridership is heaviest surrounding major commercial destinations, particularly along Route 101A, the Daniel Webster Highway, and the retail centers located along Broad Street at Exit 6. Routes 2, 2A, 6, and 6A, which serve the Route 101A and Daniel Webster Highway corridors account for approximately 52 percent of all NTS ridership. In 2012 Routes 2A and 6A were added to complement Routes 2 and 6 and increase service frequency. This accounts for a slight decrease in ridership on Routes 2 and 6 with a corresponding increase on Routes 2A and 6A.

Ridership is by far the highest at the Nashua Transit Center where all routes converge and transfers are most accessible (the transit center accounted for 36 percent of all ridership aboard the system). However, the Pheasant Lane Mall, Nashua Mall Shopping Center and Westgate Shopping Center, all among the largest commercial centers in the region, accounted for the highest ridership of all stops in the system. The high level of ridership at Westgate Plaza, on the far western edge of the Nashua city boundaries, suggests that some riders may be using the stop and then walking to access destinations to the west, as the Route 101A corridor accommodates several large commercial centers in the communities of Amherst and Merrimack currently unserved by transit, including a Walmart Super Center, which riders have consistently expressed interest in accessing via transit. This is supported by anecdotal information provided by NTS drivers. If accurate, this presents some safety concerns as Route 101A is not well-suited for pedestrian safety due to a lack of sidewalks and heavy traffic volumes.

The only Nashua Transit System route to rank in the top 20 in ridership, that is not located in a major commercial area, is the Spit Brook bus stop shelter, located just west of the Exit 1 interchange along Spit Brook Road. This area is surrounded by a dense cluster of multi-family housing and is



Data Source: Nashua Transit System (NTS)



Data Source: Nashua Transit System (NTS)

located directly across from the Nashua Office Park and the Nashua Technology Park, two major employment centers in the region.

In recent years, Routes 2 and 6 have continued to make up a high share of transit ridership in the system. Additionally, relative to other routes, both Routes 7 and 9 have experienced more sizable increases in ridership. Route 7 serves the Crown Hill and Spring Street areas of Central Nashua while Route 9 serves Broad Street.

TECHNOLOGY CONSIDERATIONS

The Nashua Transit System operates an internet website for accessing NTS routes, schedules and related transit information. In December 2015, the City of Nashua completed an overhaul of the official city website. As part of that effort, the NTS site was merged into the city system to include the same format and navigability of the city internet site. NTS is currently evaluating how to re-incorporate that information and improve the overall convenience and navigability of the site.

NTS operations staff have indicated that investments in RouteMatch software made in 2013 have dramatically improved data collection, tracking, and operations performance. The system continues to investigate technology investments to improve performance, such as open source bus tracking software and automatic voice annunciation (AVA).

Currently, Nashua Transit does not allow for cash change to be made on NTS buses, though there is a change machine in the Downtown Nashua Transit Center. NTS also does not accept credit or debit cards as a form of payment or any kind of stored value debit or touch card fare collection system (as found in the MBTA system in the Boston area through its Charlie Card system). Surveys distributed to both NTS riders and non-riders in outlying communities indicate a significant disparity regarding preferences on this issue. Existing NTS riders indicated very little interest in mobile, credit card, or stored value fare systems, while residents in outlying communities expressed significant interest.

NTS operations staff indicated interest in exploring such systems, depending on installation and

maintenance costs and ease of operation. It is notable that the Charlie Card touch card fare system, which accepts credit and debit cards via payments at transit stations and aboard transit vehicles, has been expanded in recent years and is currently accepted as payment on virtually all regional transit carriers operating in Massachusetts from the Berkshires to Cape Cod. Should MBTA commuter rail service be expanded to Nashua, the feasibility of accepting the Charlie Card as a form of payment on NTS buses should be explored in order to expedite and ease transfers between two transit systems.

Additionally, NTS does not currently offer a GIS-based real-time and open source tracking application system where riders can access the approximate location of buses and the estimated wait times via internet connections on their mobile phones. These types of applications are gaining in popularity in an age where information is increasingly shared and available on demand. Both the Manchester Transit Authority (MTA) and Lowell Regional Transit Authority (LRTA) recently invested in and launched bus tracking systems, with LRTA's app utilizing RouteMatch software. Again, according to survey results, there was a disparity in preferences relating to demand for such systems between existing NTS riders and non-riders in outlying communities. Non-riders indicated high levels of support for open source bus tracking applications, while existing riders expressed relatively little interest.

NTS operations staff indicated an interest in launching a bus and shuttle tracking application in Nashua, again dependent on costs, availability of funds, and ease of operation.

PARATRANSIT

NTS provides paratransit services to Nashua residents with disabilities via its City Lift service. The passage of the Americans with Disabilities Act of 1990 (ADA) requires transit providers to offer complementary paratransit service to areas located within ¾ of a mile of fixed-route transit routes.

Under the ADA, complementary paratransit service is required for passengers who are:

1) Unable to navigate the public bus system
2) Unable to get to a point from which they could access the public bus system, or
3) Have a temporary need for these services because of injury or some type of limited duration cause of disability.

The Federal Transit Authority monitors transit providers for compliance with these conditions.

Because paratransit services can be quite costly to provide, NTS has made efforts to expand fixed route services to better meet the needs of disabled residents and reduce the need for paratransit offerings.

NTS contracts directly with the towns of Hudson and Merrimack to provide paratransit services to those communities. Paratransit riders in these communities are able to access destinations within the three municipality area. Fares are based on contract terms and vary based on distance. Four towns in the Nashua Region do not currently offer paratransit service, including the rural communities of Lyndeborough and Mason, as well as the towns of Litchfield and Pelham.

NTS contracts with the Souhegan Valley Transportation Collaborative to operate Souhegan Valley Rides, which provides 'dial-a-ride' demand

Souhegan Valley Transportation Collaborative

response bus or shuttle service to six communities in the Souhegan Valley; Amherst, Brookline, Hollis, Milford, Mont Vernon, and Wilton. The Nashua Regional Planning Commission provides administrative support and serves as the fiscal agent for SVTC.

The service operates Monday through Friday between the hours of 8 a.m. and 6 p.m. As of December 2015, the system had provided more than 20,000 rides and continues to grow in popularity. In order to utilize the service, prospective riders must complete an application and arrange for a ride at least two business days in advance.

The Nashua Transit System provides buses and call center functions for the collaborative. Milford residents comprise the largest share of ridership, accounting for approximately 70 percent of all rides. The service is sustained through fares, municipal appropriations and federal funding. The service is popular both among riders and the general public; in Milford, the only town in which residents vote directly on funding of the service, 75 percent or more of voters consistently approve spending for Souhegan Valley Rides (Town of Milford).

SVTC organizers have consistently indicated that due to rising levels of ridership, the service may outgrow its current model and expand into a permanent fixed-route service.

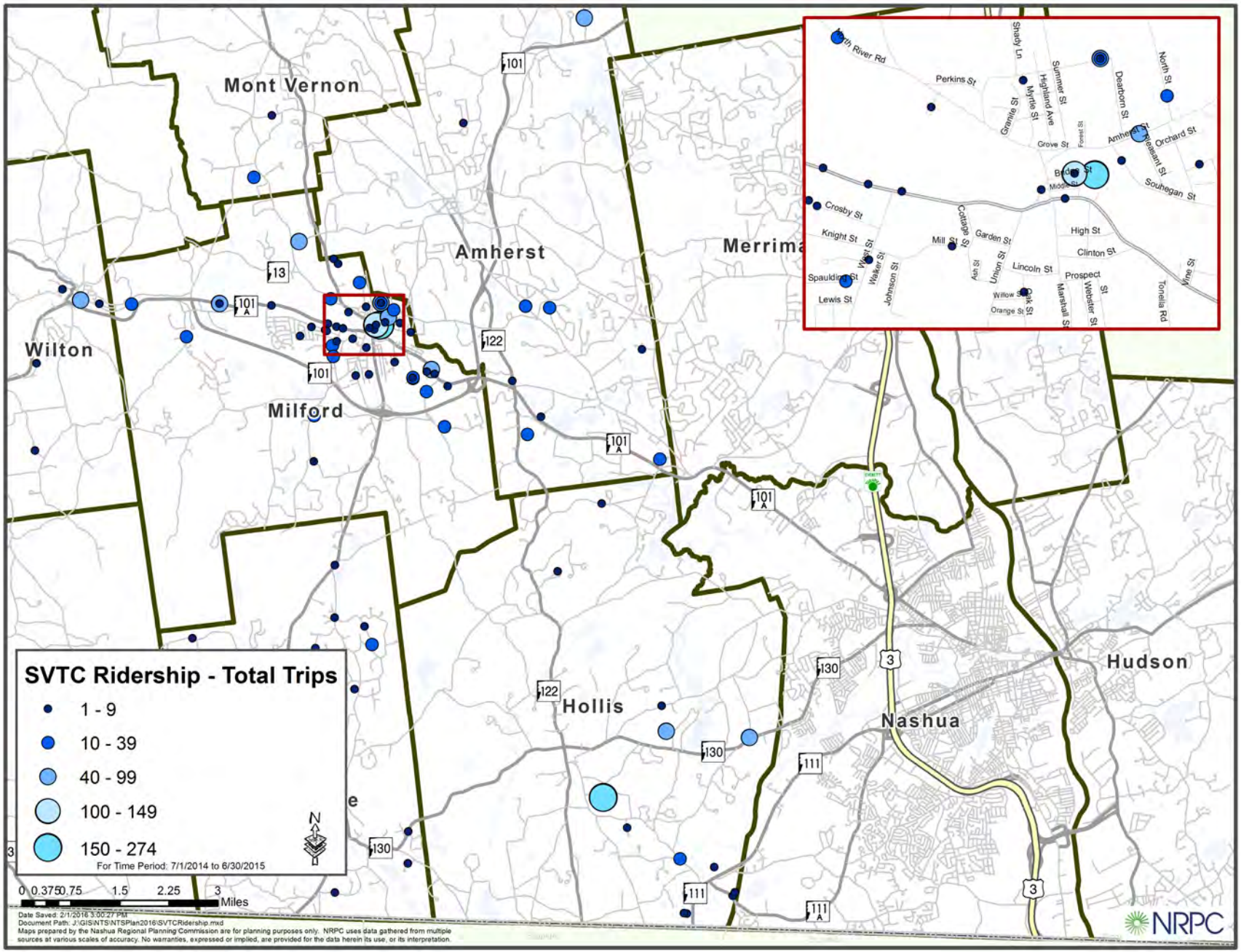
SVTC Origins

As noted, Milford makes up the largest share of SVTC trip origins, accounting for approximately 70 percent of all trip sources. Origin locations are heavily concentrated around the Downtown Milford area, including the Granite Square, Linsey Landing, and Beechbrook senior housing areas. Smaller clusters of SVTC pickup locations are found in varying areas of Amherst, Hollis, and Downtown Wilton.

SVTC Destinations

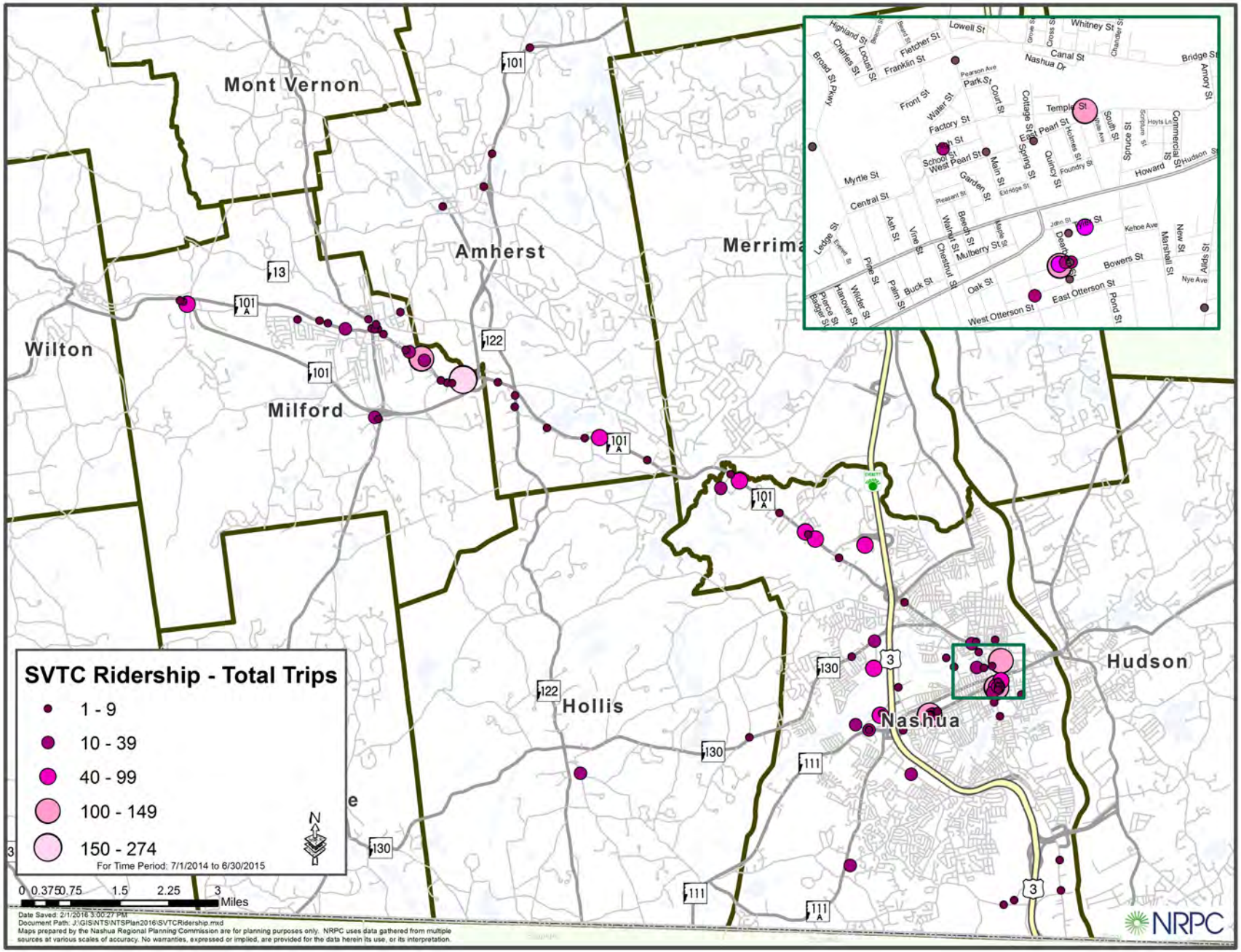
Though some shopping services are offered, non-emergency medical trips make up the largest share of SVTC trips. As such, destinations are heavily concentrated in Nashua at or surrounding the region's two largest hospitals; Saint Joseph's Hospital and the Southern New Hampshire Medical Center. However, there are many other areas of demand including South Nashua and the Exit 6 area of the city. Several destinations are located outside the city, including two major medical facilities in Milford, Hollis and Amherst.

SVTC: Origins



Data Source: NRPC GIS and the Nashua Transit System (NTS)

SVTC: Destinations



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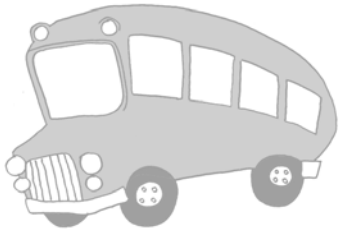

NTS

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Why Transit Matters

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Public Outreach

In the fall and winter of 2015-2016, the Nashua Regional Planning Commission, working in partnership with the Nashua Transit System (NTS), worked to collect public input related to public transit in the Nashua Region, including residents' interest and potential level of demand for public transit service, as well as general preferences related to travel in the region. The outreach strategy was two-pronged; focusing on existing riders of the NTS service as well as residents, largely centered in communities outlying Nashua, who do not use the service and currently have little or no access to public transit service. Planners were interested both in opinions regarding the Nashua Transit service from those who are most familiar with it; its riders, as well as from residents of surrounding communities regarding their level of interest in public transit service in their communities.

Residents were asked if they would use public transit service if it was available in their neighborhoods and their communities. They were also asked about their general perception of public transit, what service frequencies would make it attractive, and what locations they would be most likely to use public transit to access. Finally, they were queried regarding potential technological improvements to the existing public transit system and how likely such improvements might be to impact their ridership.

The Nashua Transit System has regularly surveyed its riders in the past regarding rider satisfaction levels with the current service and suggestions for potential improvements. NTS often hears from city representatives regarding potential improvements to the system. The public outreach portion of this plan offered the Nashua Transit System and NRPC a unique opportunity to evaluate the current level of rider satisfaction as well as desired future services and amenities.


Editorials

Thursday, January 14, 2016

Voice opinion on bus service

As Julie Andrews sang in "My Fair Lady," "Wouldn't it be loverly?"

She wasn't talking about the idea of expanded bus service for southern New Hampshire, including the Souhegan Valley, but we are. In last week's Cabinet, there was a brief item about the Nashua Regional Planning Commission working with the Nashua Transit System to study the idea of expanding bus service, and you can help them to decide what to do by completing a survey.

CURRENT RIDERS

In a Nutshell

78%

A vast majority of Nashua Transit riders noted that they used the system OUT OF NECESSITY, not because they CHOSE TO. While noting some areas for improvement, including more frequent bus stops and more transit destinations, riders were overwhelmingly complimentary of the current system, noting most often the professionalism and helpfulness of NTS employees, the punctuality and reliability of service, and the cleanliness of buses.

52%

Nashua Transit rider survey respondents were more likely to be slightly younger than their non-rider counterparts. Approximately 52 percent fell between the ages of 35 and 64. The age breakdown of other respondents included:

- Under 18: **3%**
- 19-34: **23%**
- Over 65: **20%**

73%

Approximately 73 percent of all survey respondents answered YES, the Nashua Transit System meets their current needs.

20%

Approximately 20 percent of all survey respondents volunteered Wal-Mart when asked to specify a desired destination not currently served by the transit system. Other responses included the city Welfare office, Derry, Concord, Tyngsborough, Manchester, Lowell, Boston, and Hampton Beach. Several pointed to the Tyngsborough movie theater and the Mall of New Hampshire as specific sites.

"I appreciate this transit system, because it allows me to have independence. I can go to my medical appointments and do my shopping.

Thank you."

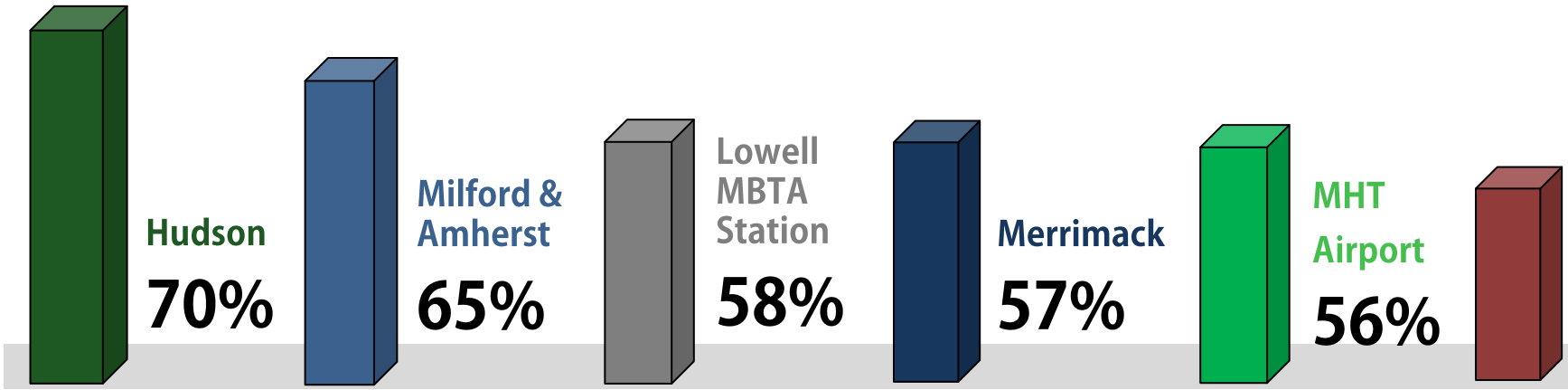
The Nashua Transit System regularly queries riders regarding their satisfaction with the transit system and potential interest in expansions or increases in service frequency. Whenever possible, NTS uses this input to determine changes in routes or plan longer-term expansions.

As a city agency, NTS also commonly hears from representatives of city government regarding expansion or service frequency needs.

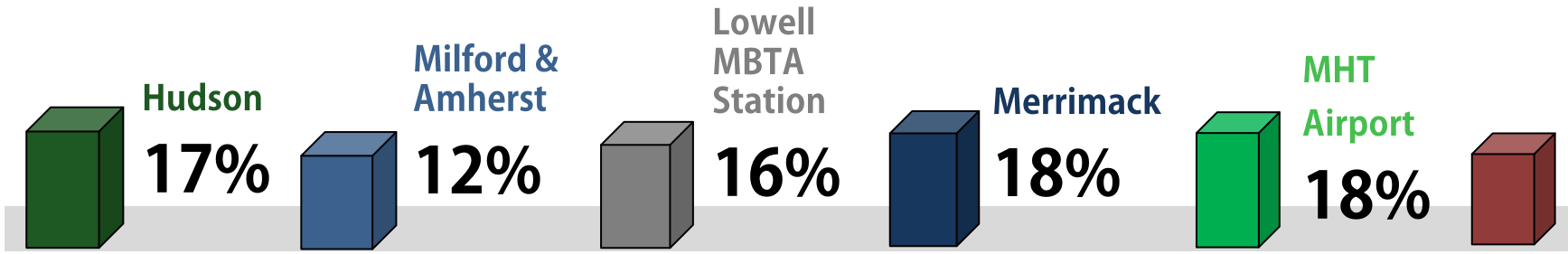
The dual nature of the survey for this plan offered the system and NRPC the unique opportunity to survey both NTS riders as well as residents from across the region, most of whom do not have access to fixed route public transit. The opinions of both riders and non-riders are key to determining the public's appetite for region-wide service expansion.

A series of eye-catching posters were installed on all NTS buses and helped direct riders' attention to the survey.

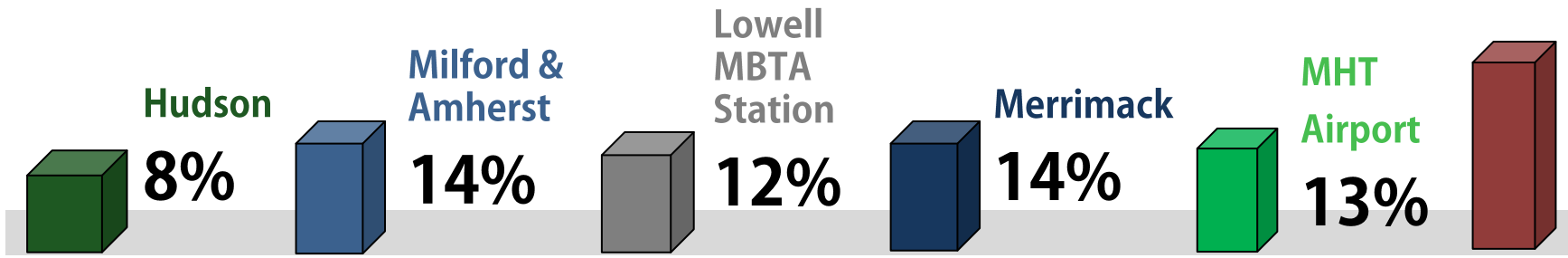
Respondents answering service would be VERY USEFUL to get to a destination



Respondents answering service would be SOMEWHAT USEFUL to get to a destination



Respondents answering service would be NOT VERY or NOT AT ALL USEFUL to get to a destination



POTENTIAL RIDERS

In a Nutshell

20 Communities

Slightly more than 400 residents from 20 different communities participated in the survey, ranging from Pittsfield to Wakefield. Residents from all 13 NRPC member communities participated, representing approximately 96% of all survey respondents. Other communities represented included Bedford, Greenfield, Manchester, Peterborough and Rindge. Among all communities, Milford, Amherst, Hudson, Nashua and Mason boasted the highest participation rates in the survey.

64%

Residents of all age groups participated in the survey, but those aged 35-64 represented the lion's share, accounting for 64 percent of all survey respondents. Those under 18 accounted for 4 percent of all survey respondents, while 19-34 year olds made up 21 percent of survey takers. Residents over the age of 64 accounted for 20 percent of respondents.

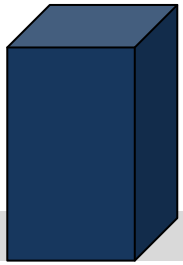
60%

A majority of residents noted that they would like to see public transit service extended beyond the Nashua Region. Manchester and Peterborough were the most popular destinations cited. Others noted interest in transit service to Concord (NH), Lowell, Boston, and the Route 128 corridor and the Seacoast.

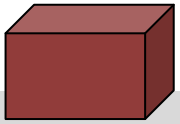
"Thank you for initiating this conversation! This is so important to our community"

-Wilton Resident

If public transit service was available in your community, would you use it?



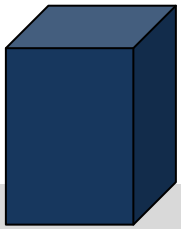
YES
73.9%



NO
26.1%

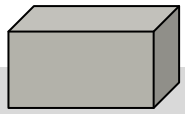
RESULTS by COMMUNITY

Hudson	Amherst	Milford	Merrimack	Mason
YES 74%	YES 74%	YES 72%	YES 64%	YES 63%
NO 26%	NO 26%	NO 28%	NO 36%	NO 37%



Mostly Positive
63.2%

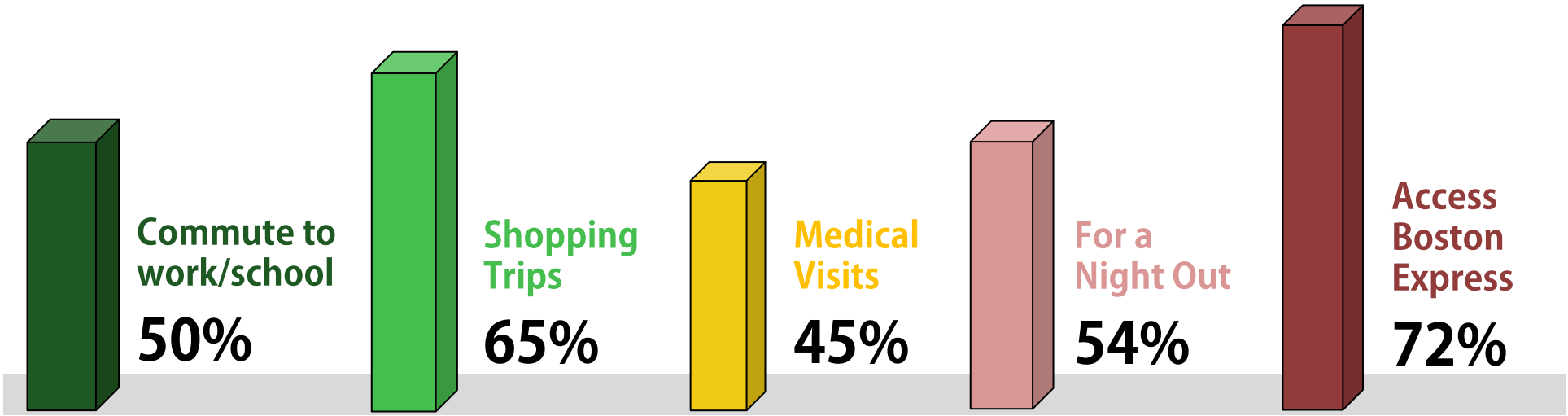
Mostly Negative



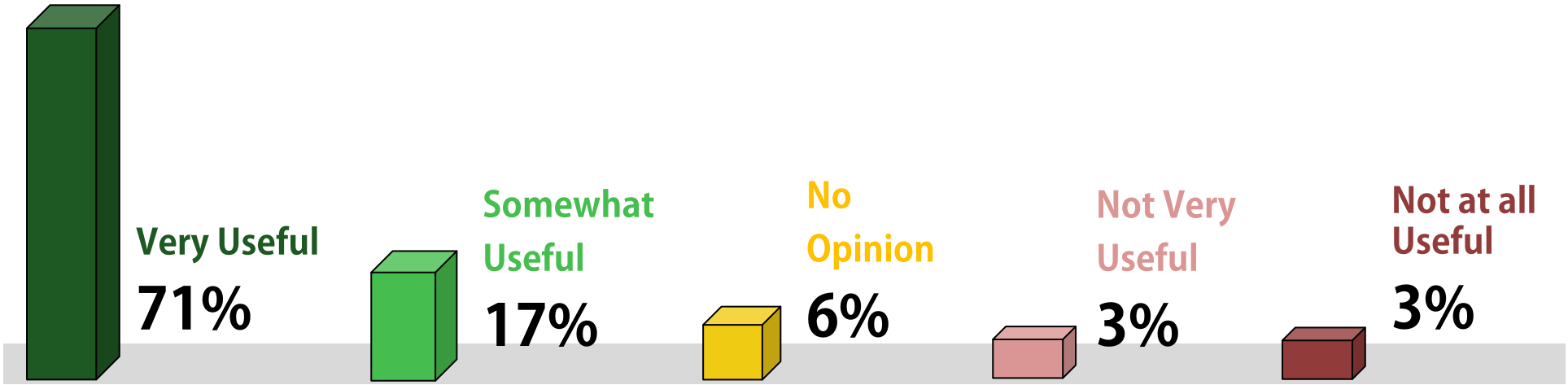
Neutral
24.1%

Unsurprisingly, among residents who indicated that they had a mostly positive perception of public transit, 92% indicated that they would use public transit if it was available in their community.

If you answered YES, you would use public transit, what do you believe you would be most likely to use it for?



The ability to pay for transit fare with credit or debit card or via a smart phone app.



Milford Resident Feedback

"We have two cars in our household and would love drop to one. I support bus and rail in Milford! Less cars on the road —greener, cleaner towns."

- Milford Resident

"Much would depend on convenience: availability of parking, timing of buses, number of changes between my home and work (Rivier). About to spend 6 weeks on crutches, so I've been thinking a lot more about this."

-Milford Resident

"Wish we already had some kind of public transportation system. Tired of having to ask my friends and family."

-Milford Resident

"We could really use public transportation here in Milford. I see many people walking daily. Some seem to walk miles just to shop. They even walk in the cold rain and snow."

-Milford Resident

"I own my own car, but many people don't and I feel they would greatly benefit from public transportation. Plus, there may come a day when I will need it."

- Milford Resident

"My daughter attends college in Nashua. Public transportation between Milford and Nashua would provide a strong benefit."

-Milford Resident

In noting that they would not utilize public transit, survey respondents most commonly indicated that they owned a car and found driving most convenient for their needs. Other respondents noted that they lived in rural areas where transit service was not feasible, or concern regarding local taxes and the role of government. Many volunteered that while they would not choose to use public transit, they knew of others in their community who would benefit from it.

Other Resident Feedback

"I already take the Boston Express bus every workday. I drive the 5 miles from home to the bus terminal.

- Amherst Resident

"Would be nice to go out to dinner and have a drink without having to worry about driving. Please connect us to Boston Express/Exit 8!

- Brookline Resident

"I would love to see public transportation in Hudson, I grew up in a city with Public transportation and it was great. I would like my kids to see how convenient it is."

"Do not ignore small towns! Public transportation also contributes to businesses moving to smaller communities other than Nashua or larger towns!!!!

"We are getting on in years and still drive... However, I do see it as a valuable asset in the future."

"Advertise heavily, with a wide variety of methods. Make it sound like fun. Suburbanites are not accustomed to public transit. But it's a good idea."

- Hudson Resident

"As a business owner, it would be useful for customers to be able to use public transportation to run errands while waiting for their vehicle to be serviced."

"Public transportation would be so helpful to those of us with a disability that are unable to drive. We are essentially trapped in Mason…Many of us did not plan on having a severe disability when first moving to Mason."

- Mason Resident

"A train to Boston would be helpful. Late night service from Boston to allow to get to after seeing events in Boston that end after 10pm ."

- Merrimack Resident

Additional Feedback



Reasons People Do Not Currently Use Public Transit

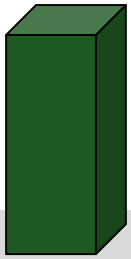
- It is easier to use a car because there is more flexibility
- Public transit does not fit all work schedules
- Kids need to be dropped off at daycare
- People work outside of the service area

Suggestions

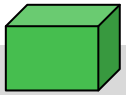
- A rail from North Station in Boston to Manchester or Nashua would be useful
- Having sheltered bus stops, more lighting, and sidewalk access
- It would be helpful if public transit connected to major hubs in MA

In noting that they would not utilize public transit, survey respondents most commonly indicated that they owned a car and found driving most convenient for their needs. Other respondents noted that they lived in rural areas where transit service was not feasible, or concern regarding local taxes and the role of government. Many volunteered that while they would not choose to use public transit, they knew of others in their community who would benefit from it.

A smartphone app allowing you to check the location of the next bus and the approximate waiting time



Very Useful
69%



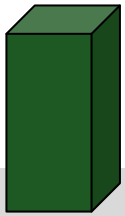
Somewhat Useful
15%

No Opinion
7%

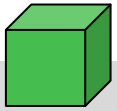
Not Very Useful
3%

Not at all Useful
6%

Public transit service to destinations within your community

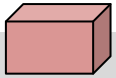


Very Useful
52%

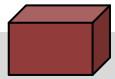


Somewhat Useful
21%

No Opinion
6%

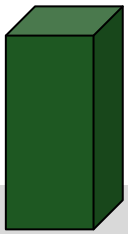


Not Very Useful
11%

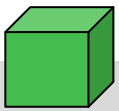


Not at all Useful
10%

Public transit service to Nashua



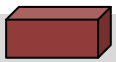
Very Useful
61%



Somewhat Useful
20%

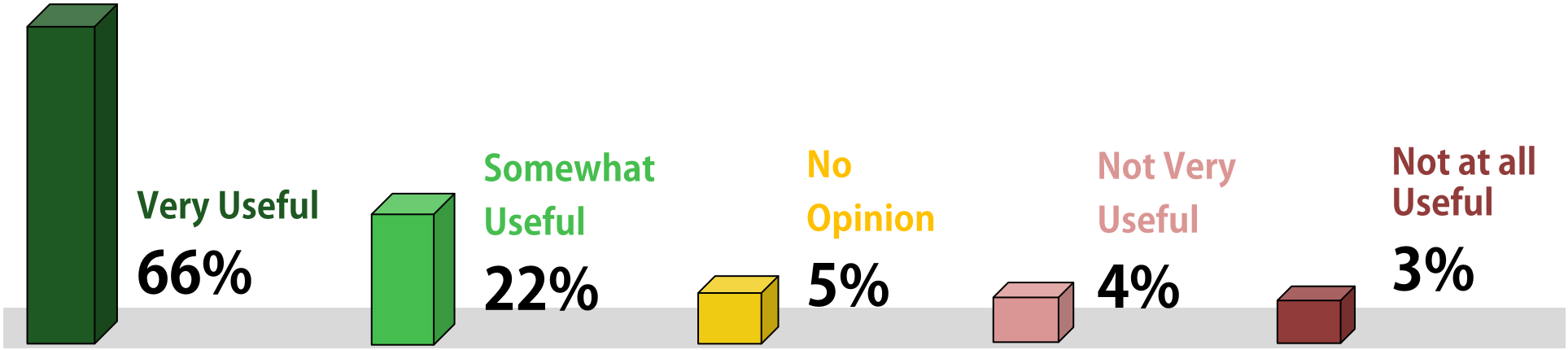
No Opinion
6%

Not Very Useful
8%

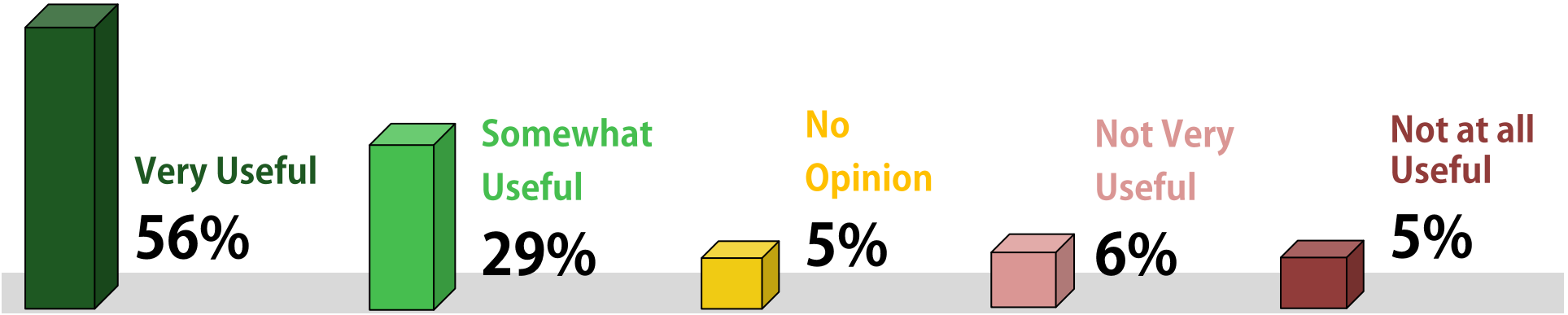


Not at all Useful
5%

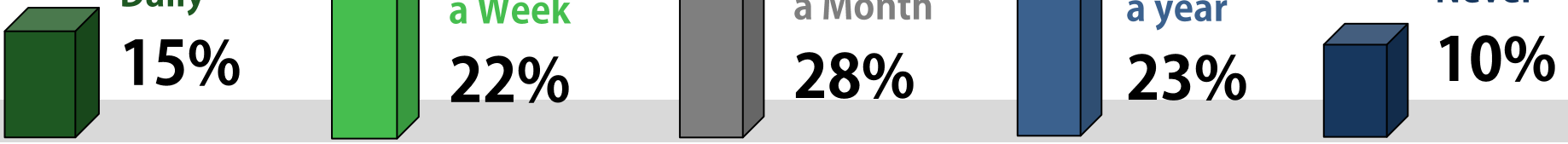
Public transit service to the Manchester Airport



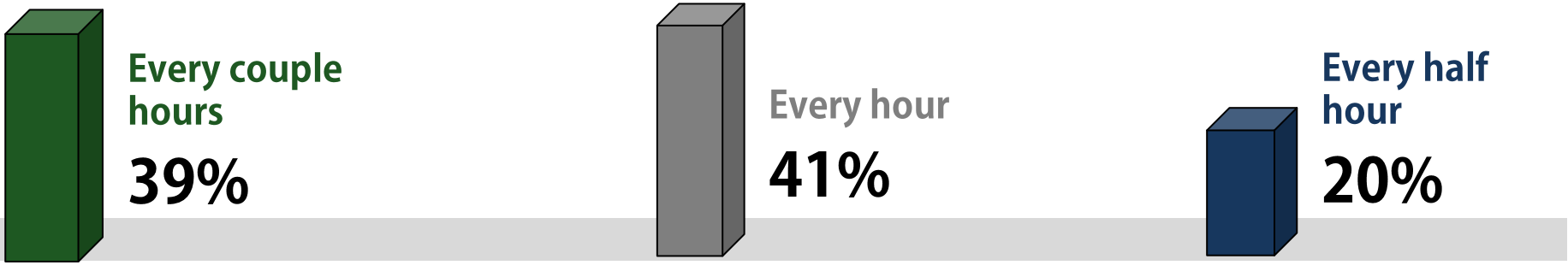
Public transit service at night and on weekends



If public transit was available in your community, how often do you anticipate you would use it?



In order for you to use public transit, how frequently would buses need to service your community?



Ridership Demographics

A number of demographic and environmental factors are associated with public transit usage. Generally, public transit usage tends to be higher in densely populated areas with more walkable street networks and land use patterns. In some areas, public transit usage is heavily associated with socioeconomic factors like income and vehicle availability, while in others public transit is well integrated into regional transportation networks and riders represent a variety of socioeconomic backgrounds.

In the Nashua Region, several demographic and environmental factors present headwinds to public transit ridership. While the City of Nashua represents the region's population and employment center, jobs and residents are heavily dispersed across the rest of the region, and even within the city itself. In many areas, residences are separated from employment and commercial centers. Absent Central Nashua, the region is relatively affluent, vehicle availability is high, and public transit is not well integrated into the regional transportation network. Finally, the population tracks older than the national average and there are few major generators of public transit ridership like major universities or research centers.

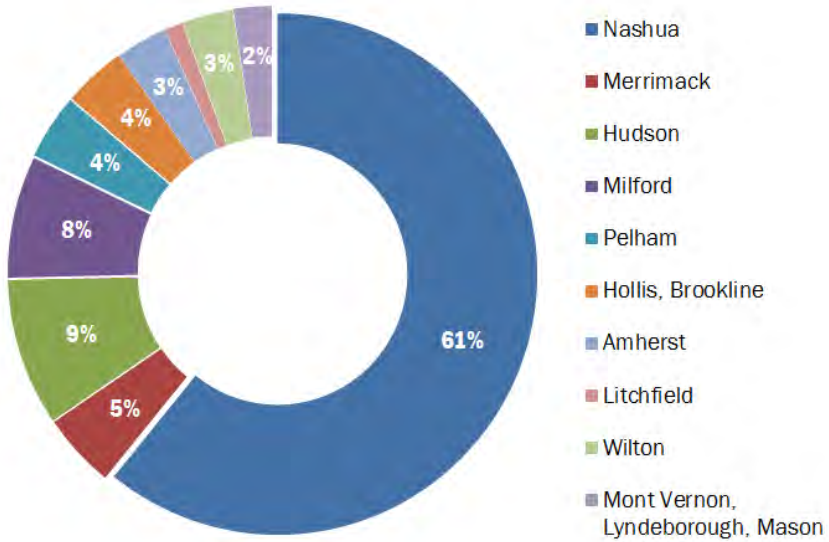
Despite these headwinds, in public outreach efforts associated with the development of the Nashua Regional Plan in 2014, residents repeatedly advocated for more transportation options. Historically, public transit was widely available across the region with streetcar routes crisscrossing Nashua and Pelham and passenger rail service available in virtually all of the region's communities at one time.

Several demographic trends are forecast to spur greater demand in public transit moving forward, including a projected 132 percent jump in the region's senior population by 2040.

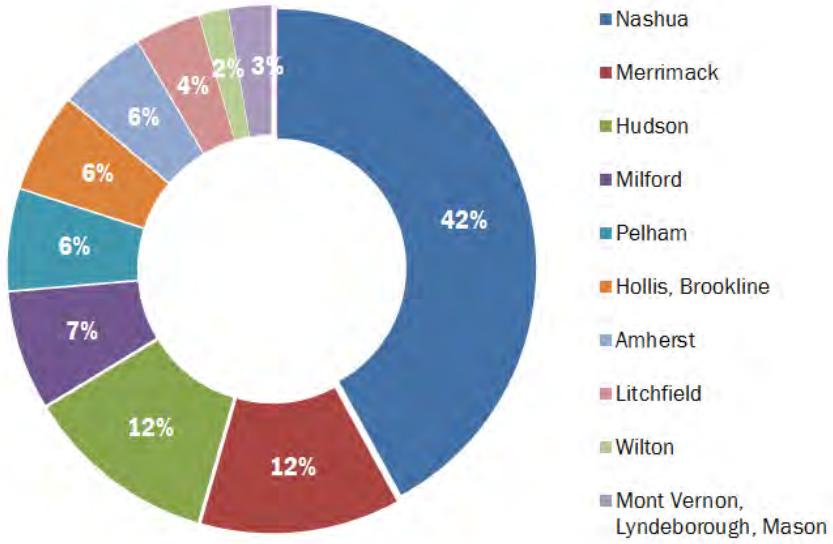
The following pages evaluate demographic trends across the region, with a focus on those areas where public transit needs might become more acute over time.

POPULATION

Nashua Region 1960 Population: 64,269



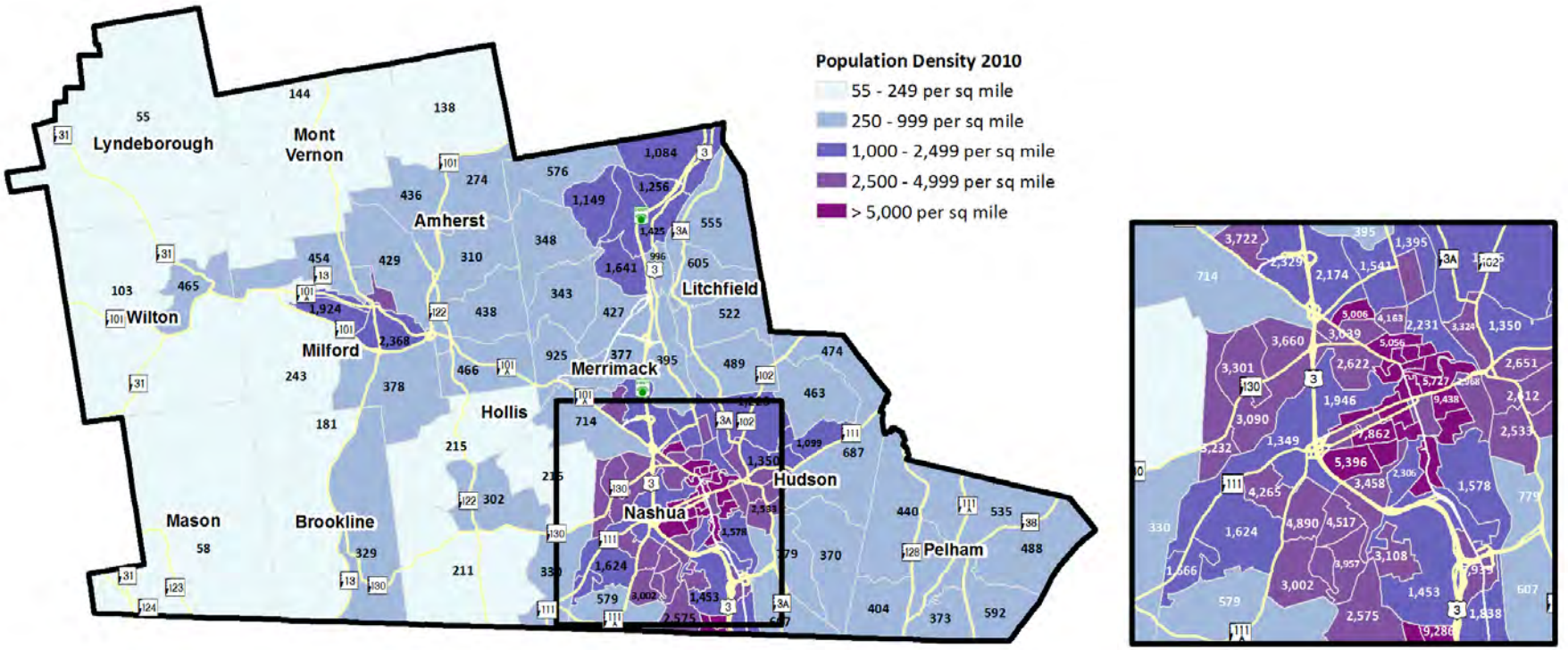
Nashua Region 2010 Population: 205,765



Over the last 50 years, population growth in the region has consistently scattered from the City of Nashua to outlying communities. Although the City of Nashua's population grew by more than 100% between 1960 and 2010, jumping from 39,000 to over 86,000, growth has been even more robust in surrounding communities. While Nashua housed 61 percent of the region's population in 1960; the city accommodated only 42 percent in 2010. During the same period, population growth in many outlying communities jumped considerably. Notably, Merrimack's population increased from fewer than 3,000 residents in 1960 to more than 25,000 in 2010. Similarly, Hudson grew from fewer than 6,000 residents in 1960 to nearly 25,000 in 2010. Communities like Brookline, Hollis, Litchfield and Pelham also grew to take up larger shares of the region's population.

This growth was largely fueled by single family home construction, with much of it occurring on lots of one acre or more. The dispersed nature of this growth and the fact that a large share of it occurred distant to commercial and employment centers, makes providing transportation options aside from car travel more difficult.

Population Density

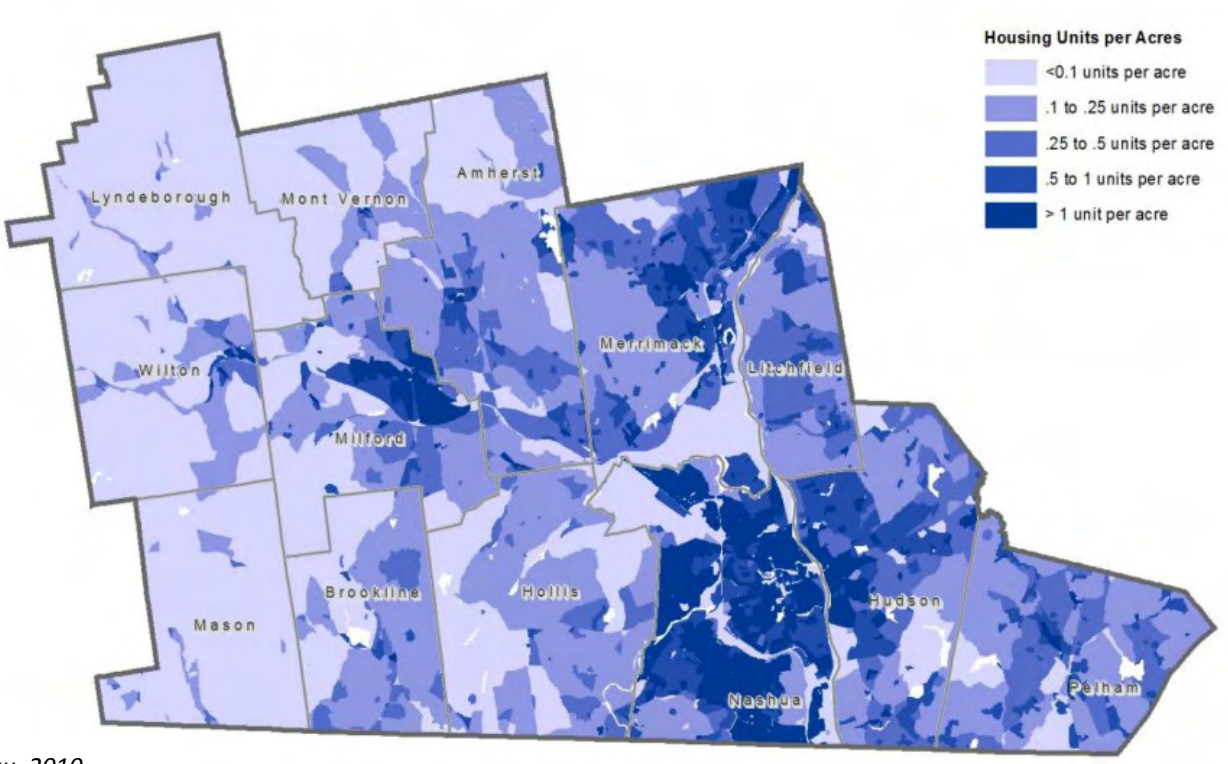


Data Source: U.S. Census Bureau, 2010

As the second largest city and the second most densely populated municipality in the state, it is unsurprising that the City of Nashua serves as the population center for the region. Population density is highest in central Nashua, including the downtown area, as well as the Tree Streets, East Hollis, South Nashua, Crown Hill and Charlotte Avenue neighborhoods. Generally, population density diminishes with distance from the central Nashua area. Interestingly, the Route 101A corridor, which includes the busy Route 2 and 2A transit lines, includes one of the lowest population densities in the city. It is likely that transit ridership is primarily driven by the very large concentration of commercial uses along the roadway, as well as the presence of Nashua Community College.

There are additional concentrations of population density located outside Nashua. Hudson Town Center and the downtown and east side areas of Milford include the highest population densities outside the city. Northeast Merrimack includes the next highest concentration of population density.

Housing Unit Density

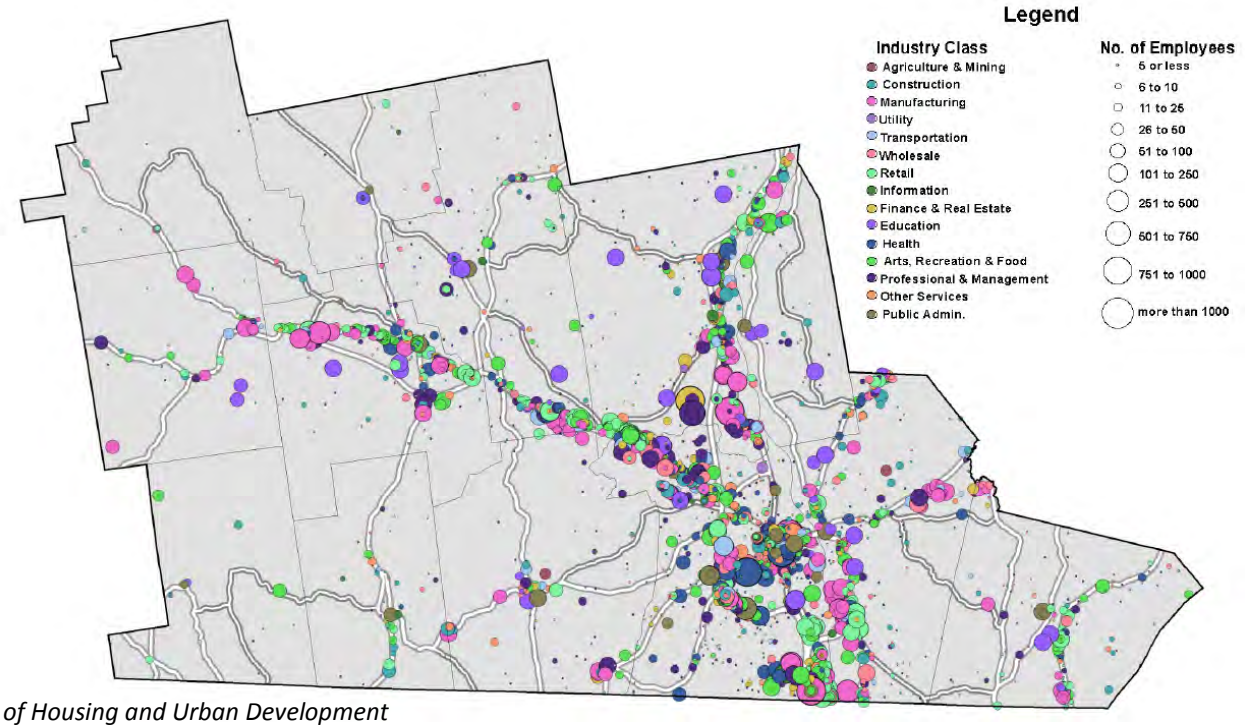


Data Source: U.S. Census Bureau, 2010

In several communities, the population is relatively evenly dispersed across large geographic areas. This is particularly true of Litchfield, Pelham, and Amherst. While all of these communities are sizable (in the regional context), public transit service might prove challenging provided the highly dispersed nature of their populations. In such communities, park-and-ride transit facilities, in which residents drive to a central point to access transit services, might prove most feasible. Finally, it is important to note that even in communities with low population densities, commercial uses might be heavily concentrated, increasing the viability of public transit in the community. This is true of Amherst, where a large concentration of commercial uses is centered immediately along the Route 101A corridor.

This growth was largely fueled by single family home construction, with much of it occurring on lots of one acre or more. The dispersed nature of this growth and the fact that a large share of it occurred distant to commercial and employment centers makes providing transportation options aside from car travel more difficult.

Employment



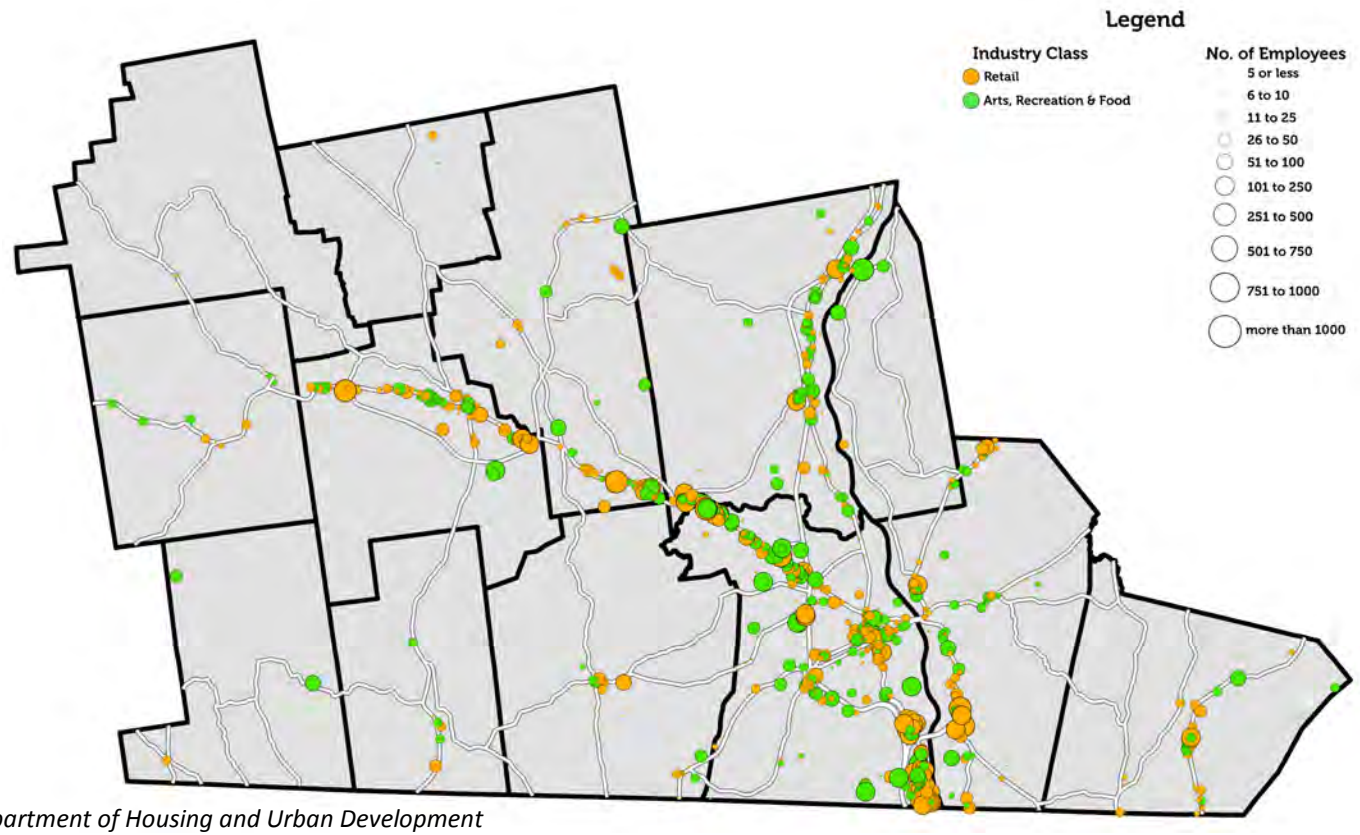
Data Source: U.S. Department of Housing and Urban Development

With approximately 52,000 jobs, the City of Nashua is the second largest employment center in the state and anchors the job market for the region, comprising approximately 53 percent of employment in the region. Employment nodes in the city include South Nashua, the Route 101A and Somerset Parkway corridors, Downtown Nashua, and areas lining the Everett Turnpike from Exit 4 to Exit 6 (particularly the Simon Street and Northeastern Boulevard areas). While Nashua is the region's employment center, approximately 47 percent of jobs in the region are located outside of the city in areas currently unserved by transit. With 17,000 jobs, Merrimack is the second largest job center in the region by a large margin, with employment heavily concentrated along the Daniel Webster Highway corridor. Hudson, Amherst, and Milford are also major employment centers in the region, with jobs concentrated along Route 3A in Hudson and along the Route 101A corridor in Amherst and Milford.

Employment in the Nashua Region is heavily concentrated along major thoroughfares like the F.E. Everett Turnpike, Route 101A, Daniel Webster Highway and Route 3A.

With a large employment concentration in professional services and finance, Merrimack boasts the highest paying jobs by far in the region with average weekly wages in that community surpassing $1,700.

Employment – Retail, Recreation, Arts and Food



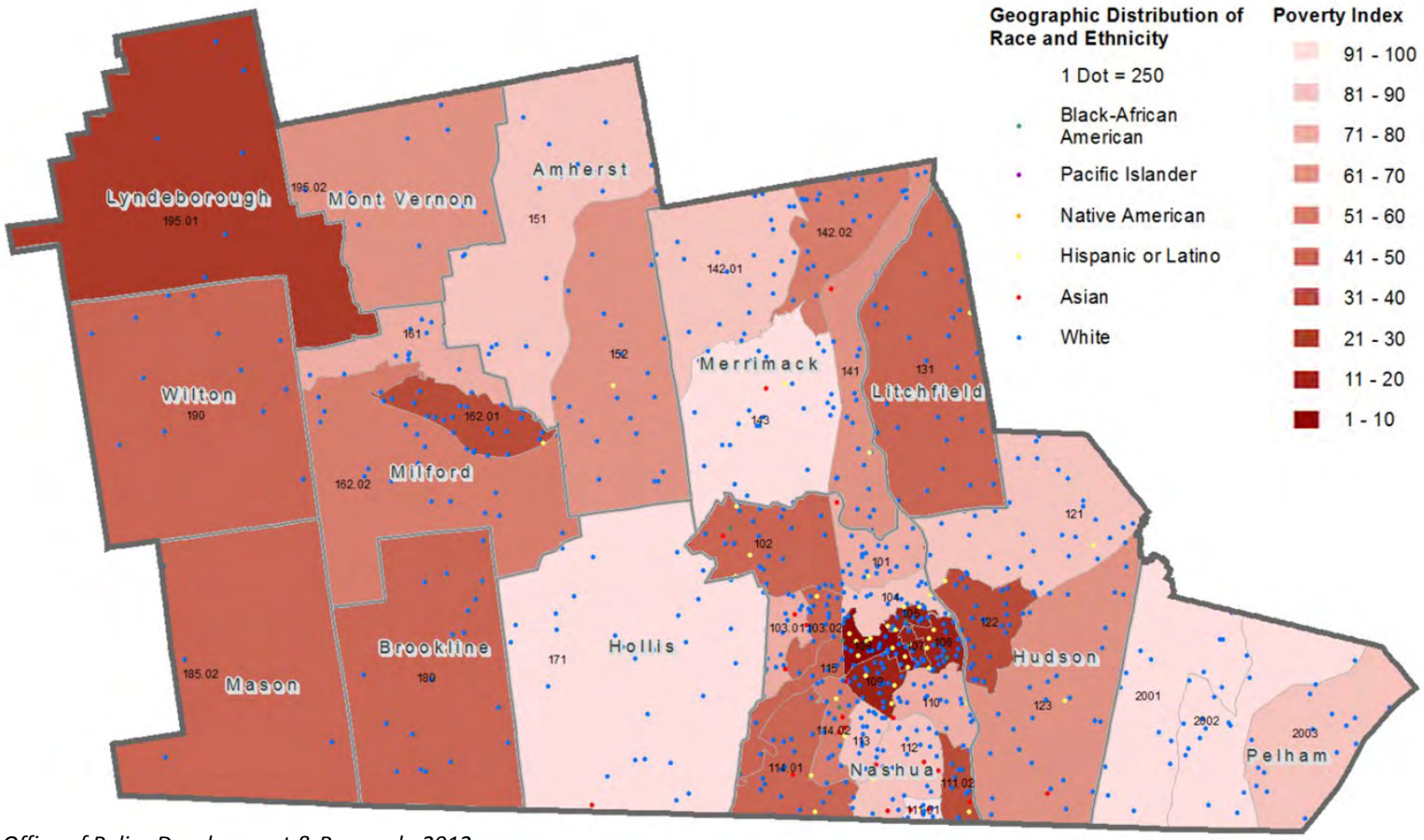
Data Source: U.S. Department of Housing and Urban Development

Wages trend lower away from the F.E. Everett Turnpike, in rural communities and in those like Amherst and Milford with large retail concentrations. However, the lowest average weekly wages in the region are found in the rural communities of Wilton ($694) and Mason ($584).

Transit ridership in the City of Nashua is closely correlated to concentrations of retail and food service jobs and businesses. Transit riders access these areas both for personal needs and services and for employment, as jobs in these fields tend to be entry-level and lower paying and thus tend to be very accessible for transit-dependent populations, including young people and those without access to a vehicle.

Outside of Nashua, this type of employment is concentrated in three areas; the Route 101A corridor of South Merrimack, Amherst, and Nashua, the Route 3A corridor of Hudson (largely between the two Nashua-Hudson bridges), and the Daniel Webster Highway corridor in Merrimack between exits 10 and 12 of the F. E. Everett Turnpike. Small pockets of such employment can be found along Route 28 in Pelham and in Hollis Village.

Poverty Index & Race



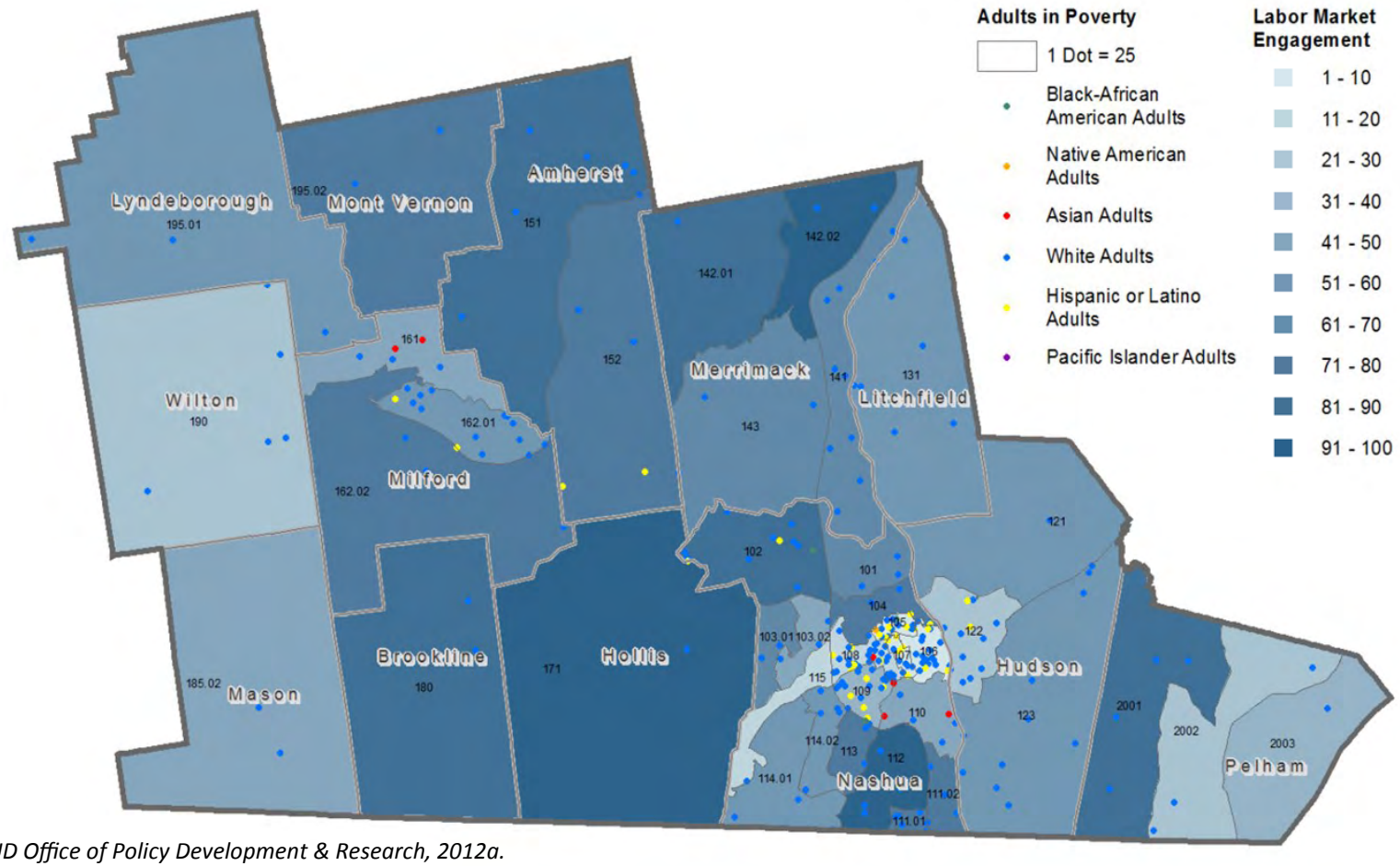
Data Source: HUD Office of Policy Development & Research, 2012a.

Similar to looking at the number of percent of persons living below the federal poverty line, the HUD Poverty Index illustrates the intensity of poverty in a particular neighborhood or census tract as displayed in the map above. The index is computed using family poverty rates and percentage of families receiving public assistance.

Values closer to the maximum of 100 imply the lowest levels of poverty and those closest to the minimum of 0, the highest levels of poverty.

When the number of adults by race is overlain onto the poverty index, it is noticeable that those living in poverty generally live within community centers with access to jobs, services and transportation. What is not apparent is that rates of poverty are much higher among Hispanic Latino (22.6%) and African American (18.4%) population, opposed to the overall 6.2% poverty rate in the region.

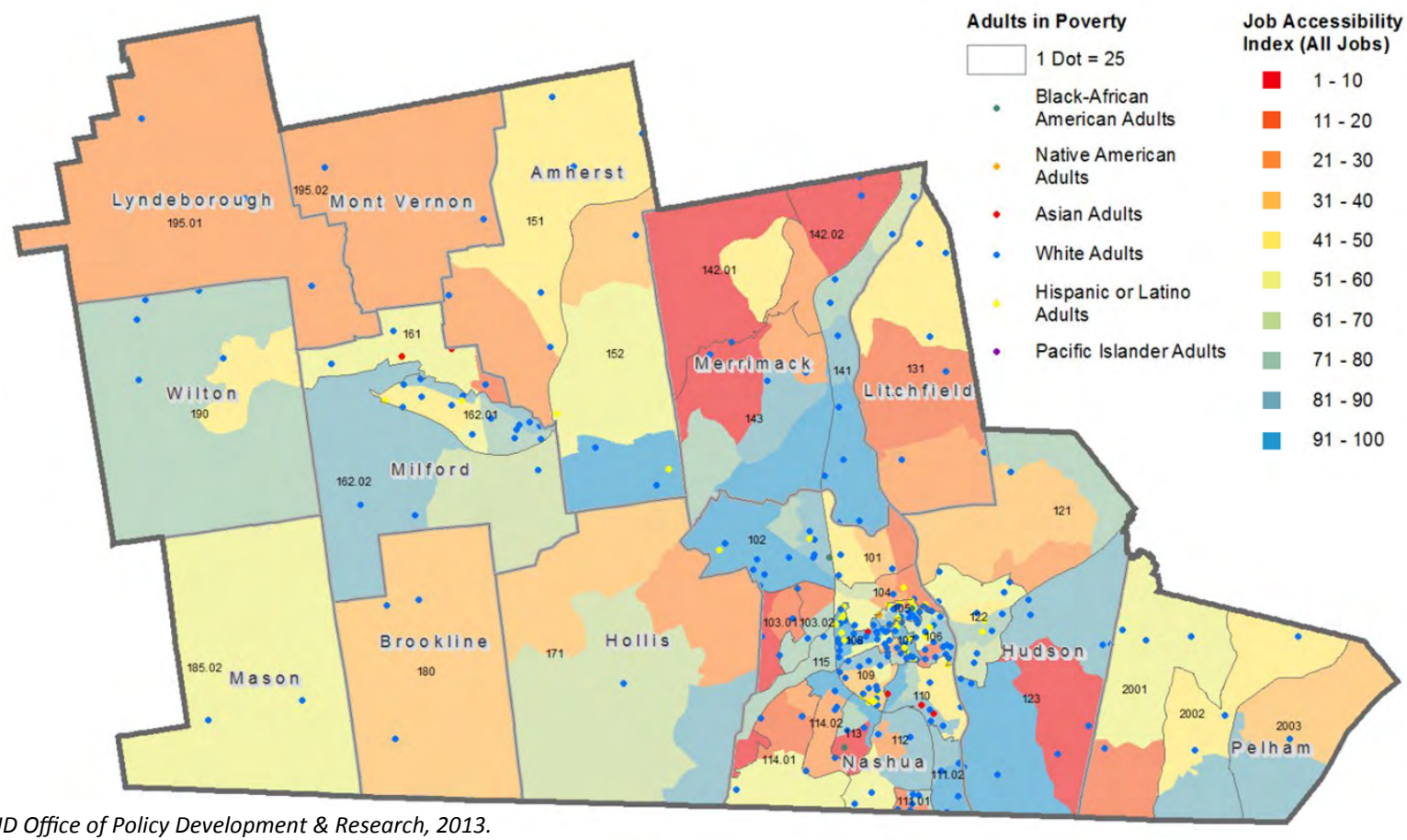
Labor Market Engagement and Adults in Poverty



Data Source: HUD Office of Policy Development & Research, 2012a.

The labor market engagement index provides a summary description of the relative intensity of labor market engagement and human capital in a neighborhood. This is based upon the level of employment, labor market participation, and educational attainment in that neighborhood. Formally, the index is a linear combination of three standardized vectors; unemployment rate, labor force participation rate, and the percent of the population with a bachelors degree or higher. Labor market engagement is highest in Amherst, Brookline, Hollis, Merrimack and Mont Vernon. The lowest measures are found in Central Nashua and the West Hollis corridor of the city (where several mobile home communities are located). Again, lower labor market engagement corresponds to increased Hispanic populations within the City of Nashua.

Job Accessibility and Adults in Poverty by Race

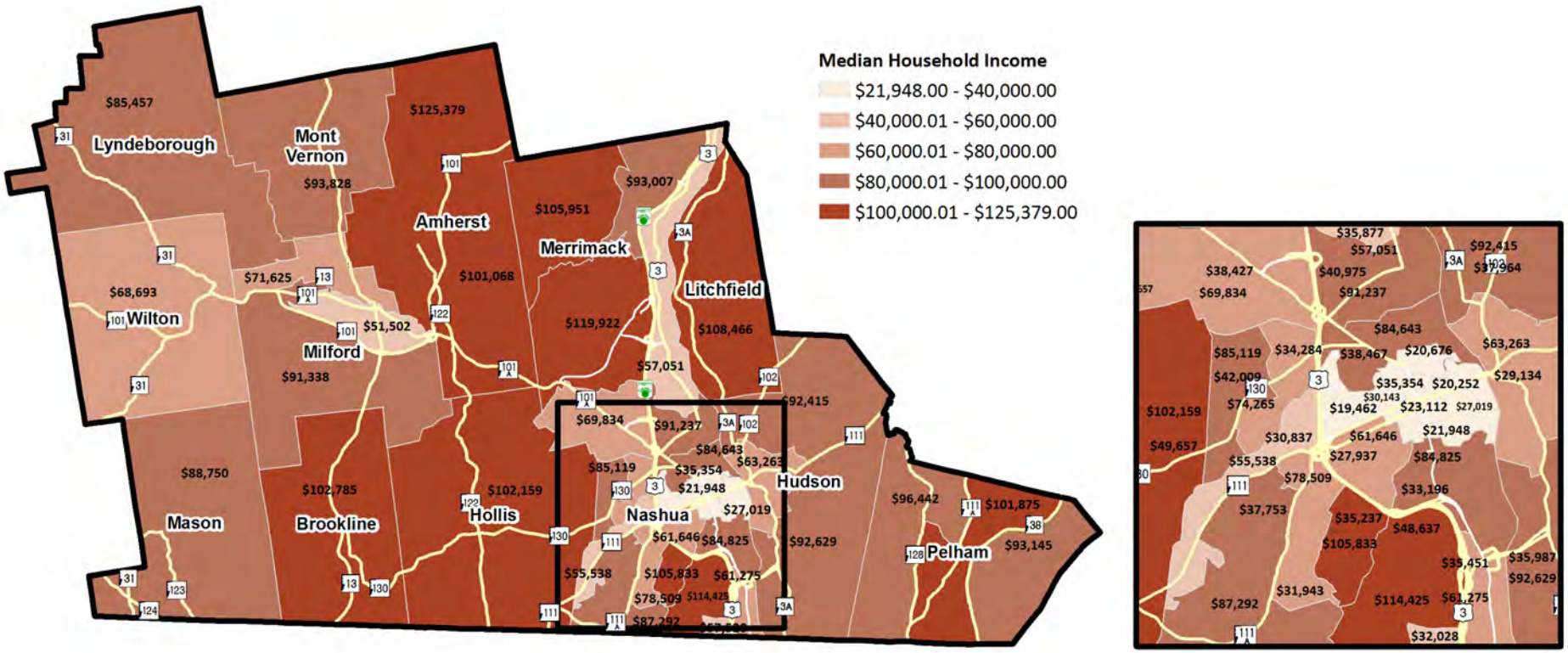


Data Source: HUD Office of Policy Development & Research, 2013.

The job accessibility index summarizes the accessibility of residential neighborhoods relative to its distance to all job locations, with distance to larger employment centers weighted more heavily. Specifically, a gravity model is used, where the accessibility of a residential block group is a summary description of the distance to all job locations, with the distance from any single job location positively weighted by the size of employment (job opportunities) at that location and inversely weighted by the labor supply (competition) to that location.

There is significant diversity in measures of job accessibility across the region. Southern areas of Amherst, Merrimack and Hudson all enjoy high levels of job accessibility, while more rural communities tend to have lower indices. It is notable that for the region's three largest municipalities by population - Nashua, Hudson and Merrimack – job accessibility indices are the most diverse.

Median Household Income

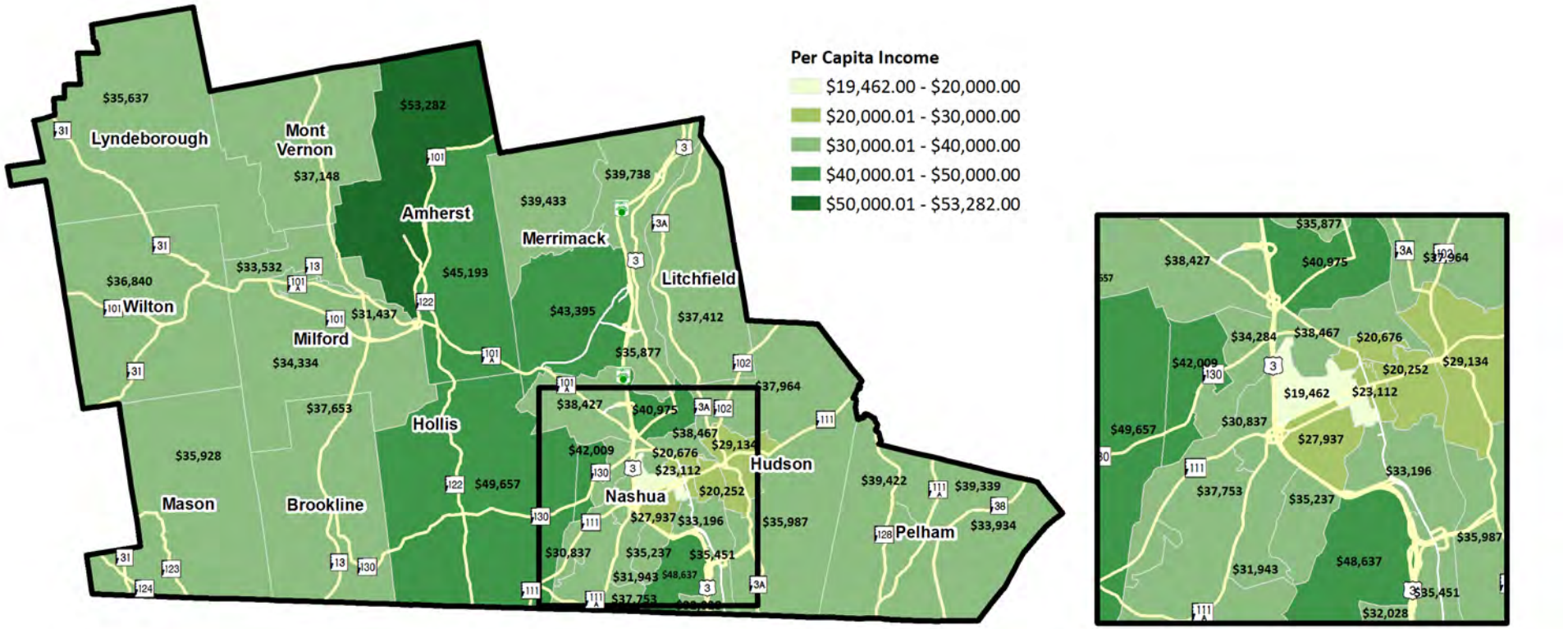


Data Source: U.S. American Community Survey 2010-2014

Median household income levels measure median income levels for households, regardless of the number or age of household residents. Therefore median household levels would be expected to trend higher in areas with large household sizes and lower in single-resident households. Both Nashua and Milford include a diversity of median household income levels, with the lowest amounts found in central Nashua, and particularly the Tree Streets, East Hollis, and French Hill neighborhoods.

For most of the geography of the region, median household income levels track quite high (above $80,000), though there are pockets of lower income areas in Hudson Town Center, Wilton, and the east side of Merrimack.

Per Capita Income

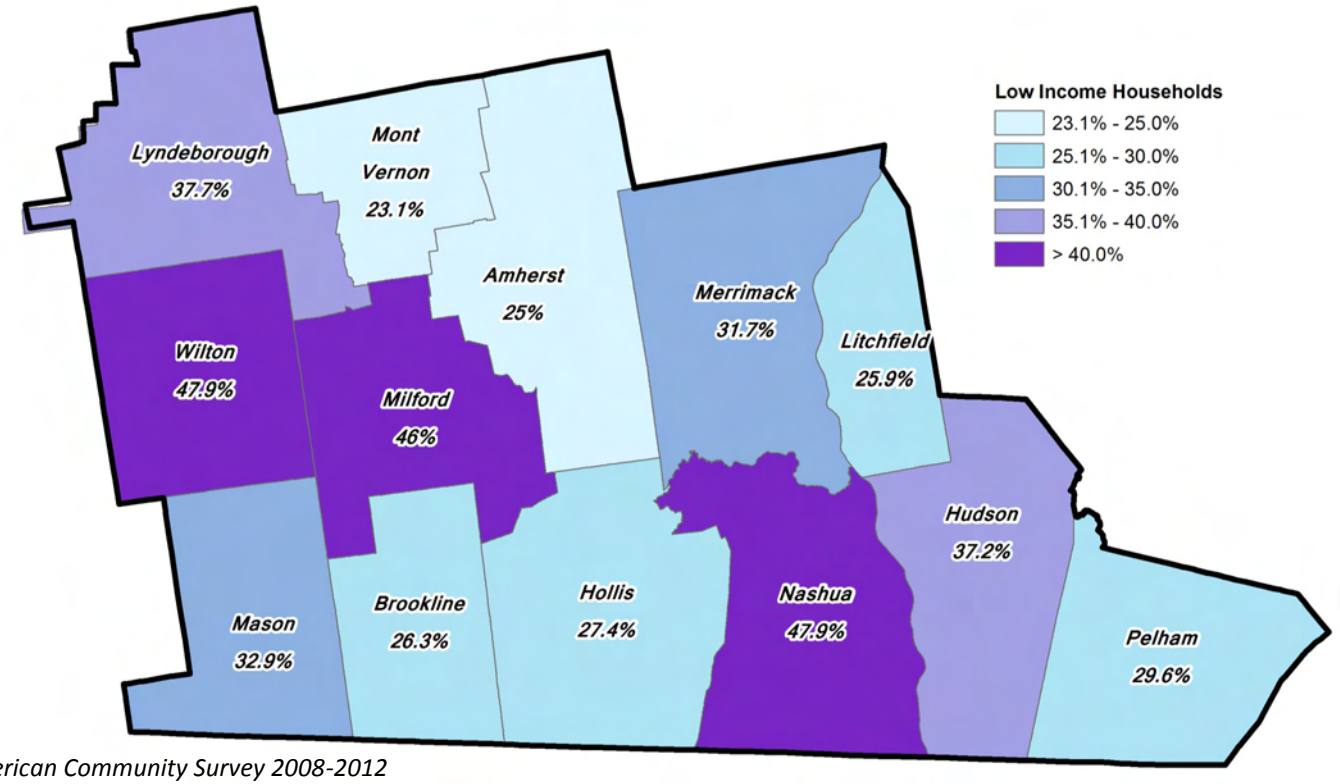


Data Source: U.S. American Community Survey 2010-2014

Per capita income is an alternative to median household income as a measurement of income levels. While median household income includes the median reported income of households regardless of the number of residents, per capita income includes mean income divided by the total number of children and adults in a community. When analyzed in concert with median household income levels, per capita income can provide a more complete accounting of income levels. Per capita income is also subject to issues however, as it includes children, disabled residents, and the very aged, who would not be expected to earn significant, if any, income.

In the Nashua Region, per capita income levels are tremendously diverse in Nashua, with levels lowest in central areas and high in extreme north, south, and west areas. Outside of Nashua, per capita income levels are the lowest in Hudson Town Center. Otherwise, per capita income levels are relatively consistent across the region, with the exception of Amherst, Hollis, and southwest Merrimack, where income levels are higher.

Share of Low to Moderate Income Households



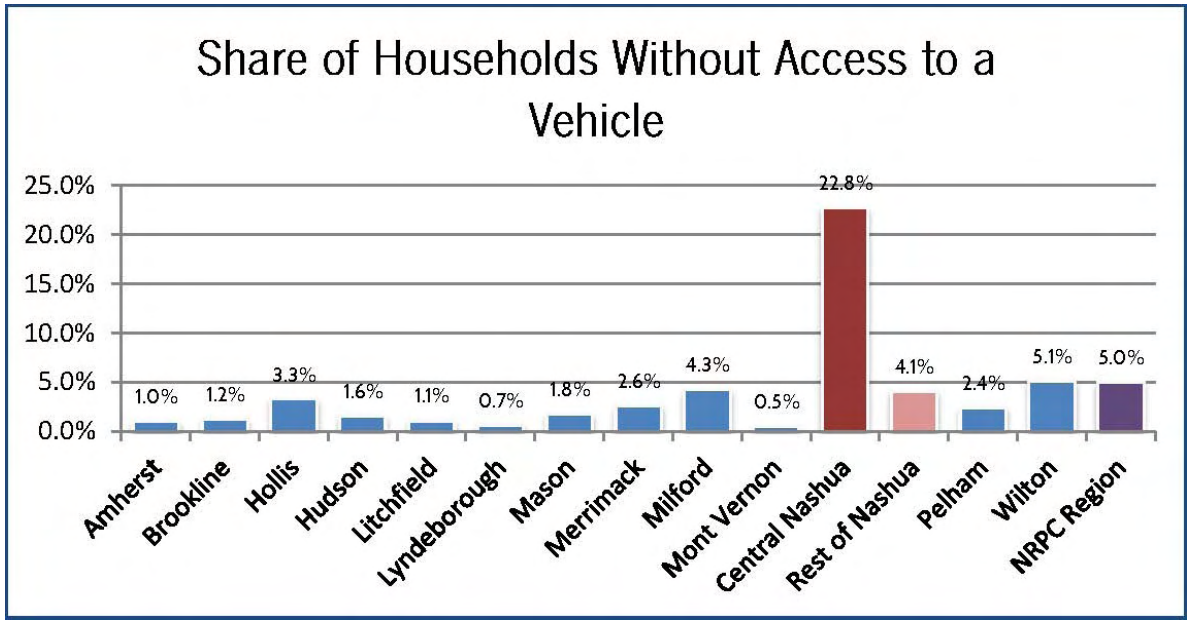
Data Source: U.S. American Community Survey 2008-2012

Federal poverty guidelines provide a picture of residents who live under great financial strain and are severely limited in the marketplace. However it does not include residents and families who make slightly more, but also live under considerable financial strains. These challenges can be amplified because many such residents do not qualify for federal, state or local financial assistance programs.

Federal poverty levels are defined based on yearly earnings and vary based on household size; they currently range from $11,880 for an individual to $40,890 for families of eight (Burwell, 2016). These levels are very low in relation to the Nashua Region, where costs of living tend to be higher.

The above map includes the share of households by community who earn 60 percent or less of the median household income rate for the region, which is $79,225 (2012). While many of these families earn more than federal poverty guidelines, they may benefit from public transit availability because their incomes trend significantly lower than the regional median. The share of low-moderate income households are highest in Nashua and Wilton (47.9 percent), as well as Milford (46 percent). Hudson and Lyndeborough also include shares of such populations exceeding 37 percent (37.2 percent and 37.7 percent respectively).

Vehicle Availability, Transit & Commuting



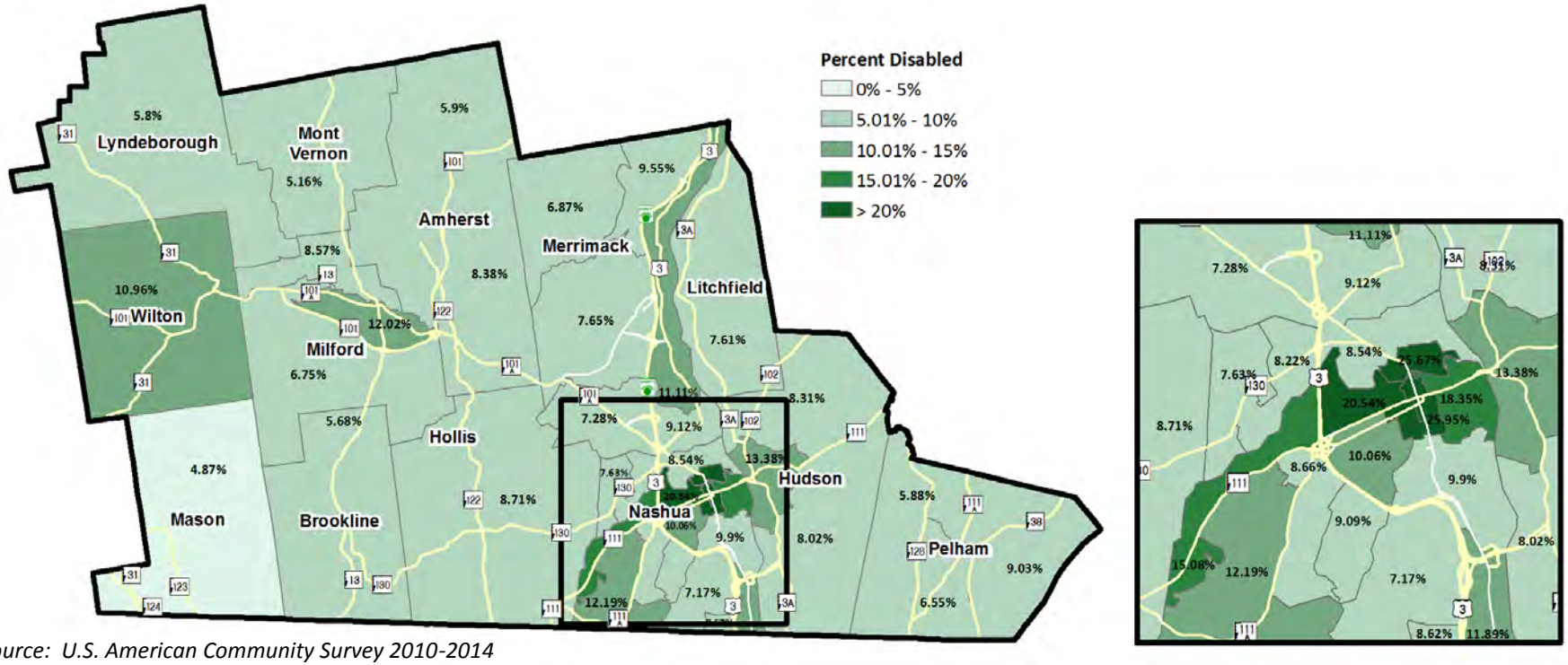
Perhaps one of the greatest determinants of public transit usage, particularly in an area like the Nashua Region where automobile use is very widespread, is a lack of access to a motor vehicle. The US Census queries households regarding the number of vehicles available. Unsurprisingly, Nashua includes the largest share of households which lack access to an automobile; a total of 8.1 percent of Nashua households report having no vehicle available (US Census, American Community Survey 2010-2014). However there are wide variations in vehicle availability across geographic areas of the city.

In three areas of Nashua (identified through Census tracts) between 5-10 percent of households reported having no vehicle available. In five areas, between 10-25 percent of households reported no vehicle availability, and in two areas, more than 25 percent of households reported no access to a vehicle. Of the five areas where more than 10 percent of residents reported no vehicle availability, four of them make up the area generally known as Central Nashua, an area which stretches from the East Hollis area to the Tree Streets and inclusive of the Main Street corridor, composing approximately 21 percent of the city population.

Outside of Central Nashua, vehicle availability is fairly high with only 4.1 percent of households in other areas of the city reporting no vehicle availability. In surrounding communities, vehicle accessibility is also quite high. In no community outside of Nashua does the rate of households with no vehicle access exceed 5.1 percent. In only Milford does the rate exceed 4 percent (4.3% of households in Milford lack access to a vehicle). And in only two other communities does the rate exceed three percent; Hollis (3.3%) and Wilton (5.1%).

A review of US Census records indicates that in only three Nashua neighborhoods did the share of residents who reported using public transit as a commuting mode exceed five percent (U.S. Census, American Community Survey 2010-2014). These areas include the Main Street area of Downtown Nashua, the Railroad Square and part of the Crown Hill neighborhood, and the Tree Streets neighborhood (Census tract 105, 107, and 108). These areas roughly correspond to areas of the city where public transit service is most widely available and where socioeconomic indicators suggest higher concentrations of minorities, low income households, and low vehicle availability. Across the City of Nashua as a whole, only 1.8 percent of residents reported using public transit as their primary commuting travel mode (US Census ACS, 2010-2014). The US Census does not query residents regarding travel mode usage apart from for commuting purposes.

Disabled Population



Data Source: U.S. American Community Survey 2010-2014

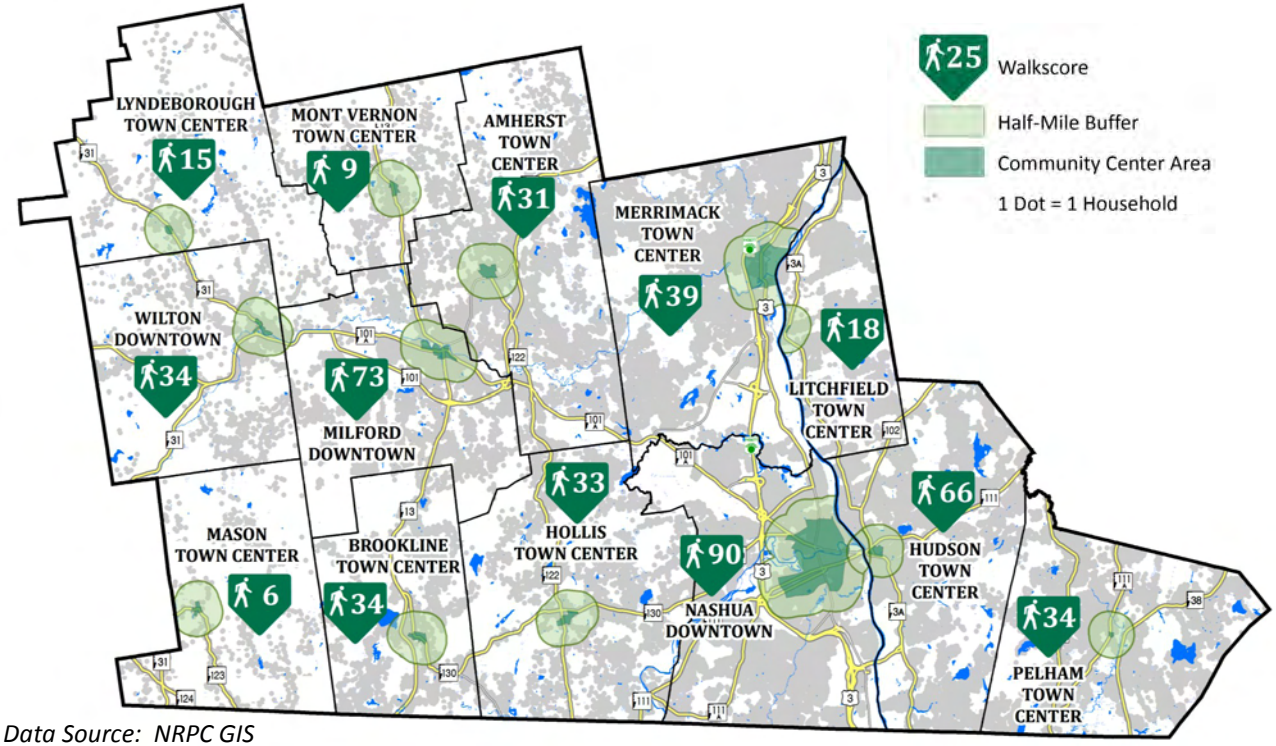
Approximately 10 percent of Nashua Region residents live with some form of disability. Public transit access can provide a lifeline for those who live with disabilities than can significantly limit mobility, including visual impairments, physical handicaps, or mental health conditions.

Within the Nashua Region, the highest concentrations of disabled residents live in areas of Nashua already served by public transit. However, smaller concentrations of disabled residents can be found in Hudson Town Center, the east side and downtown areas of Milford, the Daniel Webster Highway corridor of Merrimack and the Town of Wilton.

Disabled populations appear to cluster in areas with higher shares of multi-family and institutional housing and with close access to commercial uses and public services.

Because every municipality in the region includes a downtown and town center of some kind, and because downtowns and town centers include unique characteristics that might incentivize and intensify public transit use - including walkability, a concentration of residential, commercial and

Town Centers and Downtowns



Data Source: NRPC GIS

institutional uses, and roles as community gathering places - they deserve special analysis in the context of this plan.

While every community includes some recognizable town center, only Nashua, Milford, and Wilton are characterized as having downtowns, where mixed uses are concentrated at a very fine scale with high levels of walkability. It is important to note that Downtown Wilton includes very limited commercial uses.

Walk Score is an internet-based platform that serves as a measure of destination accessibility. It primarily measures whether a series of destinations (including schools, restaurants, shops, and other services) are located within walking distance of a particular address. It also measures walkability through measures like block size and intersection frequency. However, importantly it does not account for the availability or quality of pedestrian infrastructure like sidewalks and roadway shoulders.

The adjacent map includes Walk Scores as computed for the town hall of each community (there are two exceptions; in Litchfield the Old Town Hall address was utilized, while in Lyndeborough, Citizens Hall was used). Unsurprisingly, that analysis found that Nashua boasted the highest downtown Walk Score (90), followed by Milford at 73. Hudson was the only other community in the region to boast a score over 50, at 66.

Downtown Milford boasts the largest downtown in the region outside of Nashua. The downtown area is largely walkable with residences clustered nearby, including several large senior living facilities, as well as small-scale retail uses and several restaurants. Approximately 45 percent of Milford residents live within ½ mile of the downtown area. Larger scale retail uses, several senior and multi-family developments, and the St. Joseph Urgent Care Medical Center are located on the east side of town.

Hudson Town Center includes a fairly high concentration of residences as well as commercial and institutional uses, including two elementary schools. Sidewalks are generally available on all major roads, but commercial uses are not as clustered and walkable in Hudson. Major retail areas are located just outside the town center area,

Milford, Hudson, Merrimack, Wilton

Downtown Milford

Total Households: 2,834

Approximate Population: 6,858

Hudson Town Center

Total Households: 1,821

Approximate Population: 4,735

Merrimack Village

Total Households: 1,735

Approximate Population: 4,459

Downtown Wilton

Total Households: 630

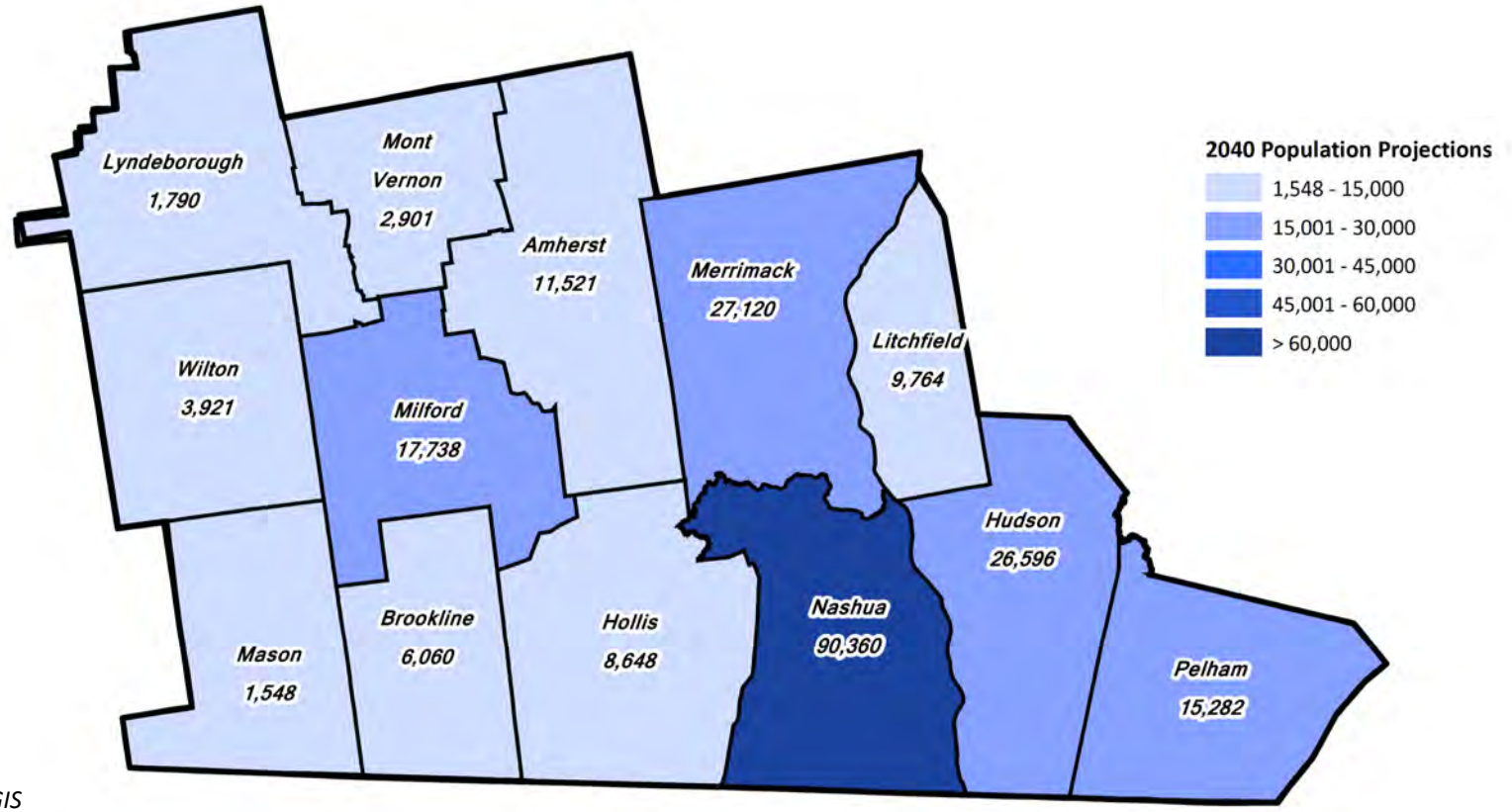
Approximate Population: 1,455

though sidewalks link to the Hannaford's Shopping Center on Derry Road and some retail uses located to the south on Route 3A. The Anne Marie House, which serves families during temporary periods of homelessness, is located along Route 3A approximately ½ mile from the town center.

Merrimack Village includes a clustering of institutional uses as well as some residences and commercial uses. Although Baboosic Lake Road is largely devoid of retail activity, several retail stores and restaurants are located within short distance on Daniel Webster Highway. Like Hudson, residential and commercial uses are not oriented at as fine a scale as communities with traditional downtowns, but town leaders have supported efforts to make the center a larger draw and center of activity. Several parks have been expanded or improved in the area in recent years. Multi-family uses in Merrimack are largely clustered along Daniel Webster Highway to the north of the village area.

With approximately 40 percent of Wilton residents located within ½ mile of the downtown area, Wilton includes the second highest share of downtown residents of any community in the region. Downtown Wilton is largely walkable with a clustering of single and multi-family residences. Institutional uses are also concentrated in the area, with Wilton's public school facilities located within or immediately adjacent to the downtown. However, two issues may stymie public ridership in the community; Wilton remains one of the region's smallest communities and commercial uses, particularly large scale, are limited.

Forecasted Population

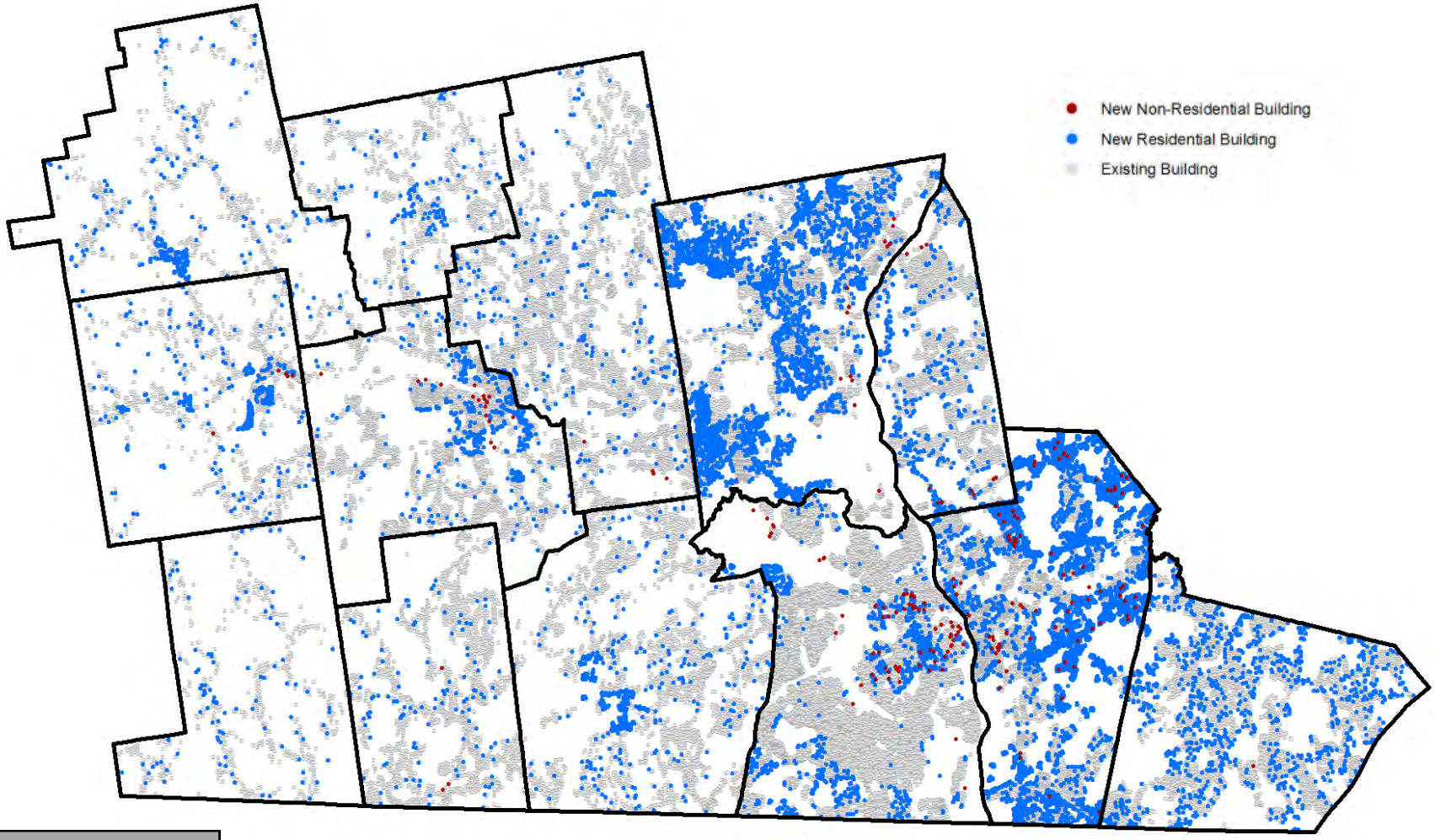


Data Source: NRPC GIS

In analyzing possible future transit demand in the region, it is important to account for forecast changes in population. In 2014, as part of its regional plan effort, NRPC projected future populations of municipalities in the region out to 2040 based on interviews with municipal staff, review of planned developments, and availability of undeveloped land as well as the likelihood that such land would be developed. The Commission utilized Communitive modeling software to help illustrate the impacts of the forecast population on the landscape (shown on the next page).

The forecast assumed relatively modest rates of growth due to several factors already observed in the region, including lower birth rates, a swelling senior population, and significantly reduced in-migration into the region from decades of high growth (including the 1970s and 80s). The above map includes forecasted 2040 populations for municipalities in the region. Growth was forecast to be highest in Pelham, Brookline, Litchfield, Milford and Mont Vernon.

Forecasted Population and Commercial Growth



Data Source: NRPC GIS

Year 2040

17,500 Total Additional People

3,045 Additional School Children

Transit Demand & Need Scoring

In 2015, the Nashua Regional Planning Commission asked Nashua Transit System staff members to indicate the extent to which a series of demographic and environmental factors impacted public transit ridership in the region based on their own observations and experiences. The following is the results of that scoring exercise:

Most Important

- Senior population
- Persons below poverty level
- Low to moderate income households
- Number of jobs
- Number of retail, food service jobs
- Population density
- Lack of vehicle availability
- Disabled population
- Number of major destinations (hospitals, school campuses, shopping areas and centers)

Important

- Minority population
- Teenage population
- Level of walkability

Somewhat Important

- Single parent with kids under 18
- Share of population in workforce
- Young adult population
- High rental cost burden (over 50%)
- Transportation costs as share of income

Least Important

- Degree to which land uses are mixed
- Share of environmentally conscious households

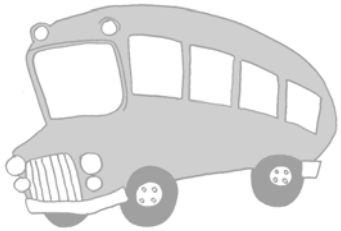
Conclusion

Transit dependent populations appear to be largely clustered in Downtown Nashua, with smaller concentrations of need in South Nashua and the West Hollis Street areas. Transit access in these areas is generally quite extensive. The City of Nashua is currently well served by public transit and may benefit from additional service hours on Saturday mornings and Sunday service in the future.

Outside of the City of Nashua public transportation options are less readily available. NTS provides limited para-transit services in the Towns of Hudson and Merrimack., and Souhegan Valley Transportation Collaborative, provide non-emergency medical and shopping trips to residents of Amherst, Brookline, Hollis, Milford, Mont Vernon, and Wilton. These services are very effective in the region, however areas of these communities could benefit from fixed route service.

The D.W. corridor throughout Merrimack, the Route 3A corridor in Hudson, and the Route 101 A corridor west through Amherst, and Milford as well as Wilton center all have high indicators for transit need. Each of these areas rank high in population, poverty, disabled persons and housing unit density. They are also key destinations due to the concentration of employment, retail, and recreational sites.

These characteristics as well as demographic and environmental factors measured as having a most important or important relationship to public transit ridership will receive special attention in the Future Transit Routes and Services chapter of this plan.



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NTS Goals

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NTS Goals

Nashua Transit System Mission Statement

To provide a level of public transportation that allows for a convenient, affordable, reliable and environmental friendly method of transportation servicing the needs of citizens through a dedicated, professional, and customer focused workforce.

NTS has identified the following outcomes to be maintained, or established and maintained, over the next ten-year planning horizon:

Priority Outcomes

- **Affordability** – Maintain cost-effective and affordable fares.
- **Passenger Amenities** – Operate clean and well maintained buses and facilities, while developing additional amenities such as bus shelters, lighting and public art. Passenger's comfort as well as current technological amenities should be taken into account when procuring new vehicles.
- **Safety and Security**– Provide continuous mandatory and optional staff training to ensure passenger and facility safety and security through driver training,
- **Americans with Disabilities Act Compliance** As fleet replacements occur and additional vehicles are purchased ensure that all are equipped with voice annunciation systems and interior LED signage for route and service information.
- **Intermodal Access** – Assist commuters with improved access to both local and distant employment destinations through the development of an inter-modal transportation network
- **Transit Center and Transit Hubs** – Improve and expand the Transit Center. As transit expands consider the viability of locating transit hubs throughout the region..
- **Service Expansion**

  City of Nashua - Extend service hours on existing routes to improve convenience, and facilitate access to employment, education and retail sites. Evaluate the feasibility of extending earlier service on Saturday mornings. Also evaluate the feasibility of establishing Sunday fixed route and de-mand response service.

  NRPC Region – Increase regional mobility by improving transit access in the region with connections to other communities such as the Towns of Hudson, Merrimack, Milford and Wilton as well as destinations like the Merrimack Premium Outlets and Walmart in Amherst or Hudson.

  Beyond the NRPC Region - Improve regional mobility by providing transit connections to the Boston-Manchester Regional Airport, Manchester Transit Authority, and park and ride facilities to access destinations in Massachusetts via commuter rail or commuter bus service. Seasonal services to Hampton Beach and Canobie Lake Park should be considered and evaluated.

NTS Goals

NTS has identified the following highly important strategies that can be used to achieve the outcomes described on the previous page:

Pivotal strategies

- **Marketing and Outreach** - Develop a marketing plan and secure on-going funding for continued implementation of the plan.
- **Public – Private Partnerships**- Conduct outreach with local businesses and employers to educate them on the potential benefits of public transportation to their business. Build upon this understanding to begin developing public – private partnerships and garner support to obtain local match for transit service expansions.
- **Regional Coordination** – Continue working with the Nashua Regional Planning Commission, community planners, and economic development groups to ensure that future large-scale development provides transit amenities or right-of-way set aside for future transit service.
- **Education –** Provide continuous education to existing and potential riders using marketing and public outreach through rider information services regarding benefits of using public transportation.
- **Technology -** Use current and available technology to make transit service as convenient, safe and cost effective as possible including, As technology continues to advance and reliance upon cellular phone technology increases the transit system should adjust accordingly. For example, the Transit Center and future vehicles should be equipped with Wi-Fi capability.

Implementation

The following tables describe implementation projects that are grouped according to technology, safety, finance, marketing and outreach, infrastructure, and service expansion. Timeframes are established in terms of feasibility and funding. Projects that are underway currently are listed as ongoing; short-term projects can be managed within one to four years, and mid-term projects are between five and nine years. Long-term projects have a time horizon on the order of a decade or more.

Online maps and the NTS online Trip Planner are examples of technology used to enhance transit rider experience. Source: nashuanh.gov/680/Nashua-Transit-System

Implementation

Timeframes are established in terms of feasibility and funding. A description for each timeframe is as follows:

Ongoing = current project Mid-term = 5 to 9 years

Short-term = 1 to 4 years Long-term = 10+ years

Project Name	Description	Timeframe
Technology		
Current Technology	Ensure that newly purchased vehicles are equipped with the most up to date software, amenities and components.	Short-Term
New Payment Methods	Evaluate the feasibility of accepting electronic fare media/payment via cellular phones.	Short-Term
Cellular Compatibility	Implement technology to allow passengers to easily access bus schedules and real-time bus tracking and electronic payment via cellular phones	Mid-Term
Wi-Fi	Install Wi-Fi capability at the Transit Center.	Short-Term
Wi-Fi	Ensure that newly purchased vehicles are equipped with Wi-Fi capability.	Long-Term

Project Name	Description	Timeframe
Safety		
Training	Provide continuous mandatory and optional staff training to ensure passenger and facility safety and security through driver training	Ongoing
Emergency Training	Emergency preparedness and response trainings, and conflict resolution	Short-Term
Industry Leader	Be an industry leader in overall safety.	Ongoing

Implementation

Project Name	Description	Timeframe
Finance		
Expenses and Prices	Continually evaluate the cost effectiveness and affordability of fares.	Ongoing
Funding	Secure dedicated funding and ongoing public support to maintain existing service.	Ongoing
Funding	Secure dedicated funding and ongoing public support for expansion of future services.	Long-Term
Grant Opportunities	Coordinate with NRPC, NH DOT and FTA to continually monitor e-news and list serves for grant opportunities related to operating, capital, facility and education.	Ongoing
Public-Private Partnership	Build upon the outreach and benefits of transit in the private sector to begin developing public – private partnerships and garner support to obtain local match for transit service expansions.	Short/Mid-Term

IMPLEMENTATION

Project Name	Description	Timeframe
Marketing and Outreach		
Outreach to Businesses	Conduct outreach to key property owners, businesses and employers to educate them on the potential benefits of having public transportation serve their business.	Short/Mid-Term
Marketing Plan	Utilize a consulting firm to develop a marketing plan and RFP catered to NTS as well as an estimate of funding needed.	Short/Mid-Term
Marketing Funding	Secure on-going funding for continued implementation of the marketing plan. This budget should also fund a dedicated marketing staff person or consultant as well as a printing and design budget.	Mid-Term
Marketing Materials	Review all of the existing NTS marketing materials and prioritize updates and development of additional materials.	Mid-Term
Creative Ideas	Identify some creative options to generate public support and awareness of NTS such as Name that Trolley and Adopt a Stop.	Short-Term
Bus Facility Handout	Develop a handout with suggested dimensions and amenities to accommodate future transit vehicles and services in future developments and redevelopment.	Short-Term
Public Outreach and Education	• Provide continuous education to existing and potential riders using marketing and public outreach through rider information services regarding benefits of using public transportation. • Utilize current social media avenues to promote public transit in the City and the greater region. • Develop and distribute education and marketing materials to a younger audience, especially to elementary and junior high school students and their parents.	Short/Mid-Term

IMPLEMENTATION

Project Name	Description	Timeframe
Infrastructure		
ADA	As fleet and facility upgrades occur and additional vehicles are purchased, ensure that all are measured and equipped to comply with the Americans with Disabilities Act with features such as voice annunciation systems and interior LED signage for route and service information.	Short-Term
Vehicle Fleet Replacement	Continue working towards a fleet replacement for the buses and vans. Develop a long term plan for continued fleet upgrades and replacement.	Short/Mid-Term
Vehicle Fleet Expansion	Expand vehicle fleet as needed to provide additional service.	Mid/Long-Term
Transit Center	• Improve and expand the Transit Center to accommodate an expanded vehicle fleet. • Resurface the asphalt area in the vicinity of the Transit Center and address the overhang of the Transit Center roof and the platform, as it is not adequate to safely prevent snow and ice buildup on the platform and surrounding sidewalks. • Evaluate the feasibility of creating a heated platform to eliminate snow removal issues. • Improve the pedestrian access and visibility in the transit center.	Short/Mid-Term
Transit Hubs	As transit expands consider the viability of locating transit hubs throughout the region, specifically at Westside Plaza in Nashua, as well as locations in Hudson, Merrimack and Milford.	Mid/Long-Term
Passenger Amenities	Developing additional amenities such as bus shelters, lighting and public art. Passenger's comfort as well as current technological amenities should be taken into account when procuring new vehicles.	Short/Mid-Term
Bus Shelter Plan	Develop a plan and a prioritized list of key locations for additional bus shelters within the City of Nashua. This plan would also address issues such as funding, installation, maintenance, snow removal, and marketing on the shelters.	Short-Term

IMPLEMENTATION

Project Name	Description	Timeframe
Service Expansion		
Earlier Saturday Service	Evaluate the feasibility of extending earlier service on Saturday mornings (starting at 6:00am to be consistent with weekday service times).	Short/Mid-Term
Sunday Service	Evaluate the feasibility of establishing Sunday fixed route and demand response service.	Long-Term
Expansion Within the Region - Pilot	Create connection from Westside Plaza in Nashua to Walmart in Amherst / Alternating with the Merrimack Outlets. **ONE DAY PER WEEK.**	Short Term
Expansion Within the Region - Phase I	Create connection from Westside Plaza in Nashua to Walmart in Amherst / Alternating with the Merrimack Outlets. 5 days per week.	Mid/Long-Term
Expansion Within the Region - Phase II & III	Create connections to other communities within the NRPC region such as the Town of Hudson, Merrimack, Milford, and Wilton	Mid/Long-Term
Expansion Beyond the Region	Provide transit connections to the Boston-Manchester Regional Airport, Manchester Transit Authority, Lowell Regional Transit Authority, Pheasant Lane Mall and park and ride facilities to access destinations in Massachusetts via commuter rail or commuter bus service, such as the Boston Express.	Mid/Long-Term
Seasonal Service - Hampton Beach	Begin a trial of seasonal service to Hampton Beach.	Short-Term
Seasonal Service - Canobie Lake Park	Evaluate the feasibility of a public-private partnership to operate a limited number of seasonal trips to Canobie Lake Park .	Short-Term
Intermodal Transportation	To assist commuters with improved access to both local and distant employment destinations through the development of an intermodal transportation network including, transportation demand management measures, access to park and ride lots, future commuter rail stops and express routes specifically designed for compatibility with peak commuter schedules.	Mid/Long-Term

Prioritization of Service Expansion

NTS has identified service expansion as a priority outcome over the next ten-year planning horizon. Four main areas of service expansion are envisioned; within the City of Nashua, within the NRPC region, and beyond the region, and seasonal service.

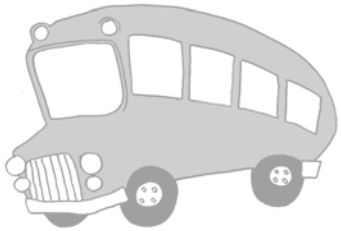
Service expansion within the City is envisioned as extend service hours on existing routes to improve convenience, and facilitate access to employment, education and retail sites. It was determined during the development of this plan that extending earlier service on Saturday mornings, establishing Sunday fixed route and demand response service, and access to a future park and ride facility on the east side of the City would meet the goal of service expansion within the City. NTS will evaluate the feasibility of extended Saturday service hours during the ten-year planning horizon of this plan. The feasibility of introducing Sunday hours will be evaluated beyond the ten-year planning horizon.

Service expansion projects outside of the City, beyond the region and to seasonal locations where evaluated and ranked by NTS staff using a standard Impact/Feasibility matrix. This type of matrix places the highest value on projects with high mission impact and high feasibility. Projects with low mission impact and low feasibility receive a low ranking.

- Impact of specific project was influenced by public input received during the development of this plan, NTS staff expertise, and the priorities identified earlier in this plan.
- Feasibility of a specific project was influenced by the cost of service and predicted ridership (when available).

Projects were ranked as follows:

- High:
  - ◊ Pilot– Expansion Within Region
  - ◊ Hampton Beach Seasonal Bus
- Medium:
  - ◊ Expansion Within Region Phase I
  - ◊ Expansion Within Region Phase II
  - ◊ Canobie Lake Park Seasonal
  - ◊ Earlier Saturday Service
- Low:
  - ◊ Expansion Within Region Phase III
  - ◊ Expansion Beyond Region (Airport & MTA)
  - ◊ Establish Sunday Service



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Expanded Service: A Closer Look

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Expanded Service: A Closer Look

Currently, approximately 58 percent of residents in the Nashua Region do not enjoy access to fixed-route transit service because transit service does not extend beyond the Nashua city boundaries. The three most promising candidates for extended transit service in the region include the towns of Hudson, Merrimack and Milford, as they are the largest outlying population and employment centers in the region.

Residents noted concern that the region was too automobile-dominant, that transit coverage was not offered in municipalities outside of Nashua, that pedestrian and bicycle facilities were inadequate and poorly connected, and that transit connections to the Boston area and surrounding cities were not well developed. Many residents expressed concern that the region's lack of transportation options made it less attractive to prospective residents, particularly seniors unable to drive and younger residents who may not be able to afford or prefer to forgo the use of a car.

Overall Goals

The following are NTS strategic goals related to future transit service in the region:

Future Service Goals

- Extend service hours on existing routes
- Increase regional mobility by improving transit access in the region
- Improve regional mobility by providing transit connections to other areas in the NRPC region as well as areas outside of the region.

Intermodal Network Goals

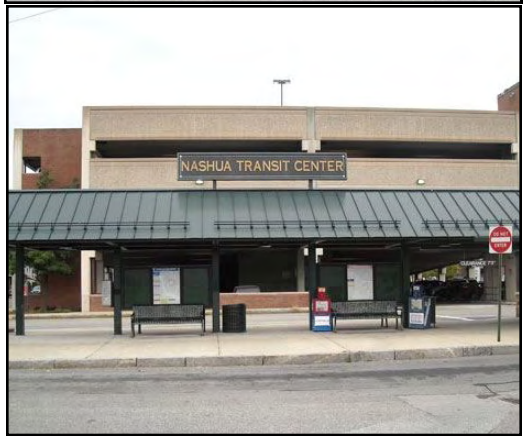
- Assist commuters with improved access to both local and distant employment destinations through the development of an intermodal transportation network

Transit Center & Transit Hubs

- Improve and potentially expand the Transit Center
- As transit expands consider the viability of locating transit hubs throughout the region.

Regional Coordination

- Continue working with the Nashua Regional Planning Commission, community planners, and economic development groups to ensure that future large-scale development provides transit amenities or right-of-way set aside for future transit service.
- Coordinate service with MTA, CART and LRTA.
- Future expansion of fixed route transit outside of Nashua requires local support to identify sources of matching funds to support operations and capital purchases. Currently Nashua Transit System operates as a City of Nashua Department under Community Development.
- Coordinate with other jurisdictions when locating and maintaining transit stops and shelters on transit routes that extend outside the City. A Memorandum of Understanding (MOU) between NTS and other jurisdictions in the service area will help streamline the process.



Introduction

Consideration of a regional operator similar to the COAST in Dover, New Hampshire may be necessary to implement regional service without overly burdening the City of Nashua.

NRPC's Transit Plan for the Nashua Region included a series of transit recommendations for the region, including the provision of fixed route service from Nashua to the towns of Hudson, Merrimack, and Milford. The plan noted that outside of Nashua, Hudson had the highest overall level of transit need.

Projects

While there are no specific transit extensions included in the Metropolitan Transportation Plan, a number of viable expansion options exist based on the recommendations included in the region's Transit Plan. Those options are discussed briefly below:

Hudson

The simplest and most feasible extension of fixed-route transit service to the Town of Hudson would involve the extension of the Nashua Transit System's Routes 6 and 6A servicing South Nashua. The route would access the Sagamore Bridge via Daniel Webster Highway and provide service to points along Route 3A in Hudson, including major destinations like the Hudson Wal-Mart, the Hudson Technology Park, and the Market Basket grocery store. The route would also service schools and residential areas, including Nottingham West Elementary School, the Presentation of Mary Catholic School and Convent, the Fox Hollow residential development and the densely populated neighborhoods surrounding Hudson's town center, before turning left at Route 111, crossing the Taylor Falls Bridge and re-entering Nashua. The route would re-enter Nashua in much closer proximity to its ultimate destination, the Nashua Transit Center.

South Merrimack

Merrimack's largest employers are situated in the southern areas of the municipality zoned for industrial uses. The Anheuser-Busch Brewery, BAE Systems, Fidelity Investments, Thomas More College, Brookstone, and the Merrimack Premium Outlets are all situated along Industrial Way or Daniel Webster Highway in the far southern quadrant of the town. According to the NH Economic and Labor Market Bureau, these six enterprises alone employ more than 8,400 people. Additionally, the Merrimack Premium Outlets are a major regional destination for retail shopping. Industrial Way in Merrimack is located less than two miles from the Nashua city line in an area already serviced by the Nashua Transit System's Route 1 service (serving Manchester and Concord Streets). Extending service to Merrimack's major employment centers via an extension of the NTS Route

1 service would represent the most efficient and feasible option to extend fixed-route transit service to the Town of Merrimack.

Milford/Amherst

An extension of fixed-route transit service to the Towns of Milford, Amherst and South Merrimack via service along Route 101A would dramatically improve transit access to the region's most heavily traveled east-west route and one of its busiest commercial corridors. The route would serve major destinations including the Amherst Wal-Mart, P.C. Connection, the St. Joseph Medical Center in Milford and a number of additional retail and residential centers along the corridor. Additionally, the route would provide access to Downtown Milford, a mixed-use area representing the largest concentration of residences outside of Nashua. Approximately, 2,834 households, or 48 percent of all households in Milford, are located within one half-mile of its downtown.

The Milford Oval is located approximately 6.5 miles from the Nashua city line. The area near the city line is already serviced by the Nashua Transit System (Northwest Boulevard via NTS Routes 2 and 2A). Extended service to Downtown Milford would represent the longest extension of existing service of all the options outlined in this section, however it could potentially offer the most long-term promise.

Exit 36 Study Recommendations

Nashua Transit System should reconsider implementing the proposed Daniel Webster Highway Circulator Service. As originally proposed, the circulator would feature bus service along the Daniel Webster Highway from Adventure Avenue to the Pheasant Lane Mall. The route, intended to service the many retail outlets along the corridor, would run on Saturdays and during other periods when retail traffic is high, particularly during the holiday shopping season. The significant conglomeration of retail activity in the area makes it attractive for retail trip chaining. The addition of an Exit 36S off ramp would result in reduced congestion, allow improved access to the area and greatly reduce transit headways.

Exit 36S will help facilitate additional expansions to transit service in the study area to address long standing gaps in service. For example, the Nashua Transit System and the Lowell Regional Transit Authority (LRTA) provide service skirting the state border. LRTA provides service to Ayotte's Market in Hudson, NH, while NTS service extends as far south as the Pheasant Lane Mall. The addition of an Exit 36 southbound ramp would aid in bridging service gap, by reducing headways and making extensions of those routes more feasible.

Service Expansion - Within the City of Nashua

Expanded Saturday Service

Currently Saturday service operates from approximately 9 am to 5 pm, compared with a weekday start time of approximately 6 am. Expanding Saturday service, to be consistent with the weekday service, would allow more riders to utilize the transit system to access employment sites and destinations early on Saturday mornings. This would require an additional 3 service hours for each route, complementary para-transit service, as well as expanded dispatch service.

Establishing Sunday Service

Nashua Transit System does not currently, and has not historically operated Sunday service. This can be a significant barrier to access, especially for the transit dependent population of Nashua. A cost effective option to begin this service would be to operate the 3 night time routes from 9 am to 5 pm on Sundays. This would include the South Loop, Central Loop and North Loop currently operating as the After Seven evening service (shown on page 2 of Existing Service). As ridership grows it may be viable to add additional routes and service options. As discussed in the Saturday service above, complementary para-transit would be required, dispatch service as well as maintenance staff to clean and fuel the vehicles.

Access to Crown Street Park and Ride Facility

The City of Nashua is currently working with a consultant to develop a park and ride facility at Crown Street on the east side of downtown Nashua. This new facility will be served by NTS and will require the reconfiguring of one or more routes to serve the facility. This will be a great opportunity to locate a bus shelter and possible rider amenities in a very walkable area of the City.

Extended Morning Service on Saturdays in Nashua

Additional Saturday morning service between 6 am and 9 am.

Type of Service	Annual Operating and Maintenance Cost	50%Local/50% Federal Annual Operating and Maintenance Cost - 5307	20%Local/80% Federal Annual Operating and Maintenance Cost -CMAQ
Saturday Fixed Route	$60,476	$30,238	$12,095
Saturday Para-Transit	$8,843	$4,422	$1,769
Total Operating	$69,319	$34,660	$13,864
Dispatch Center	$7,800	$3,900	$780
Total Operating and Dispatch	$77,119	$38,560	$15,424

Sunday Service in Nashua

Establish Sunday service and run the three night service routes between the hours of 9 am and 5 pm within the City of Nashua.

Type of Service	Annual Operating and Maintenance Cost	50%Local/50% Federal Annual Operating and Maintenance Cost - 5307	20%Local/80% Federal Annual Operating and Maintenance Cost -CMAQ
Sunday Fixed Route	$81,643	$40,821	$16,329
Sunday Para-Transit	$35,372	$17,686	$7,074
Total Operating	$117,015	$58,508	$23,403
Dispatch Center	$26,000	$13,000.0	$5,200.0
Maintenance	$20,800	$10,400.0	$4,160.0
Total Operating, Dispatch and Maintenance	$163,815	$81,908	$32,763

Service Expansion – Regional Ridership Analysis

Transportation in the Nashua Region is increasingly unimpeded by jurisdictional boundaries. In Nashua, the state's second largest employment center, 54 percent of city residents commute to other communities for work. The absence of fixed-route service beyond the Nashua city boundaries deprives Nashua city residents of transit access to employment and services in surrounding communities. Within the region, the communities of Hudson, Merrimack and Milford are all key employment and population centers that are currently unserved by fixed route public transit.

Beyond the city limits, more than 68 percent of residents of the Greater Nashua region commute to work in a community outside of their own (American Community Survey, 2008-2012). Non-employment travel for retail, medical, and other amenities also characterizes the travel in the region. Importantly, the expansion of fixed route service could presumably meet at least some of the transit needs in Amherst, Milford, Wilton, Merrimack, and Hudson currently served by more costly demand-response service.

Regional Ridership Prediction

Transit in Nashua is extensive. The transit-dependent population, largely clustered in downtown Nashua, is well-served by transit coverage and has convenient bus access to the City's busiest mixed-use and retail areas including Route 101A, South Nashua, and shopping at Exit 6/F.E. Everett Turnpike.

Comprehensive transit geographic coverage within the City's limits coupled with robust ridership data collection affords the opportunity to estimate future fixed route ridership at locations within the greater Nashua Region, The basic premise is that demographic and land-use variables known to be correlated with ridership can be used to infer ridership at new locations which could potentially support the concept of regional expansion of the NTS system.

Ridership Data Preparation

NTS counts bus stop boarding's using mobile tablet technology. To estimate total annual ridership by stop, the latest two year's of complete annual boarding's by stop (FY2014-15) were first averaged in order to dampen potential year-to-year variation. The averaged boarding's data was then doubled, with the broad assumption that boarding's and alighting's are roughly equal. Lastly, the result was then adjusted upwards in order to correct for slight undercount (average 11% per year) due to the tablet methodology. NTS stop ridership was then categorized into five relative levels: very light, light, moderate, busy, and very busy.

Correlation Analysis

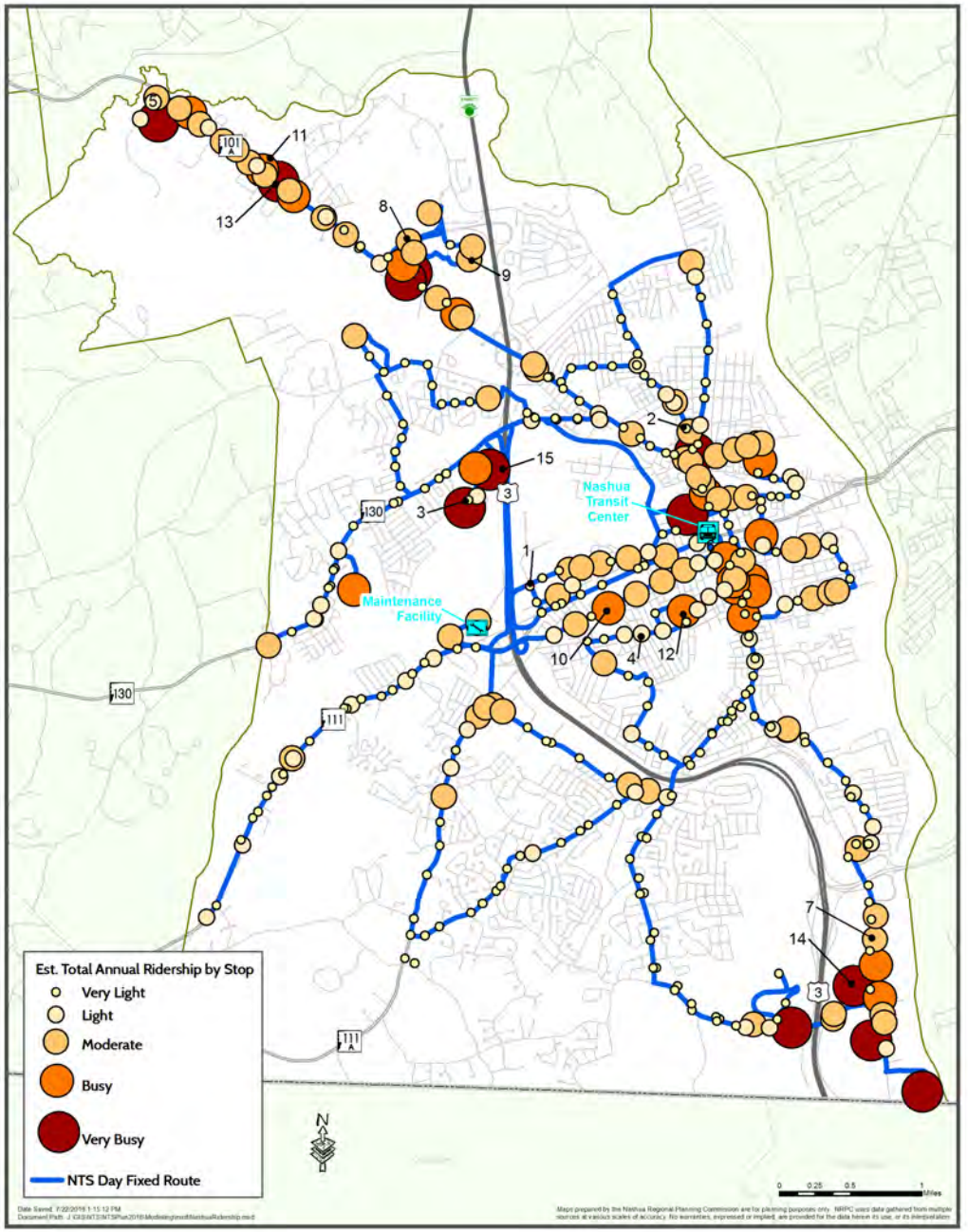
Exploratory regression analysis was used to examine the correlation between total annual ridership and demographic and land-use variables which were summarized at the neighborhood level (either by block group or wherever possible within a walkable 1/8th mile distance of the stop). Of the variable examined, seven were consistently shown to be associated with ridership:

- Overall residential density around the stop (adjusted with 10-yer projections using NRPC Scenario Planning Model
- Presence of large housing complexes including senior housing
- Prevalence of zero-vehicle households
- Proportion of lower-income households
- Existence of large attractions (supermarkets, large medical or educational institutions)
- Overall intensity of development
- Abundance of food and retail jobs

The first three variables are likely associated with where riders reside in the city (trip origins), the last four variables reflect where riders go (destinations).

Service Expansion –Regional Ridership Analysis

Example Existing Stop Locations	Annual Estimated Ridership (boardings & alightings)	Ridership Category
1. Simon - Ledge St	169	Very Light (<700)
2. Mt Pleasant School	252	
3. Chunky's	651	
4. Lake St. Fire Station	728	Light (701-1100)
5. Celina - Northwest Blvd	837	
6. Kinsley - Chestnut	1069	
7. DW Hwy - FunWorld	1662	Moderate (1101-3300)
8. Somerset Parkway - Kessler Farm	2470	
9. Dartmouth Hitchcock Clinic	3250	
10. Kinsley - Joseph Shelter	3676	Busy (3301-6600)
11. Amherst Park	4011	
12. Pine - Arel Manor	5682	
13. Nashua Community College	6727	Very Busy (>6600)*
14. Royal Ridge Center - Hallmark	11,250	
15. Nashua Mall Christmas Tree Shops	15,485	



NTS counts bus stop boardings using mobile tablet technology. Here, adjusted FY2014-15 stop data is categorized and mapped according to five relative categories. Source: NTS and NRPC GIS .

NTS stops are fairly close together, and outside of residential areas the strongest predictor of stop utilization is the presence of major retail attractions. The result is that bus stop ridership is extremely variable across the City.

Service Expansion – Regional Ridership Analysis

	Variable	Data Source	Unit of Measure	Scoring Criteria		
				0	1	2
Origins	Income/Poverty	2014 American Community Survey (ACS) Block Group Data	Median household income	>$60K	$23K-$60K	$0-23K
	Vehicle Availability	2014 American Community Survey (ACS) Block Group Data	Percentage no-vehicle households	0%-5%	5.1%-20%	>20%
	Overall Residential Density (adjusted for 2026 projections)	NRPC GIS Communitive Scenario Planning Forecast	Sum of dwelling units	<50 units	50-150 units	>150 units
	Housing Complexes (including Senior)	NRPC GIS Parcels (DU > 50 units)	Count of complexes	0 complexes	1 complex	>1 complex
Destinations	Major Attractions	NRPC GIS	Count of attractions	0 attractions	1 attraction	>1 attraction
	Retail & Food Industry Jobs	2014 Longitudinal Employer Household Dynamics (LEHD) Workplace Area Characteristics (WAC) Block-level data	Count of jobs	0-10 jobs	11-100 jobs	> 100 jobs
	High-Intensity Development	2011 National Land Cover Database	% high-Intensity development area	0%	.01 - 50%	> 50%

Exploratory regression analysis suggests that the following seven attributes are consistently correlated with NTS ridership: Income, vehicle availability, overall residential density, large housing complexes, major attractions, retail and food jobs, and high-intensity development. Using GIS, existing NTS stops as well as potential new stops at all road intersections in the NRPC region were buffered by 1/8th of a mile which roughly approximates the walkable neighborhood around the stop. Stops were then scored based upon the neighborhood's characteristics with respect to these seven attributes.

Service Expansion – Regional Ridership Analysis

Visualization

Existing and potential new stops were given individual scores for income, vehicle availability, number of dwelling units, and large residential complexes. These scores were summed to compute an overall trip origin index (range 0-8).

Similarly, existing and potential new stops were given individual scores for major attraction, retail/food jobs, and intense development. These scores were summed to compute an overall trip destination index (range 0-7). Major attraction was given twice as much weight as the other variables based upon its overall importance in prior exploratory analysis.

For both origins and destinations, inverse Distance Weighting (IDW) was used to interpolate a series of continuous "heat maps" representing relative trip origin potential, destination potential, and overall trip potential across the region.

Similarity Analysis

Existing NTS stop data was used to infer ridership at new potential stops along the proposed route. For each of 17 locations outside of the current NTS service area, a GIS "similarity search" was conducted in order to identify NTS stops that were similar in terms of their surrounding demographic and land-use characteristics.

Much like a simplified real-estate "comp" analysis, the GIS algorithm considered the origin and destination scores of these proposed stops and returned the 5 most similar NTS stops, which were averaged and then categorized into the same ridership categories.

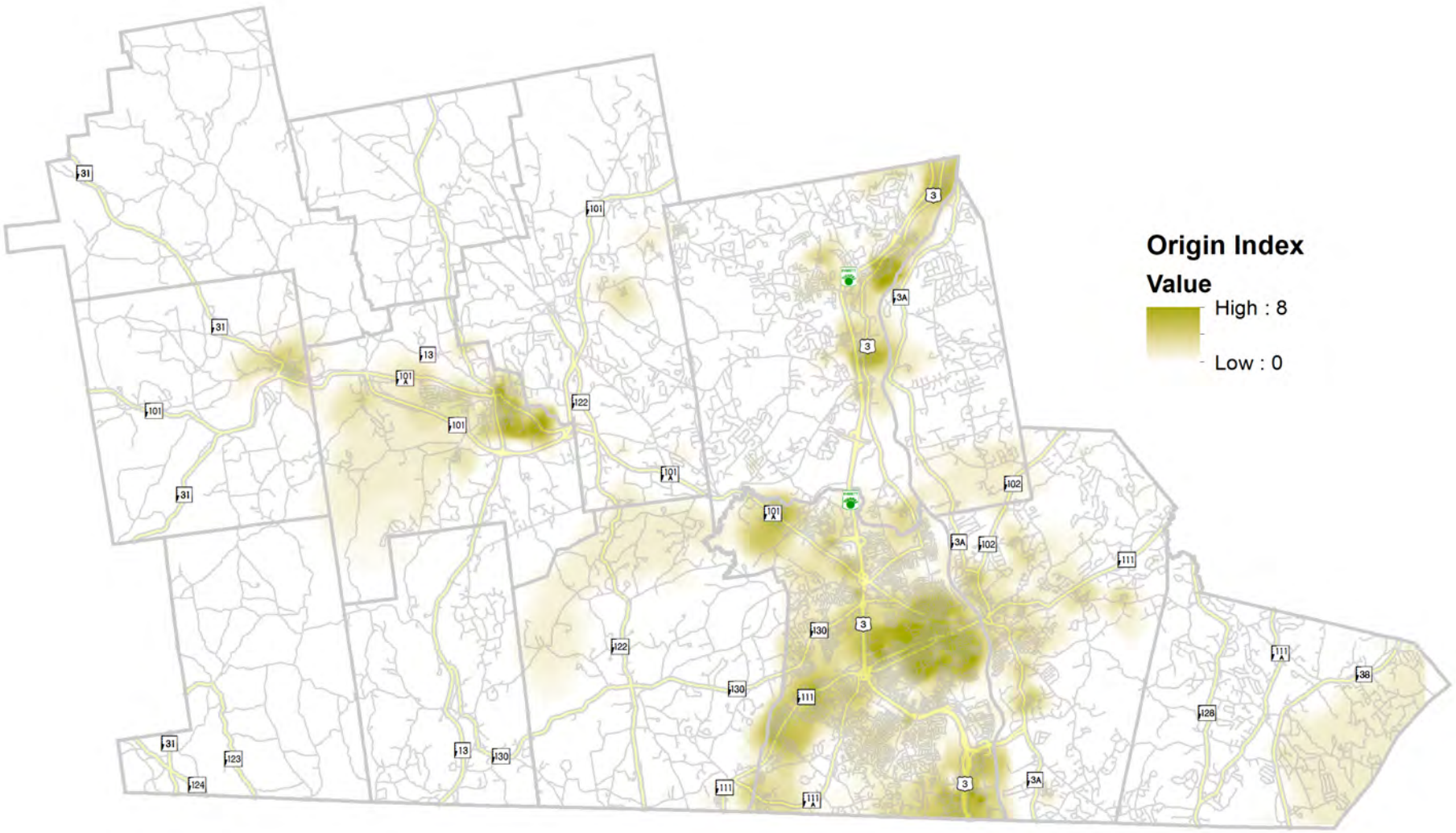
Results

The D.W. corridor throughout Merrimack, the Route 3A corridor in Hudson, and the Route 101 A corridor west through Amherst, and Milford as well as Wilton center all have generally high indicators for transit need.

The following pages discuss the characteristics of and financial estimates for potential expansion of NTS service 1) along 101A to Amherst, Milford, and potentially Wilton, implemented in three phases; 2) to the Merrimack Outlets via 101A or from Nashua; 3) from Nashua north along D.W. Highway in Merrimack; and 4) two options to serve Route 3A in Hudson.

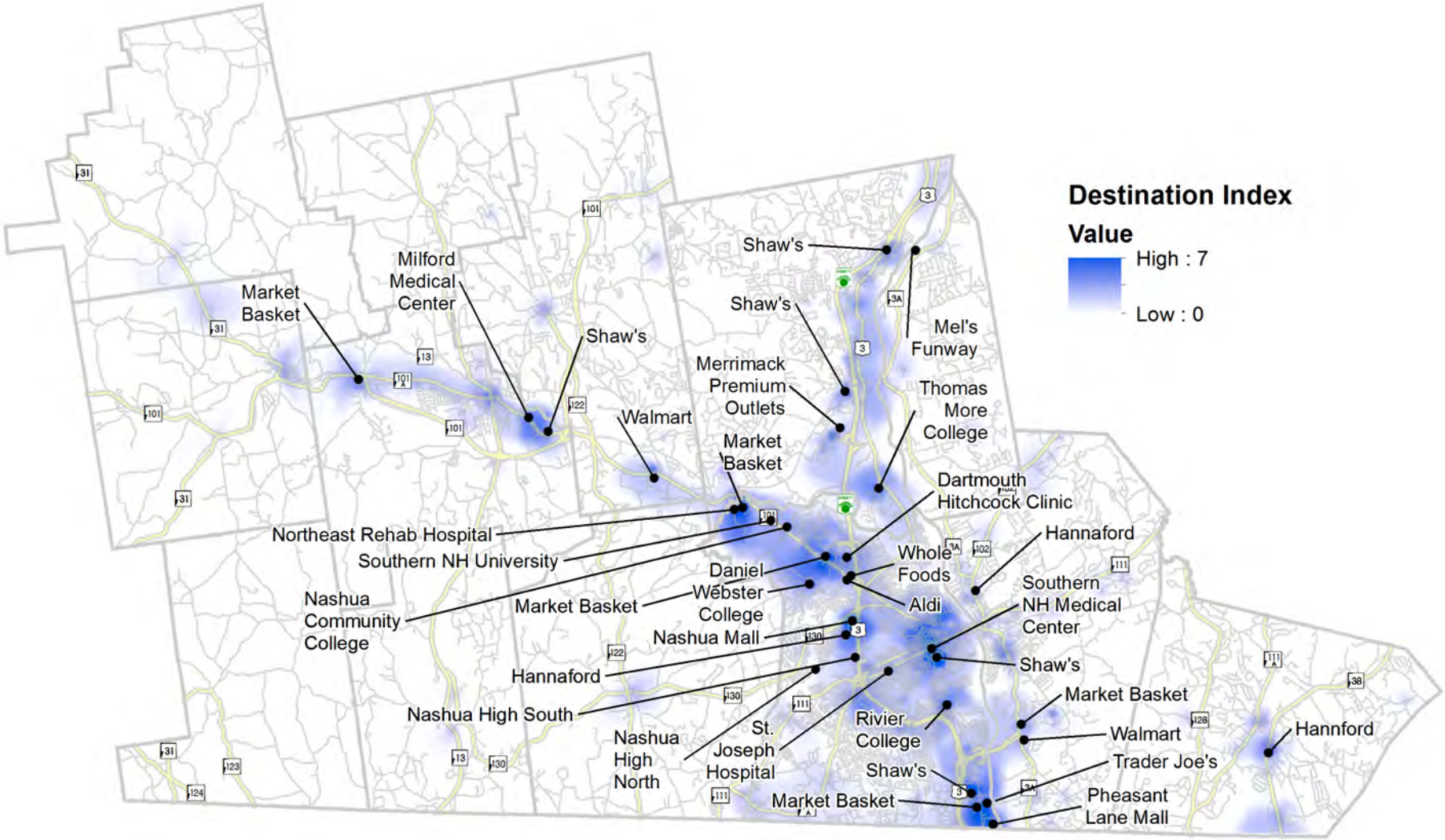
For each of all proposed new routes there is at least one stop or more that are expected to have at least moderate, busy, or very busy utilization.

Service Expansion – Regional Ridership Analysis



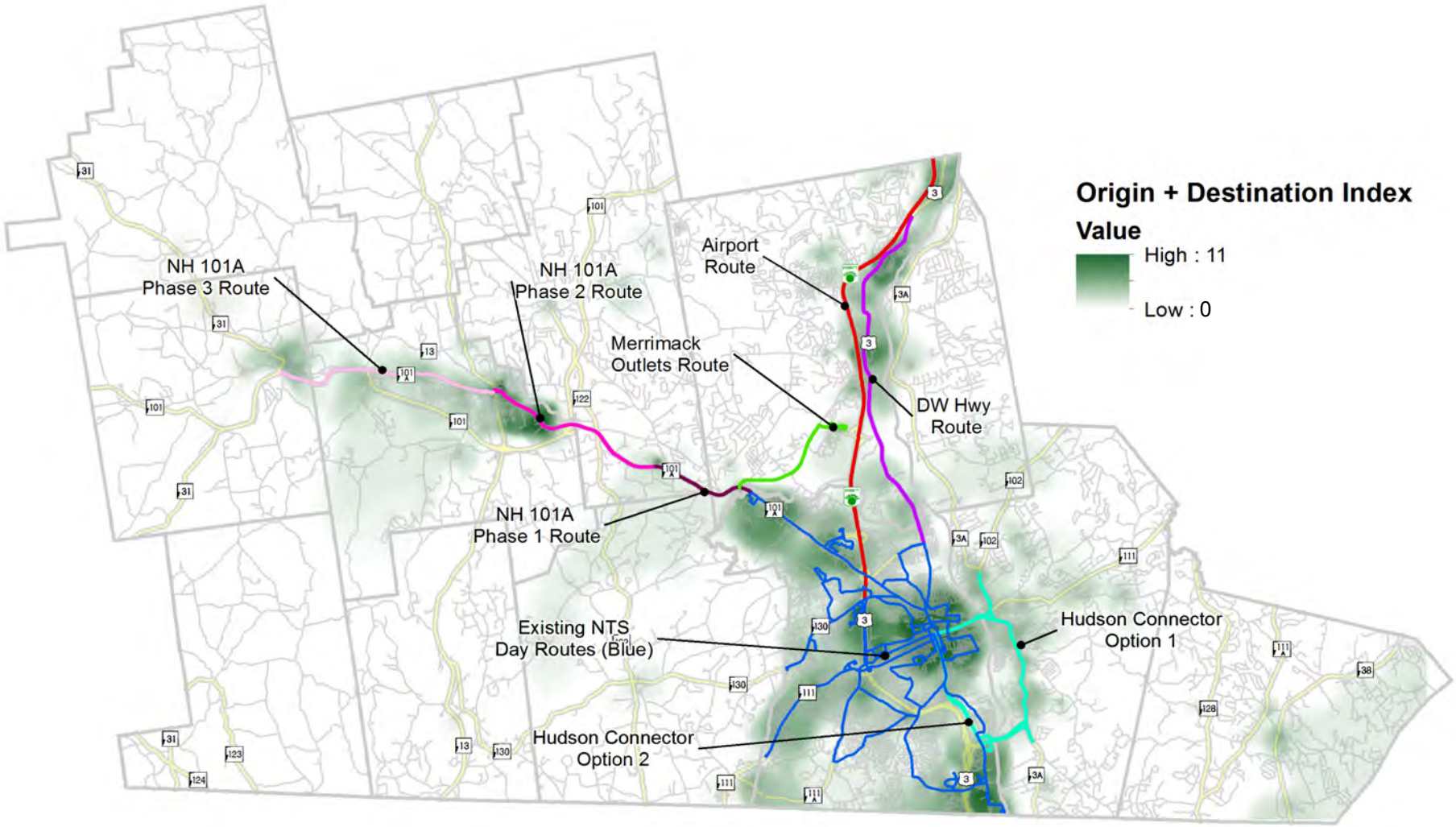
Existing and potential new stops were given individual scores for income, vehicle availability, number of dwelling units, and large residential complexes. These scores were summed to compute an overall trip origin index (range 0-8). Inverse Distance Weighting (IDW) was used to interpolate this continuous "heat map" representing relative trip origin potential across the region. Source: NRPC GIS.

Service Expansion - Regional Ridership Analysis



Existing and potential new stops were given individual scores for major attraction, retail/food jobs, and intense development. These scores were summed to compute an overall trip destination index (range 0-7). Major attraction was given twice as much weight as the other variables based upon its overall importance in prior exploratory analysis. Inverse Distance Weighting (IDW) was used to interpolate this continuous "heat map" representing relative trip destination potential across the region. Source: NRPC GIS.

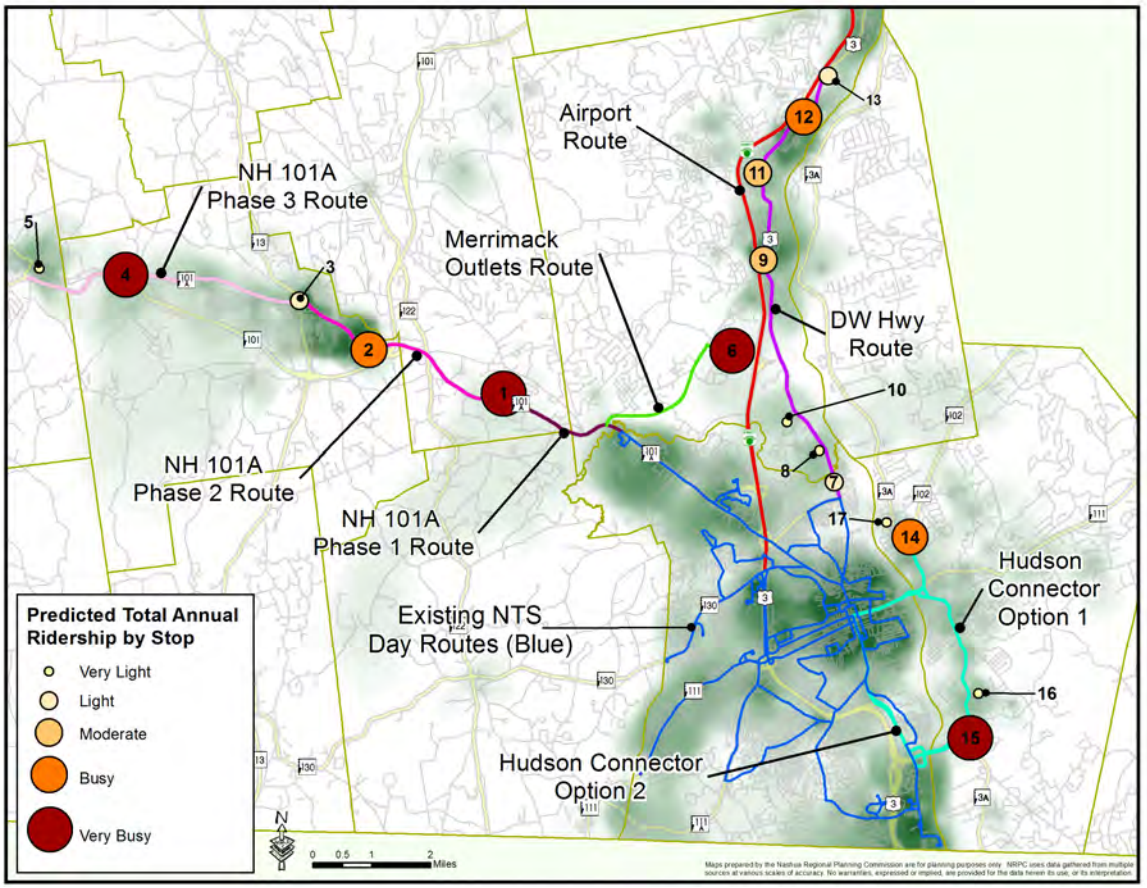
Service Expansion - Regional Ridership Analysis



Origin Index and Destination Index were summed into a composite index that ranged from 0-11. Inverse Distance Weighting (IDW) was used to interpolate this continuous "heat map" representing relative overall trip potential across the region. In other words, this map describes where there is likely to be overlap between where potential bus riders live and where they want to go. Source: NRPC GIS.

Service Expansion – Regional Ridership Analysis

Potential Route	Potential New Stop	Annual Predicted Ridership	Predicted Ridership Category
101A to Milford & Wilton	**1. Amherst Walmart**	**7229**	**Very Busy**
	2. Milford Shaw's / New Apts	**5561**	**Busy**
	3. Milford Oval	893	Light
	4. Milford Market Basket	**7154**	**Very Busy**
	5. Wilton Town Center	458	Very Light
Outlets	**6. Outlets**	**21,210**	**Very Busy**
DW Hwy	7. Lillian's Motel - Clovelly Apts - Big One Ice Cream	940	Light
	8. So. Merrimack Dunkin Donuts	441	Very Light
	9. King Kone / Residences	**2108**	**Moderate**
	10. YMCA	589	Very Light
	11. CVS - Senior Center - Merrimack Town Center	**1238**	**Moderate**
	12. New Shaw's Plaza	**5863**	**Busy**
	13. Flatley Development	723	Light
Hudson	**14. Hannaford**	**5561**	**Busy**
	15. Walmart / Sam's Club	**7154**	**Very Busy**
	16. Condos adj. to Presentation of Mary	413	Very Light
	17. Additional Condos on 3A	630	Very Light



Existing NTS stop data was used to infer ridership at new potential stops along the proposed route. For each of 17 locations outside of the current NTS service area, a GIS "similarity search" was conducted in order to identify NTS stops that were similar in terms of their surrounding demographic and land-use characteristics.

Much like a simplified real-estate "comp" analysis, the GIS algorithm considered the origin and destination scores of these proposed stops and returned the 5 most similar NTS stops, which were averaged and then categorized into the same ridership categories.

For each of the new proposed routes there is at least one stop that is predicted to support at least moderate ridership, with several at key retail locations predicted to be very busy. The Merrimack Outlets are by far the busiest stop predicted, with ridership predicted to fall between somewhere between that of the Nashua Mall and the Pheasant Lane Mall.

Service Expansion - Funding

Since the completion of the 2010 Census the Nashua Transit System has been a direct recipient of Federal Transit Administration funds. The amount of funding available to NTS is apportioned on the basis of legislative formulas. For areas with populations of 200,000 and more, the formula is based on a combination of bus revenue vehicle miles, bus passenger miles, fixed guideway revenue vehicle miles, and fixed guideway route miles as well as population and population density. Approximately $1,981,000 of FTA funds are available annually to the Nashua Urbanized Area (UZA). The Nashua Transit System in cooperation with the Nashua Metropolitan Planning Organization is required to negotiate a split of those funds with other transit systems that serve the UZA.

Distribution of FFY 2016 Funds (based on a full 12-month period)				
Designated Recipients	**5307**	**5310**	**5339**	**Total**
CART	$235,430	$138,185	$28,841	$402,456
LRTA	$112,715			$112,715
NTS	$1,300,137	$43,601	$122,055	$1,465,793
Total	$1,648,282	$181,786	$150,896	$1,980,964

The federal funds require a non-federal match. Currently the City of Nashua provides the match to support planning, operations, maintenance and capital expenses. The federal share is not to exceed 80 percent of the net project cost for capital expenditures. The federal share may be 90 percent for the cost of vehicle-related equipment attributable to compliance with the Americans with Disabilities Act and the Clean Air Act. The federal share may not exceed 50 percent of the net project cost of operating assistance.

FTA 5307 Urbanized Area Grant Funds

Expansion of transit service requires additional revenue to support operations and capital expenses. Generally fixed route transit service is supported by FTA funds and matched with non-federal dollars such as state, local or private funds. The most common source of funding for transit service in the Nashua Urbanized area is the FTA 5307 Urbanized Area Formula Grant Funds. These funds provide funding to public transit systems in Urbanized Areas for public transportation capital, planning, job access and reverse commute projects, as well as operating expenses. NTS is a direct recipient of FTA 5307 funds. NTS applies approximately 50% of these funds to operate fixed route service in the City, approximately 42% is applied to capital, and approximately 8% is used for planning expenses.

For the purposes of operating, the FTA 5307 funds require a 50% non-federal match. These funds usually come from the local community in which the service is provided. Currently the City of Nashua provides the non-federal share to support existing fixed route service within the City limits.

CMAQ

Effective transit service will result in reduced traffic congestion and a reduction in Vehicle Miles Travelled (VMT) yielding potential air quality benefits from reduced tail pipe emissions in the region. Recognizing this positive benefit Congress passed the Intermodal Surface Transportation Efficiency Act-the ISTEA of 1991 which included the Congestion Mitigation Air Quality Program (CMAQ). The CMAQ program has been reauthorized under every successive Transportation Bill up to and including the FAST Act in 2015. The CMAQ program was implemented to support surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief. CMAQ funds can be used to implement new transit service that can be shown to reduce precursor pollutants such as VOC's and NOx.

Transit projects such as an expansion of service of the operation of a new route can be funded through the CMAQ program for up to three years of service. The CMAQ program covers 80% of the operating costs with federal dollars requiring a 20% non-federal match. The decision to fund CMAQ projects lies with the New Hampshire Department of Transportation Commissioners office.

In the next section, proposed routes within the region are described with accompanying tables showing the type of service and associated annual costs. Columns three and four show the non-federal match using FTA 5307 funds and CMAQ funds respectively.

Service Expansion - Within the Region

Milford/Amherst/South Merrimack

The Downtown and portions of the east side of Milford include one of the most densely populated areas of the region outside of Nashua. These areas also include several multi-family and senior living residential areas and socioeconomic indicators are measurably lower than regional averages. Additionally, the Downtown Milford area is the most walkable area of the region outside of Downtown Nashua, improving accessibility to potential transit stop locations. Significant existing SVTC activity in the Souhegan Valley, and particularly Downtown Milford, indicates an existing need and demand for transit services.

The Route 101A corridor includes a very large concentration of commercial uses, including a Walmart Super Center, stretching from Nashua through South Merrimack, and Amherst to East Milford. Existing NTS ridership levels indicate rider demand is strongest on busy commercial corridors and current riders have expressed significant interest in accessing a Walmart store.

To provide service along this commercial corridor, a four phased approach is outlined below. This will allow service to grow in each phase before expanding the service further west. All routes would operate between 6 am and 6 pm during the weekday and between 9 am and 5 pm on Saturdays.

As transit expands westward along 101A a transit hub should be planned and located in the vicinity of the Nashua/Merrimack border. The hub would provide shelter for passengers, it would accommodate fixed-route service and it would be multi-modal. The hub would provide links between commuter, interregional and local service and would have spurs towards the Merrimack Premium Outlets and west along Route 101A.

Pilot– Westside Plaza to Walmart in Amherst/1 weekday per week

Milford Phase 1 - Westside Plaza to Walmart in Amherst / Alternating with the Merrimack Outlets

Milford Phase 2 - Walmart in Amherst to the Milford Oval

Milford Phase 3 - Milford Oval to Market Basket / Wilton Center

Pilot– Westside Plaza in Nashua to Walmart in Amherst

This pilot project will create a connection from Westside Plaza in Nashua to Walmart in Amherst. The route would operate one day per week and have 1 hour headways and would extend from Westside Plaza (at the terminus of NTS Route 2/2A), continuing west on NH 101A to the Walmart in Amherst.

The purpose of this pilot is to verify the level of interest in accessing a Walmart store.

Pilot - Westside Plaza in Nashua to Walmart in Amherst			
Route with 1 hour headways will access Walmart in Amherst			
Type of Service	Total Annual Operating and Maintenance Cost	FTA 5307 Option 50% Non-Federal Match	CMAQ Option 20% Non-Federal Match
1 Weekday Fixed Route	$42,333	$21,167	$8,467
1 Weekday Para-Transit	$61,902	$30,951	12,380
Total Operating Cost	**$104,235**	**$52,118**	**$20,847**
		20% Capital Cost	20% Capital Cost
Signage along Route	$2,500	$500	$500
Passenger Shelters (1)	$10,000	$2,000	$2,000
Total Capital Cost	**$12,500**	**$2,500**	**$2,500**

Service Expansion - Within the Region

Milford/Amherst/South Merrimack

Phase 1 – Westside Plaza in Nashua to Walmart in Amherst / Alternating with the Merrimack Outlets.

Upon completion of the Pilot project, Phase 1 would incorporate two routes, each with 1 hour headways, with access to Walmart in Amherst alternating with the Merrimack Premium Outlets. Route 1 would extend from Westside Plaza (at the terminus of Route 2/2A) continuing west on NH 101A to the Walmart in Amherst. Route 2 would extend from Westside Plaza on NH 101A in Nashua traveling west to Continental Boulevard then continuing north on Industrial Drive and terminating at the Merrimack Premium Outlets.

Phase 2– Westside Plaza to the Milford Oval.

Once service had been established to Walmart in Phase 1, then Phase 2 will build upon this and extend west stopping at other retail and employment sites along NH 101 A in Amherst and Milford and returning eastbound at the Milford Oval. Due to the number of miles this route would travel, this service would operate on 1 hour headways. This route would replace the service to Walmart in Amherst and the Merrimack Outlet service would become an independent route.

Milford Phase 1 - Westside Plaza to Walmart in Amherst / Alternating with the Merrimack Outlets			
Two routes each with 1 hour headways will access Walmart in Amherst alternating with the Merrimack Premium Outlets.			
Type of Service	Total Annual Operating & Maintenance Cost	FTA 5307 Option 50% Non-Federal Match	CMAQ Option 20% Non-Federal Match
Weekday Fixed Route	$211,666	$105,833	$42,333
Weekday Para-Transit	$309,509	$154,755	$61,902
Saturday Fixed Route	$33,262	$16,631	$6,652
Saturday Para-Transit	$48,637	$24,319	$9,727
Total Operating Cost	**$603,074**	**$301,537**	**$120,615**
		20% Capital Cost	20% Capital Cost
Signage along Route	$2,500	$500	$500
Passenger Shelters (2)	$20,000	$4,000	$4,000
Type of Bus: 30'CNG	$500,000	$100,000	$100,000
Total Capital Cost	**$522,500**	**$104,500**	**$104,500**

Milford Phase 2 - Westside Plaza to the Milford Oval			
Continue west from Westside Plaza in Nashua on NH 101A to the Milford Oval. 1 hour headways.			
Type of Service	Total Annual Operating & Maintenance Cost	50% Non-Federal Match/50% Federal Annual Operating and Maintenance Cost— 5307	20% Non-Federal Match/80% Federal Annual Operating and Maintenance Cost— CMAQ
Weekday Fixed Route	$211,666	$105,833	$42,333
Weekday Para-Transit	$309,509	$154,755	$61,902
Saturday Fixed Route	$33,262	$16,631	$6,652
Saturday Para-Transit	$48,637	$24,319	$9,727
Total Operating Cost	**$603,074**	**$301,537**	**$120,615**
		20% Capital Cost	20% Capital Cost
Signage along route	$2,500	$500	$500
Passenger Shelters (2)	$20,000	$4,000	$4,000
Type of Bus: 30' CNG	$500,000	$100,000	$100,000
Total Capital Cost	**$522,500**	**$104,500**	**$104,500**

Service Expansion - Within the Region

Milford/Amherst/South Merrimack

Phase 3 – Milford Oval to Market Basket / Wilton Center

The travel ridership model and survey results indicates that there is some additional level of demand to access more western destinations such as the Market Basket at the intersection of NH 101 A and NH 101, as well as Downtown Wilton. There may not be sufficient ridership to support a fixed route service so a more cost effective option would be deviated demand response service extending west from the Milford Oval along NH 101A to the Market Basket in Milford and to Wilton Center. Service would travel along this route but also 'deviate' to pick up riders in close proximity to the route as well.

Milford Phase 3 - Milford Oval to Market Basket / Wilton Center			
Deviated demand response service extending west from the Milford Oval along NH 101A to the Market Basket in Milford and to Wilton Center.			
Type of Service	Total Annual Operating and Maintenance Cost	50% Non-Federal Match/50% Federal Annual Operating and Maintenance Cost - 5307	20% Non-Federal/80% Federal Annual Operating and Maintenance Cost—CMAQ
Weekday Para-Transit	$309,509	$154,755	$61,902
Saturday Para-Transit	$48,637	$24,319	$9,727
Total Operating Cost	**$358,146**	**$179,073**	**$71,629**
		20% Capital Cost	20% Capital Cost
Signage along Route	$2,500	$500	$500
Passenger Shelter	$10,000	$2,000	$2,000
Type of Bus: Diesel Van	$150,000	$30,000	$30,000
Total Capital Cost	**$162,500**	**$32,500**	**$32,500**

Service Expansion - Within the Region

Merrimack Outlets

The Merrimack Premium Outlets, located off of Industrial Drive in Merrimack near Exit 10, are currently unserved by public transit. This is a key employment and retail center for the region and the Ridership Prediction Model indicates that this would be a very busy transit stop for boardings and alightings. To start, service to the Outlets would begin at Westside Plaza in Nashua and alternate with service to the Amherst Walmart, each with 1 hour headways. If ridership increased over time service could increase to 1/2 hour headways with a designated route to the Outlets from Nashua, The cost table for this service is shown as part of Milford Phase 1.

Merrimack – D.W. Highway

Multi-family housing in Merrimack is concentrated along the Daniel Webster Highway corridor, where several commercial uses are also located. Socioeconomic indicators suggest this area includes some vulnerable communities who could benefit from transit service. The Ridership Prediction Model indicates that ridership at the new Shaw's Plaza would be 'Busy'.

The route would travel from the Nashua Transit Center north along Main Street, Concord Street and D.W. Highway through almost all of Merrimack. Ideally the route could return service at a bus pullout / shelter located at the proposed Flatley Development located just north of Bedford Road in Merrimack and south of the Airport Access Road. Due to the distance of this route it would be serviced via 1 hour headways.

Merrimack - DW Highway			
Service from Nashua north along D.W. Highway in Merrimack.			
Type of Service	Total Annual Operating and Maintenance Cost	50% Non-Federal Match /50% Federal Annual Operating and Maintenance Cost - 5307	20% Non-Federal Match /80% Federal Annual Operating and Maintenance Cost -CMAQ
Weekday Fixed Route	$211,666	$105,833	$42,333
Weekday Para-Transit	$309,509	$154,755	$61,902
Saturday Fixed Route	$33,262	$16,631	$6,652
Saturday Para-Transit	$48,637	$24,319	$9,727
Total Operating Cost	**$603,074**	**$301,537**	**$120,615**
		20% Capital Cost	20% Capital Cost
Signage along Route	$2,500	$500	$500
Passenger Shelter (1)	$10,000	$2,000	$2,000
Type of Bus: 30' CNG	$500,000	$100,000	$100,000
Total Capital	**$512,500**	**$102,500**	**$102,500**

Service Expansion - Within the Region

Hudson

Hudson and Hudson Town Center are located in very close proximity to areas of Nashua heavily served by NTS service, suggesting that Hudson transit service could be established with a relatively minimal capital investment. The presence of two bridges linking Nashua and Hudson presents the opportunity for a transit loop service of some kind.

The Hudson Town Center is fairly densely populated and includes pockets of lower income communities who would benefit from transit availability. Residents of the Anne Marie House, a facility for homeless families located along Route 3A near Hudson Town Center, would particularly benefit from transit services. Route 3A includes a significant concentration of retail and food service uses, including a Wal-Mart store.

Both the ridership survey and predication model show a high demand for service to the Walmart and Sam's Club on Route 3A. In addition, there are a number of other commercial centers along this corridor and demographic factors that support a need for transit.

The following two options would provide transit from downtown Nashua to Hudson and service the anticipated park and ride facility at Crown Street in Nashua. Both options would operate between 6 am and 6 pm during the weekday and between 9 am and 5 pm on Saturdays.

Option 1 - From the Transit Center continue east over the Taylor Falls Bridge then north on Derry Road to Hannaford. From Hannaford travel south on 3A to Walmart. Return north to the Nashua Transit Center.

Option 2 - Same as Option 1, when leaving Walmart continue west over the Sagamore Bridge and continue north on Daniel Webster Highway to the Nashua Transit Center.

Hudson			
Service from Nashua to Route 3A in Hudson.			
Type of Service	Total Annual Operating and Maintenance Cost	50% Non-Federal Match /50% Federal Annual Operating and Maintenance Cost - 5307	20% Non-Federal Match/80% Federal Annual Operating and Maintenance Cost -CMAQ
Weekday Fixed Route	$211,666	$105,833	$42,333
Weekday Para-Transit	$309,509	$154,755	$61,902
Saturday Fixed Route	$33,262	$16,631	$6,652
Saturday Para-Transit	$48,637	$24,319	$9,727
Total Operating Cost	**$603,074**	**$301,537**	**$120,615**
		20% Capital Cost	20% Capital Cost
Signage along route	$2,500	$500	$500
Passenger Shelters (3)	$30,000	$6,000	$6,000
Type of Bus: 30' CNG	$500,000	$100,000	$100,000
Total Capital Cost	**$532,500**	**$106,500**	**$106,500**

Service Expansion - Beyond the Region

Boston Manchester Regional Airport

The ridership survey results indicated that residents in the region would like the capability to utilize transit service to access the Boston Manchester Regional Airport. The presence of the F.E. Everett Turnpike and Raymond Wieczorek Drive (the Manchester Airport access road), improves potential transit accessibility to the Airport.

From downtown Nashua, service would continue north on the F.E. Everett Turnpike to the Park and Ride facility at Exit 6 or Exit 8 and north to the Manchester-Boston Regional Airport then returning to the . 1 hour headways.

This route currently assumes service would operate during NTS's standard service hours. However, to be most effective this service would likely need to run earlier and later than existing service hours in addition to Sundays. In order to do this, the NTS dispatch office would need to extend service hours and a more detailed cost assessment would be required.

Additionally, FTA requirements for complementary paratransit service do not apply to commuter bus routes. NTS would need to build the case that this is a commuter route. In the meantime, paratransit costs have been included in this cost estimate.

Airport			
Express/Commute service between Nashua and the Boston Manchester Regional Airport.			
Type of Service	Total Annual Operating and Maintenance Cost	50% Non-Federal Match/50% Federal Annual Operating and Maintenance Cost - 5307	20% Non-Federal Match/80% Federal Annual Operating and Maintenance Cost -CMAQ
Weekday Fixed Route	$211,666	$105,833	$42,333
Weekday Para-Transit	$309,509	$154,755	$61,902
Saturday/Sunday Fixed Route	$66,524	$32,262	$13,304
Saturday/Sunday Para -Transit	$97,274	$48,638	$19,454
Total Operating	$684,973	$342,488	$136,995
Type of Bus	2 Diesel Vans Converted w/ Luggage Racks		
	2 Buses	20% Capital Cost	20% Capital Cost
Capital Costs	$300,000	$60,000	$60,000

Connection with Manchester Transit Authority

Currently the Manchester Transit Authority runs service south to Nashua via the F.E. Everett Turnpike to Exit 6. As discussed earlier, this proposed service would provide an additional convenient connection between the Merrimack Outlets and Manchester. Initially the route's origin would being at Amherst Walmart (terminus of the Phase 1 Route 101A proposed route from West Side Plaza) and continue to the outlets, plaza then up to the MTA Manchester hub. Refer to Milford Phase 1 Table for costs.

Service Expansion - Seasonal Service

Hampton Beach

Service would operate 4 times a summer on Saturdays. Two routes would leave Nashua in the morning at 8:30 am and 10 am, with return trips from Hampton Beach at 2:30 and 4 pm. This type of service may also attract riders who do not currently utilize NTS's services. Currently NTS does not have a fee schedule to accommodate this type of service and would have to consider fee options such as a day pass.

Hampton Beach		
Type of Service	Total Annual Operating and Maintenance Cost	50%Non-Federal Match/50% Federal Annual Operating and Maintenance Cost - 5307
Fixed Route	$2,559	$1,279

Canobie Lake Park

Similar to the Hampton Beach route, service to Canobie Lake would also operate 4 times a summer, alternating with the Hampton Service. Service would leave Nashua at 10:30 am 4:30 pm with return trips from Canobie Lake Park at 5 pm and 10 pm. The Federal Coach Service rules would need to be adhered too. In addition, there may be opportunities for a public—private partnership with the Park.

Canobie Lake Park		
Type of Service	Total Annual Operating and Maintenance Cost	50% Non-Federal Match/50% Federal Annual Operating and Maintenance Cost - 5307
Fixed Route	$2,093	$1,047

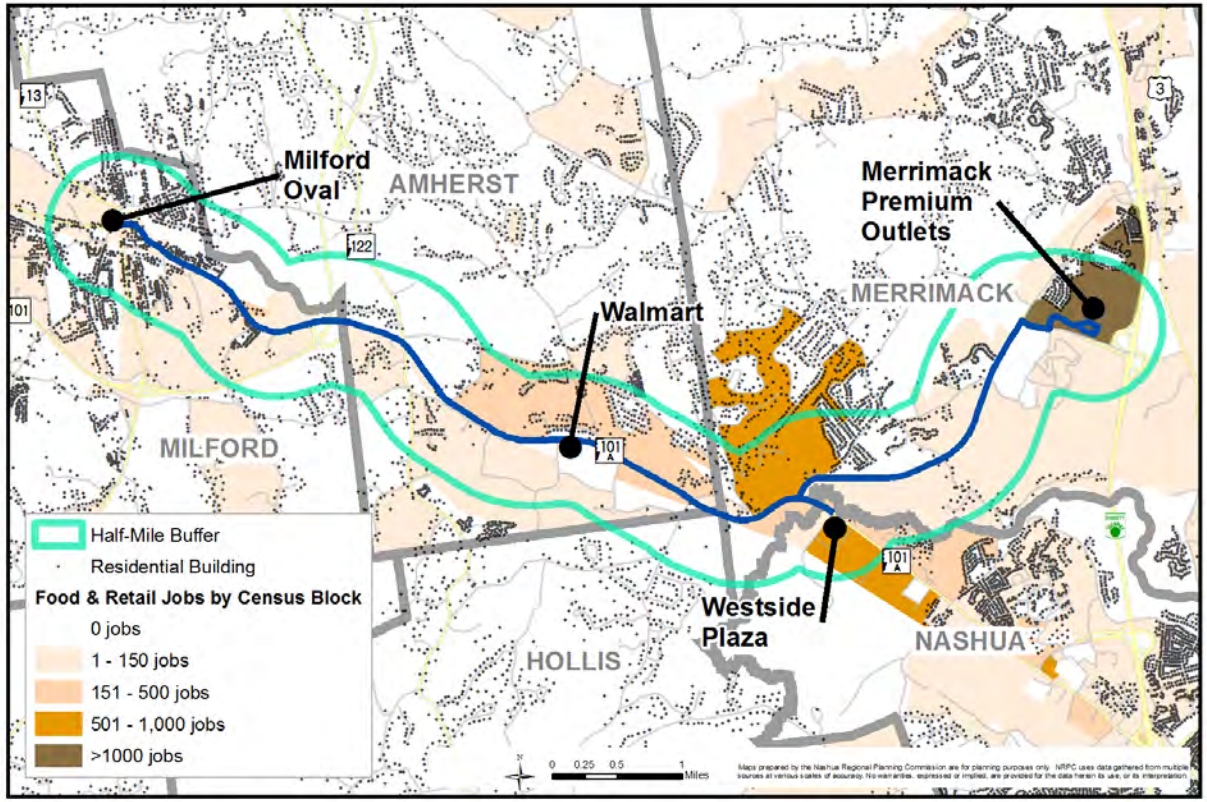
Responsibility for Bus Stops and Shelters at Locations Outside of the City of Nashua

Locating bus stops and shelters at locations outside the City of Nashua will be done in coordination with Nashua Transit System, respective communities and private property owners. MOUs will need to be developed to address issues related to the purchase, siting and maintenance of shelters.

Service Expansion – Share of Local Match – Example

Expanding service beyond the City would require additional revenue from FTA was well as match to support those federal funds. Expanding service outside of the city requires a means to identify a fair and transparent method to calculate needed match.

NTS could consider a funding formula that considers population and employees within ½ mile of the fixed route, the service miles provided, and eventually, the ridership on that route. A similar methodology has been implemented by the Cooperative Alliance for Seacoast Transportation (COAST) out of Dover NH. As an example, this map and the following table show this blended average method applied to the scenario of service expansion from Westside Plaza in Nashua down 101A to the Milford Oval and from Westside to the Merrimack Outlets. The assumed total operating costs for both routes are estimated at $1,206,148. Below, both a 20% local match and 50% local match are apportioned across communities served.



	Population[1]		Employment[2]		Service Miles[3]		Funding Share[4]		
	Est. Current Population	% of Total Est. Current Population	Est. Current Food & Retail Jobs	% of Total Est. Current Food & Retail Jobs	New Route Length (Miles)	% of Total New Route Length	% Share of Total Local Match for New Routes	Share of 20% local match - Total Dollars	Share of 50% local match - Total Dollars
Amherst	1,414	14%	649	15%	3.34	19.3%	**16%**	**$38,422.45**	**$96,056.09**
Merrimack	1,344	13%	2014	46%	4.18	24.2%	**28%**	**$66,781.69**	**$166,954.18**
Milford	6,968	67%	918	21%	6.39	37.0%	**42%**	**$100,793.15**	**$251,982.82**
Nashua	603	6%	814	19%	3.36	19.5%	**15%**	**$35,232.37**	**$88,080.91**
All Towns	10,330	100%	4,395	100%	17.26	100%	100%	**$241,229.66**	**$603,074.00**

[1]Source: NRPC GIS dwelling counts per building, 2014 Each dwelling is assumed to house 2.6 persons. [2]Source: U.S. Census Longitudinal Employer-Household Dynamics Work-place Area Characteristics (WAC) 2014. [3]Source: NRPC GIS, NTS. All routes assumed to run 12 hours with 1-hour headways. [4]Source: Operating costs for weekday and week-end fixed route and paratransit service. Does not include initial required capital expenditures.

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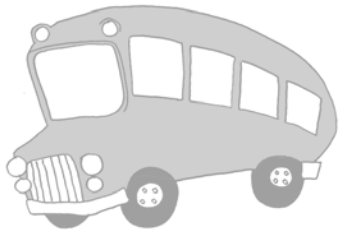

NTS
COMPREHENSIVE
PLAN

The Road Ahead

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The Road Ahead

The mission of the Nashua Transit System is to provide a level of public transportation that allows for a convenient, affordable, reliable and environmental friendly method of transportation servicing the needs of citizens through a dedicated, professional, and customer focused workforce.

The development of this plan has reinforced NTS commitment to sustained exceptional public transportation service within the City of Nashua, to expanding that service throughout the region, and to making key transportation connections to areas outside of the region.

The community outreach affirms that NTS has been achieving its mission in serving the needs of its existing customers however there are a few key improvements that arose for both existing customers and in looking to expand the customer base that NTS will be focusing on in the short-term:

- Technology: A real time application that allows riders to access from their mobile devices to determine the exact location of buses. This will better connect them with the service.
- Safety: Continue staff training on our core mission while promoting interagency connections and improving emergency preparedness response.
- Finance: Seek public/private partnerships to implement some of the priority expansion of service opportunities such as service to Hampton Beach, and Walmart.
- Marketing & Outreach: Promote connections with the local business community to promote the integration of NTS service to new areas and/or better service existing areas.
- Infrastructure: Continued fixed route and paratransit bus fleet replacements as needed.
- Safety: Continue staff training & promote emergency preparedness with interagency connections.

This plan has identified a path forward for improved service through innovative technology and the need for a new bus fleet.

This plan aligns NTS's current and future expansion plans with the Nashua Regional Planning Commission's (NRPC) 2014 Regional Plan and Metropolitan Transportation Plan and ensures consistency with current state and federal transportation objectives under the requirements of the FAST Act.

This plan will be used to guide the Nashua Transit System for the next ten years.